



**PEER 10 - Supplementary Information Regarding the  
National Academy of Sciences**



Department of Energy  
Washington, DC 20585

AUG 18 1989

Dr. Peter B. Myers  
Staff Director  
Board on Radioactive Waste Management  
National Academy of Sciences  
2101 Constitution Avenue, N.W.  
Washington, D.C. 20418

Dear Dr. Myers:

In June, at my request, you provided me with the series of Academy reports to the Department of Energy containing recommendations on the Waste Isolation Pilot Plant (WIPP). You also provided me with the status of 44 recommendations. I have asked the WIPP staff to review the documents and prepare responses on each of the recommendations which was not marked "complete". Enclosed are the responses for each of the five reports. These responses provide information on how the recommendations were accommodated. With respect to recommendations in the two most recent Academy reports (Enclosures 4 and 5), we have cited specific areas in the current plans for the test phase where the relevant investigations are described.

It appears that in the past, the Department of Energy addressed many of the recommendations through informal presentations to the WIPP panel. I regret these were not better confirmed with a more consistent documentation process. I would appreciate your suggestions as to the steps that could provide more continuity and rigor to this process. In addition, could you and the WIPP panel review the enclosures in order to identify for me any issues which need more attention at this time. If more information is needed, perhaps it could be provided at your next meeting in September.

After we have received comments from the Environmental Protection Agency and the Environmental Evaluation Group, we will be revising the Test Plan which was reviewed in the panel's July 19, 1989, report. I will keep you informed as to our plans as they develop.

Sincerely,

Leo P. Duffy  
Special Assistant to the Secretary  
for Coordination of  
DOE Waste Management

5 Enclosures

ENCLOSURE 1: RESPONSES TO RECOMMENDATIONS CONTAINED IN DOE/NE/93023-3, NATIONAL RESEARCH COUNCIL (1983) WIPP INTERIM REPORT FOR THE PERIOD JULY 1, 1978 TO JULY, 1982.

The following two reports are referenced below: DOE 89-011, draft Management Plan for Performance Assessment and Operations Demonstration for the Waste Isolation Pilot Plant, April, 1989; and SAND89-0178, Preliminary Plan for Disposal-System Characterization and Long-Term Performance Evaluation of the Waste Isolation Pilot Plant, Sandia National Laboratories, S. G. Bertram-Howery and R. L. Hunter, editors, April, 1989.

1. Evaluate the practical effects of resource extraction in zone four to assess whether such extraction poses significant threat to the safety and integrity of the repository.

Response: During the WIPP Site and Preliminary Design Validation (SPDV) effort, it was determined that resource extraction from within Zone 4, especially removal of hydrocarbon resources, would be acceptable. Therefore, Zone 4 was removed from consideration, and the land made available for drilling activities. At present, there is no DOE control outside the "land-withdrawal boundary," i.e., outside the 16-square-mile area contained in Zone 3.

2. Locate one or both of the remaining hydrologic test holes planed to be drilled in 1983 in lineaments or fracture traces if such features are revealed on satellite images or high altitude areal photographs. Test holes so located will help determine fracture concentrations.

Response: Since 1983, eight hydrologic exploration holes have been drilled in the site area (H-11, H-12, H-14, H-15, H-16, H-17, H-18, DOE-2). Hole DOE-2 was sited (see issue 2, above) to address the issue of deep-seated evaporite dissolution; Rustler hydrologic data were secondary. Of the other holes, four (H-11, 12, 15, and 17) were drilled specifically to define a suspected high transmissivity zone within the Culebra in the southeastern portion of the WIPP site. In addition, multipad interference tests have been completed at the H-3 and H-11 hydropads to better define this zone (by agreement with the State of New Mexico). Completed reports that deal specifically with the hydrologic role of fracturing in the Culebra include Haug et al., 1987, SAND86-7167 and LaVenue et al., 1988, SAND88-7002. Also, radar profiling of the surface area of the site to delineate possible lineaments was completed in September 1987; none were identified.

This topic was addressed in the "Results of H-3 Multipad Test" briefing to the NAS WIPP Panel by Beauheim and Tomasko on 5/12/86. It has also been discussed in the Beauheim



presentations in October 1983, May 1985, November 1985, and December 1986.



3. Obtain in a timely manner operational experience with handling and placement of various types of waste packages at WIPP site.

Response: The NAS comment reflected their desire for WIPP to use few and less variety of waste package sizes and shapes to benefit operational smoothness. NAS proposed gaining operational experience with the various sizes and shapes available to select a few optimum sizes that would be best for WIPP Waste Handling Operations. Since then the project has progressed to the point where DOE has designed the TRUPACT II shipping container and committed to the state of New Mexico for its use to ship waste to WIPP. With the TRUPACT II shipping container, the vast majority of waste will be packaged as 7-packs of drums or in standard waste boxes. Only very small quantities of waste would be shipped in other than these two standard containers and would still be required to fit within the TRUPACT II shipping container (approximately 6 feet in diameter x 6 feet high). See DOE/WIPP 89-011, Chapter 3.0.

4. Keep the WIPP R&D program flexible to accommodate changes suggested by early WIPP results or other waste disposal technologies by other organizations.

Response: The program's response to WIPP results as well as to lessons learned from other technologies is reflected in each annual program plan. These changes are addressed in the summary reports for site characterization and technology development, SAND88-0157 and SAND88-0844, respectively. The NAS WIPP Panel and staff officer received copies of these reports and were briefed on changes as they occurred. The program also benefited from the interactions with the commercial salt repository program until its cancellation and from the interactions with the West German repository program as part of the FRG/US Bilateral Agreement. As reflected in the FOREWORD and the INTRODUCTION (p.I-1) of SAND89-0178, the R&D program will remain flexible. As feedback is obtained from experiments and performance assessment, plans will be modified.

5. Include special safety precautions in the procedures for handling defense high-level waste in the experimental R&D areas.

Response: Defense high-level waste experiments have been deleted from the WIPP Project effective September, 1988 per direction from DOE HQ.

6. Supplement the tests on waste form, package, overpack, and backfill with above-ground laboratory test.

Response: There has been a continuous laboratory test program addressing the salt/bentonite mixture properties of the backfill, brine sorption, nuclide sorption and solubilities, gas generation, effectiveness of backfill additives, and mechanical behavior of waste and backfill for modeling. These tests have guided and complimented the in situ tests being done at WIPP. The most recent presentation to the NAS WIPP Panel was in February, 1988. See DOE/WIPP 89-011, activities S.1.1.1 through S.1.1.5, S.1.2.6, and Appendix A. See SAND89-0178, activities 1.1.1 through 1.1.6, 1.2.7, and App. A.

7. Remedy existing deficiency in Safety Analysis Report procedures for fighting transient underground fires.

Response: The WIPP Waste Acceptance Criteria requires that all containers for emplacement at WIPP must be noncombustible. Any damaged containers will be overpacked before emplacement. This criterion is documented in WIPP/DOE - 069, Revision 3, "TRU Waste Acceptance Criteria for the Waste Isolation Pilot Plant". A study was completed in April of 1987 that indicated that the probability of a propagating or transient fire in the waste stacks was on the order of  $3 \times 10^{-8}$  per year. This probability is so low that this accident scenario can be eliminated from consideration in the FSAR as a non-credible event (based on DOE/AL Order 5481.1A). This study was presented to the NAS WIPP Panel in 1987.

8. Drop restrictions on permissible mass of organic materials per unit volume of waste from the gas generation criteria if relative humidity of the sealed enclosure at the repository is 60 percent or less.

Response: The NAS WIPP Panel considers issues 11 and 13 to be resolved. Therefore, 12 is also resolved because it relates to the case where the relative humidity is less than 60%, while the relative humidity is greater than 60% at the WIPP. Presentations were made on this subject in an Ad Hoc Brine Room Meeting with interested individuals from the the NAS WIPP Panel on 4/15/88 by D. Deal and J. Nowak ("Review of Ongoing Brine Inflow Studies"), on 12/6/88 by L. Brush ("Radioactive Waste Experiments - Laboratory Tests"), and on 6/7/89 by L. Brush ("Gas Generation").

9. Define the waste acceptance criteria for the defense high-level waste to be used in the experimental program.

Response: Defense high-level waste experiments have ben deleted from the WIPP Project effective September, 1988 per direction from DOE HQ.

10. Establish explicit mechanism for the transfer of information from experiments and information gathered during construction and development to final design.





Response: The mechanism used to transfer data from experiments and tests is the preparation and issue of formal reports. For example, the results of the SPDV program were published in a special report, and geologic data gathered since that time is published annually in the Geologic Field Data and Analysis Report. This data was used in final design and construction of the facility and is used to determine if modifications or changes are necessary.

Each formal report is distributed to public libraries located throughout the United States. All SNL reports are also sent to public libraries, to technical personnel internal and external to the Project, and the NAS Panel members.

Briefings are provided on a quarterly basis to the NAS WIPP Panel, the Environmental Evaluation Group, and to the New Mexico Environmental Improvement Division.

11. Determine if displacement of salt in the far field occurring as a result of long-term closure of excavations significantly increases the permeability of the bulk of the salt.

Response: There are three physical domains of interest surrounding the WIPP excavations:

a) The near-field domain, in which dilation, dewatering, and/or fracturing have occurred. The permeability of this domain appears to be several orders of magnitude larger than that of the undisturbed far-field domain. (see Stormont et al., 1987, SAND87-0176).

b) The far-field domain, in which hydrologic properties are "not significantly affected" by mechanical deformation. Measurements to date in this region indicate a very low halite permeability of 1 to 10 nanodarcies (see, for example, Nowak et al., 1988, SAND88-0122; Deal and Case, 1987, DOE-WIPP-87-008).

c) The far-field domain, as ultimately affected by subsidence. No measurements have been made to date in this region, since significant subsidence has not occurred. However, since deformation at these greater distances will be smaller than in areas already measured, no increase in permeabilities above values reported under (b) above are expected.

In addition, as described in SAND89-0178 and presented at the June, 1989 meeting with the WIPP NAS panel, there is an active ongoing program to investigate the variability of Salado permeability. See DOE/WIPP 89-011, activities S.3.1.x, S.3.2.x, and S.3.3.x. See SAND 89-0178 activities 3.1.x, 3.2.x, and 3.3.x.

12. Determine if sealing the repository is sufficient to preclude unacceptable increases in hydrologic conductivity across the repository horizon.

Response: The sealing program was presented to the NAS WIPP Panel on 8/85, 11/85, 9/86, and 3/88. The results of the WIPP seal evaluation have been documented in SAND87-3083 and SAND88-0844; both documents were distributed to the panel members and the staff officer. The evaluation determined that nothing has been discovered that would prevent the effective sealing of WIPP.

13. Delineate the through karst-type flow in the rustler aquifer near Nash Draw.

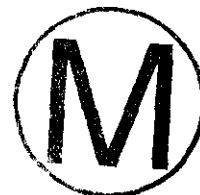
Response: The Project recognizes the potential for karstic processes near the WIPP site, as at the unique structure at hole WIPP-33. In addition, the Project has investigated the potential for karstic structures on the surface at the WIPP site itself. The conclusions of these studies are that:

a) Surficial depressions at and near the WIPP site, with the exception of the WIPP-33 structure, are not due to karstic activity, but are due to wind erosion (Bachman, 1985, SAND84-7178).

b) Within Nash Draw, evaporite karst is expressed by development of caverns in near-surface gypsums and anhydrites of the Rustler, not as caverns within the Rustler dolomites (see Bachman, 1987, SAND86-7078). Therefore, we conclude that karstic flow is real within Nash Draw, but that it effects portions of the Rustler other than the Rustler dolomites that dominate flow in the Site area.



ENCLOSURE 2: RESPONSES TO RECOMMENDATIONS CONTAINED IN 3/27/87 LETTER, FRANK L. PARKER, CHAIRMAN, NAS BOARD ON RADIOACTIVE WASTE MANAGEMENT, TO THOMAS ANDERSON, DOE.



1. This letter from the Board on Radioactive Waste Management forwarded the results of its review of "The Defense Waste Management Plan for Buried Transuranic Waste, Transuranic-Contaminate Soil, and Difficult to Certify Transuranic Waste."

Response: Attached is a copy of the response provided to the NAS originally. The DOE believes these recommendations were addressed in the revised Plan.



JUN 3 1987

Frank L. Parker, Ph.D., Chairman  
Board on Radioactive Waste Management  
National Research Council,  
National Academy of Sciences  
2101 Constitution Avenue  
Washington, DC 20418

Dear Dr. Parker:

Thank you and the Board on Radioactive Waste Management for your review of the Defense Waste Management Plan for Buried TRU-Contaminated Waste, TRU-Contaminated Soil, and Difficult-to-Certify TRU Waste. I am enclosing a copy of the final report as submitted for printing for your information. The final printed document will be available in a few weeks, and copies will be provided to the Board. The Board's comments were very helpful in developing the final document.

I am also taking this opportunity to respond to the Board's comments contained in your March 27, 1987, letter, as follows:

It is not yet clear as to how the various hazardous waste laws and regulations apply to the Department of Energy (DOE) buried TRU sites. Even the process for determining how these criteria would apply is felt to be beyond definition at this time. In response to your comment, discussion was added to the plan to note that specific criteria are not yet available and to identify the regulations and statutes to which each DOE site is currently responding.

The determination of which specific disposal options or alternatives may be evaluated at each site will be made during the process of site compliance with DOE Order 5480.14, CERCLA, RCRA and other applicable requirements. The alternatives used in the plan are intended to illustrate the possibilities, and they will be finalized based on site specific requirements developed during characterization and feasibility investigations.

Based on the comments received at the Board meeting on March 26, 1987, we have included additional information on responsibilities for studies, trade-off analyses, and decision recommendations, reviews and approvals. For your information, although DOE is responsible for the evaluations and decisions, state and Federal regulatory agencies, state and local governments, and interested parties will also be involved in the decision making process.





In further response to the Board's comments at our meeting, we have reviewed the potential for a category of "orphan" wastes to be created during the certification process. For your information, the plan notes that any waste which may remain at the end of the inventory workoff period will be specifically evaluated and a disposition method determined. Possibilities include development of a certification process for the waste, application to MIPP for a waiver of certification, or alternative disposal method (such as greater confinement disposal). DOE plans to address all retrievably stored and newly generated TRU waste, and have a plan for its disposal by the end of the inventory workoff period.

Finally, in regard to the Board's comment on the Maximum Contaminant Level Goals discussed at our meeting, we deleted reference to these requirements in the plan since it was felt that discussion in regard to the buried TRU sites was premature.

Again, thank you for your comments. The Board's comments were most helpful in our timely completion of the document.

Sincerely,

/s/

Thomas C. Anderson  
 DP/NAS Liaison  
 Office of Defense Waste  
 and Transportation Management

Enclosure

cc: Peter Myers

bcc: J. Mathur, DP-123

Distribution:

- so: Addressee
- 1bcc: DP124 RDR
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- 2bcc: DP-12

DP-124: TAnderson:ald:353-3253:6/2/87:WANG1937H

MIRI

File Code 5180.

Coordination

DOE-HQ yes  no  name Mathur org. DP-123

DOE-Field yes  no  name \_\_\_\_\_ org. \_\_\_\_\_

Interagency yes  no  name \_\_\_\_\_ org. \_\_\_\_\_

Other yes  no  name D. Anderson org. DP-123

Controversial Subject? yes  no

Policy Issue? yes  no

8:cert issue? yes  no

Comments:

CONCURRENCES
RTS SYMBOL DP-124
INITIALS TAnderson
DATE 6/2/87
RTS SYMBOL DP-123
INITIALS JMS
DATE 6/2/87
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ENCLOSURE 3: RESPONSES TO RECOMMENDATIONS CONTAINED IN 4/16/87 LETTER, KONRAD B. KRAUSKOPF, CHAIRMAN, NAS WIPP PANEL TO JOHN MATHUR, DOE.

The following two reports are referenced below: DOE 89-011, draft Management Plan for Performance Assessment and Operations Demonstration for the Waste Isolation Pilot Plant, April, 1989; and SAND89-0178, Preliminary Plan for Disposal-System Characterization and Long-Term Performance Evaluation of the Waste Isolation Pilot Plant, Sandia National Laboratories, S. G. Bertram-Howery and R. L. Hunter, editors, April, 1989.

1. Determine by calculations, the probable rate of release to the accessible environment of the important radionuclides in TRU waste on the assumption of no retardation due to sorption.

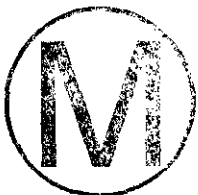
Response: Such calculations are explicitly included in a detailed sensitivity study of radionuclide transport within the Culebra (Reeves et al., 1987 SAND87-7105). In addition, both flow and transport properties within the Culebra were "degraded" from "expected" values as part of transport studies included in the DSEIS (see Lappin et al., 1989, SAND89-0462).

The conclusion, based on calculations contained in SAND89-0462, is that, while WIPP performance appears quite reliable if "expected" properties are controlling, it is possible for WIPP to not comply, if "degraded" properties are controlling, including both flow properties and greatly reduced sorption within the Culebra ( $K_d$ s near zero). The probabilities of property degradations must be factored into the probabilistic compliance measure before projections of compliance (or non-compliance) can be made.

2. Select drillholes for injection and recovery for which the history since drilling is well known with respect to the composition of the drilling fluid.

Response: This test has been cancelled, for a combination of budgetary and technical reasons. Technically, the conclusion was reached by Sandia and communicated to the NAS panel in September, 1987, that greater reliability could be gained by a combination of laboratory experiments and additional hydrologic work than could be gained by operation of a single sorbing-tracer experiment. From a budget point of view, funding was simply not available to perform both the sorbing-tracer test and the desirable additional hydrologic studies.

Detailed agreement was reached with the State of New Mexico (EEG) concerning "studies in lieu of the sorbing-tracer test." This agreement is documented as part of the Appendix to the Agreement for Cooperation and Consultation between US DOE and the State of New Mexico. The agreed studies, including the completion of a multipad interference test at the H-11 hydropad have largely been completed.



3. Recommend additional research in the study of the Culebra hydrology in different parts of the WIPP site to determine what phases are active sorbents for transuranic elements.

Response: This work is ongoing, as agreed to with the State of New Mexico as an activity "in lieu of the sorbing-tracer test," and as documented in SAND89-0178. The level of effort has been somewhat impacted by the effort required in completion of a hydrochemical facies report (Siegel et al., in press, SAND88-0196).

4. NAS urges using radionuclides rather than analog elements as sorbing tracers.

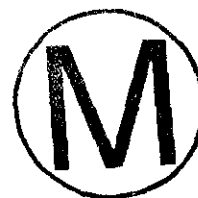
Response: See response to item 2.

5. Conduct tests at more than one hydro pad to give some sense of the possible variability of the formation in order to obtain statistically significant results.

Response: See response to item 2.

6. Conduct a field test accompanied by laboratory determinations of  $K_d$  using chunks of dolomite from drill cores with their surfaces and fractures kept in a state as close as possible to natural conditions.

Response: Concerning operation of a field sorbing-tracer test, see response to item 2. Flow tests using both intact and fractured core are included in present planning, as described in SAND89-0178.





ENCLOSURE 4: RESPONSES TO COMMENTS AND RECOMMENDATIONS CONTAINED IN 3/3/88 LETTER, FRANK PRESS, CHAIRMAN, NATIONAL RESEARCH COUNCIL, TO JOHN S. HERRINGTON, DOE.

The following two reports are referenced below: DOE 89-011, draft Management Plan for Performance Assessment and Operations Demonstration for the Waste Isolation Pilot Plant, April, 1989; and SAND89-0178, Preliminary Plan for Disposal-System Characterization and Long-Term Performance Evaluation of the Waste Isolation Pilot Plant, Sandia National Laboratories, S. G. Bertram-Howery and R. L. Hunter, editors, April, 1989.

1. Establish a well conceived experimental program to reduce remaining uncertainties as a bases for conservative performance assessment.
2. Establish a comprehensive systematic experimental program to reduce uncertainties and support performance assessment as required by EPA.
3. Better define the planned experimental program for five years.

Response: Over the past two years the WIPP Performance Assessment Group has been refocusing the experimental program to supply the needs of the Performance Assessment program. This PA program has been designed on the same basis as that used by EPA in developing the Standard promulgated in 40 CFR Part 191 and appears to be the methodology described in the Guidance (Appendix B) to Subpart B of 40 CFR Part 191. A management plan describing this program has been published and was presented to the NAS on June 6, 1989. The management plan is based on a detailed plan prepared by Sandia National Laboratories. (See section 2.6, of DOE/WIPP 89-011 and all of SAND89-0178).

4. Only when the experimental work has reduced uncertainties about brine accumulation should additional waste containers be emplaced.

Response: The Performance Assessment process is iterative. During the last two years, estimates have been made of the impacts of brine in the rooms at WIPP during and after closure. Additional in situ permeability measurements have been and are being made and mathematical models of brine inflow are being improved. The results are that the Project is relatively certain that that the very low permeabilities that have been measured in situ will allow very little brine to flow into the room before it creeps closed. However, these very low permeabilities suggest that the gases that will evolve from the wastes over time may not dissipate through the host rock. The result is a possible gas problem for the WIPP. Experiments are planned to be conducted in the laboratory, in bins underground, and in room-scale alcoves underground to help quantify the gas problem. The uncertainties in brine inflow have been drastically reduced. The brine room experiment will provide observations in situ to test the current hypothesis. This subject was discussed with



the NAS WIPP Panel 2/18/88. See DOE/WIPP 89-011, activities S.3.3.6, s.3.3.7, S.3.3.8, and S.3.3.9; and SAND89-0178, activities 3.3.5, 3.3.6, 3.3.7, and 3.3.8.

5. Experiments should be designed to lessen uncertainties not to verify preconceived ideas about probable results.

Response: The WIPP experimental program has shifted from one that identifies the important processes operating at and on the repository to one that develops the modeling tools and data needed for completing a performance assessment and evaluating compliance with 40 CFR Part 191. In the process, those experiments designed to test hypotheses have been modified to address hypotheses pertinent to the PA. Models and data are still needed for design and testing of the individual components of the system (e.g., panel seals). These models do attempt to develop the best designs based on preconceived ideas. See DOE/WIPP 89-011, section 2.6 and all of SAND89-0178.

6. Continually refine performance assessment calculations as experimental results are obtained to test confidence in achieving compliance with EPA standards.

Response: Performance Assessment is an iterative process. As new experimental results are acquired, the impacts on compliance with the EPA Standard are assessed. An example of this process for the WIPP program is given in the response to issue 4, above. As new calculations are completed, they will be reported to the NAS, NM EEG, and the scientific community via presentations, memoranda, and technical reports. Preliminary scoping calculations done by the Performance Assessment team were presented to the NAS WIPP Panel in September 1987. The second iteration of calculations was presented to the Panel in February 1988.

7. Develop multiphase models to describe behavior of complex fluids that may form as brine enters repository and gas is generated from waste.

Response: Consideration of the need for two-phase flow is a recent development and was discussed in a preliminary manner in SAND89-0178 (p. 2.24 and activity 3.2.6) and in DOE/WIPP 89-011 (p.2-15 and activity S.3.2.5) Preliminary two-phase calculations should be available near the end of FY89.

8. Investigate feasibility of possible technical "fixes" if the problem of fluids in the repository is serious.

Response: The review of the brine inflow concerns in 2/88 and subsequent tests have provided data that has consistently shown that brine inflow is not a major problem. SAND88-0112 and SAND89-0462 document these results. The brine inflow problem is continually being investigated as a significant input to the PA for WIPP.

See DOE/WIPP 89-011, activities S.1.1.1, S.1.2.1, S.1.1.2, and S.1.2.3; also see SAND89-0178, activities 1.1.1, 1.1.2, 1.1.4, 1.2.1, 1.2.3, and 1.3.1.

A much higher priority and a significantly greater effort will be directed toward the investigation of possible engineering enhancements. A special task force of selected technical experts will conduct this investigation.



ENCLOSURE 5: RESPONSES TO RECOMMENDATIONS CONTAINED IN 12/30/88 LETTER, KONRAD B. KRAUSKOPF, CHAIRMAN, NAS WIPP PANEL, TO CRITZ GEORGE, DOE. TO CRITZ GEORGE, DOE.

The following two reports are referenced below: DOE 89-011, draft Management Plan for Performance Assessment and Operations Demonstration for the Waste Isolation Pilot Plant, April, 1989; and SAND89-0178, Preliminary Plan for Disposal-System Characterization and Long-Term Performance Evaluation of the Waste Isolation Pilot Plant, Sandia National Laboratories, S. G. Bertram-Howery and R. L. Hunter, editors, April, 1989.

1. Recommend a limited number of in-situ tests to observe closure rates around horizontal circular excavations.
2. Investigate the possible effect of differences in scale and geometry by experiment.
3. Determine closure around a 36-inch diameter hole to provide data on a scale intermediate between laboratory scale and full scale.
4. Undertake tests to observe time dependent deformations around holes to compare against numerical model.

Response: The WIPP Project is designing the intermediate-scale borehole test and developing a test plan. The preliminary plan was presented to the NAS WIPP Panel in 1988. See DOE/WIPP 89-011, activity S.3.3.2 and SAND89-0178, activity 3.3.1.





## NATIONAL RESEARCH COUNCIL

COMMISSION ON PHYSICAL SCIENCES, MATHEMATICS, AND RESOURCES

2101 Constitution Avenue Washington, D. C. 20418

BOARD ON  
RADIOACTIVE WASTE MANAGEMENT  
(202) 394-3066

Office Location:  
Milton Harris Building  
Room 462  
2001 Wisconsin Avenue, N.W.



October 17, 1989

Mr. Leo Duffy  
Special Assistant to the Secretary for  
Coordination of DOE Waste Management  
U. S. Department of Energy  
Washington DC 20585

Dear Mr. Duffy:

Thank you for your letter dated August 18, 1989 containing the notes by DOE staff concerning actions taken on past recommendations by the WIPP Panel. Your letter and the notes were provided to the Panel during its September 18-19, 1989 meeting in Albuquerque.

It is clear that the listed recommendations by the Panel cover a range of issues that have assumed greater or lesser importance since they were submitted to DOE. The responses, similarly, are varied in detail and current significance.

In several instances, the responses refer to presentations to the Panel by DOE and its contractors subsequent to the recommendations; in many of these cases it is not clear what reaction the WIPP Panel had to these presentations.

Rather than comment in detail on specific recommendations from the past, the Panel believes it is more productive to note the great improvement in climate of dialogue and mutual responsiveness that now exists between DOE and its contractors and the WIPP Panel, as displayed during the September 18-19 meeting. As members stated during the meeting, the Panel was impressed by the prompt, substantial and, to a large degree, effective actions taken on the recommendations made in the July 16, 1989 letter report. Your concern for frank, professional discussion of issues during the meeting was obvious and much appreciated. The Panel looks forward to continuation and further development of this productive interchange of information.

Yours sincerely,

  
Peter B. Myers  
Staff Director

PEM:jk

cc: Charles Fairhurst, WIPP Chairman  
Frank L. Parker, BRWM Chairman