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**FINAL SUPPLEMENT  
ENVIRONMENTAL IMPACT STATEMENT**

**Waste Isolation Pilot Plant**

**Volume 10 of 13**



**January 1990**

**U.S. DEPARTMENT OF ENERGY  
Office of Environmental Restoration  
and Waste Management**



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Washington, D.C. 20585**



## COVER SHEET

### RESPONSIBLE AGENCIES:

Lead Agency: U.S. Department of Energy (DOE)

Cooperating Agency: U.S. Department of the Interior, Bureau of Land Management (BLM)

### TITLE:

Final Supplement, Environmental Impact Statement, (SEIS), Waste Isolation Pilot Plant (WIPP)

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### ABSTRACT:

In 1980, the DOE published the Final Environmental Impact Statement (FEIS) for the WIPP. This FEIS analyzed and compared the environmental impacts of various alternatives for demonstrating the safe disposal of transuranic (TRU) radioactive waste resulting from DOE national defense related activities. Based on the environmental analyses in the FEIS, the DOE published a Record of Decision in 1981 to proceed with the phased development of the WIPP in southeastern New Mexico as authorized by the Congress in Public Law 96-164.

Since publication of the FEIS, new geological and hydrological information has led to changes in the understanding of the hydrogeological characteristics of the WIPP site as they relate to the long-term performance of the underground waste repository. In addition, there have been changes in the information and assumptions used to analyze the environmental impacts in the FEIS. These changes include: 1) changes in the composition of the TRU waste inventory, 2) consideration of the hazardous chemical constituents in TRU waste, 3) modification and refinement of the system for the transportation of TRU waste to the WIPP, and 4) modification of the Test Phase.

The purpose of this SEIS is to update the environmental record established in 1980 by evaluating the environmental impacts associated with new information, new circumstances, and proposal modifications. This SEIS evaluates and compares the Proposed Action and two alternatives.

The Proposed Action is to proceed with a phased approach to the development of the WIPP. Full operation of the WIPP would be preceded by a Test Phase of approximately 5 years during which time certain tests and operational demonstrations would be carried out. The elements of the Test Phase, tests and operations demonstration, continue to evolve. These elements are currently under evaluation by the DOE based on comments from independent groups such as the Blue Ribbon Panel, the National Academy of Sciences, the Environmental Evaluation Group, and the Advisory Committee on Nuclear Facility Safety. At this time, the Performance Assessment tests would be comprised of laboratory-scale, bin-scale, and alcove-scale tests. The DOE, in December 1989, issued a revised draft final Test Phase plan that focuses on the Performance Assessment tests to remove uncertainties regarding compliance with long-term disposal standards (40 CFR 191 Subpart B) and to provide confirming data that there would be no migration of hazardous constituents (details are available in Subsection 3.1.1.4 and Appendix O). The tests would be conducted to reduce uncertainties associated with the prediction of natural processes that might affect long-term performance of the underground waste repository. Results of these tests would be used to assess the ability of the WIPP to meet applicable Federal standards for the long-term protection of the public and the environment. The operational demonstrations would be conducted to show the ability of the TRU waste management system to certify, package, transport, and emplace TRU waste in the WIPP safely and efficiently. Waste requirements for the Integration Operations Demonstration remain uncertain. A separate document would be developed to describe in detail the Integration Operations Demonstration following the DOE's decision as to the scope and timing of the demonstration.

During the Test Phase, National Environmental Policy Act (NEPA) requirements would be reviewed in light of the new information developed and appropriate documentation would be prepared. In addition, the DOE will issue another SEIS at the conclusion of the Test Phase and prior to a decision to proceed to the Disposal Phase. This SEIS will analyze in more detail the system-wide impacts of processing and handling at each of the generator/storage facilities and will consider the system-wide impacts of potential waste treatments.

Upon completion of the Test Phase, the DOE would determine whether the WIPP would comply with U.S. Environmental Protection Agency (EPA) standards for the long-term disposal of TRU waste (i.e., 40 CFR Part 191, Subpart B; 40 CFR Part 268). The WIPP would enter the Disposal Phase if there was a favorable Record of Decision based on the new SEIS to be prepared prior to the Disposal Phase and if there was a determination of compliance with the EPA standards and other regulatory requirements. During this phase, defense TRU waste generated since 1970 would be shipped to and disposed of at the WIPP. After completion of waste emplacement, the surface facilities would be decommissioned, and the WIPP underground facilities would serve as a permanent TRU waste repository.

The first alternative, No Action, is similar to the No Action Alternative discussed in the 1980 FEIS. Under this alternative, there would be no research and development facility to demonstrate the safe disposal of TRU waste, and TRU waste would continue to be stored. Storage of newly generated TRU mixed waste would be in conflict with the Resource Conservation and Recovery Act (RCRA) Land Disposal Restrictions; treatment would be required to avoid such conflict. The WIPP would be decommissioned as a waste disposal facility and potentially put to other uses.

The second alternative to the Proposed Action is to conduct the bin-scale tests at a facility other than the WIPP and to delay emplacement of TRU waste in the WIPP underground until a determination has been made of compliance with the EPA standards for TRU waste disposal (i.e., 40 CFR Part 191, Subpart B). The bin-scale tests could be conducted outside the WIPP underground facilities in a specially designed, aboveground facility. The implications of this alternative include delays in both the operational demonstrations and alcove-scale tests, the lack of alcove-scale test data for the compliance demonstration, and placing the WIPP facilities in a "standby" mode. The specialized facility for aboveground bin-scale tests could be constructed at any one of the DOE facilities. In order to analyze the environmental impacts of this alternative in the final SEIS, the DOE has evaluated the Idaho National Engineering Laboratory in Idaho as a representative facility for the aboveground bin-scale tests.

#### **ADDITIONAL INFORMATION:**

The 1980 FEIS was reprinted and provided to the public with the draft SEIS which was published April 21, 1989. Public comments on the draft SEIS were accepted for a period of 90 days after publication. During that time, public hearings were conducted in Atlanta, Georgia; Pocatello, Idaho; Denver, Colorado; Pendleton, Oregon; Albuquerque, Santa Fe and Artesia, New Mexico; Odessa, Texas; and Ogden, Utah.

This final SEIS for the WIPP project is a revision of the draft SEIS published in April 1989. It includes responses to the public comments received in writing and at the public hearings and revisions of the draft SEIS in response to the public comments. Revisions of importance have been identified in this final SEIS by vertical lines in the margins to highlight changes made in response to comments.

Volumes 1 through 3 of the final SEIS contain the text, appendices, and the summary comments and responses, respectively. Volumes 6 through 13 of the final SEIS contain reproductions of all of the comments received on the draft SEIS, and Volumes 4 and 5 contain the indices to Volumes 6 through 13. An Executive Summary and/or Volumes 1 through 5 of the final SEIS have been distributed to those who received the draft SEIS or requested a copy of the final SEIS. Although not distributed to all who commented on the draft SEIS, Volumes 1 through 13 of the final SEIS have been placed in the reading rooms and libraries listed in Appendix K; these volumes will be mailed to the general public upon request.

A notice of availability of the final SEIS has been published by the EPA in the Federal Register. The DOE will make a decision on implementation of the Proposed Action or the alternatives no earlier than 30 days after publication of the EPA notice of availability. The DOE's decision will be documented in a publicly available Record of Decision to be published in the Federal Register and distributed to all who receive this final SEIS.



## FOREWORD

The comment and response volume and comment (reproduced public comments) volumes of the Final Supplement to the Environmental Impact Statement (SEIS) for the Waste Isolation Pilot Plant (WIPP) have been prepared in compliance with the Council on Environmental Quality (CEQ) regulations 40 CFR 1503.4 and 1506.6, which provide for the consideration of comments received during the public comment period on the draft SEIS. Volume 3 contains responses by the Department of Energy (DOE) to summaries of the approximately 9,000 pages of comments the DOE received from about 2,200 individuals during the public comment period and during nine public hearings conducted in May, June, and July, 1989. All comments received are reproduced in Volumes 6 through 13. Volumes 4 and 5 contain indices to Volumes 6 through 13.

On February 17, 1989, the DOE announced the preparation of a supplement to the 1980 Final Environmental Impact Statement (FEIS) for the WIPP in a Federal Register notice (54 FR 7251). On April 21, 1989, the DOE published another notice in the Federal Register (54 FR 16350) announcing the availability of the draft SEIS, a 60-day public comment period, and the schedule, locations, and procedures for six public hearings. On June 12, 1989, a notice was published (54 FR 24940), announcing two additional hearings on the draft SEIS, in Texas and New Mexico, and a 7-day extension of the comment period. On June 26, 1989, a notice was published (54 FR 26828) announcing a third additional public hearing on the draft SEIS, in Ogden, Utah, and an extension of the public comment period to July 11, 1989. In response to requests, the public comment period was extended to July 20, 1989 (90 days total), to ensure that all interested citizens had time to comment (54 FR 20909). Nine public hearings were held as follows:

Atlanta, Georgia	May 25, 1989
Pocatello, Idaho	June 1, 1989
Denver, Colorado	June 6, 1989
Pendleton, Oregon	June 8, 1989
Albuquerque, New Mexico	June 13-14, 1989
Santa Fe, New Mexico	June 15-17, 1989
Artesia, New Mexico	June 22, 1989
Odessa, Texas	June 26, 1989
Ogden, Utah	July 10, 1989

On April 13, 1989, copies of the 1980 FEIS and the draft SEIS were distributed to U.S. legislators, Federal agencies, and Governors of the 23 affected States. On April 14, copies of the documents were sent to State agencies, State public libraries, legislators of the 23 States, DOE reading rooms, and to local, State, and national public interest groups. Current generator facilities' mailing lists were obtained and also used. Copies of the 1980 FEIS and the draft SEIS were provided to the public and media upon request.

## HANDLING OF COMMENT AND RESPONSES

At the beginning of the public comment period, a procedure was established to receive, document, identify, and summarize public comments. Each comment (written, oral, exhibit, or question/answer session) has been assigned an identification number and is reproduced in Volumes 6 through 13 of the final SEIS.

The identification numbers assigned were as follows:

- TGXXXXX = Oral testimony given at the Atlanta, Georgia, hearing on May 25, 1989.
- TPXXXXX = Oral testimony given at the Pocatello, Idaho, hearing on June 1, 1989.
- TDXXXXX = Oral testimony given at the Denver, Colorado, hearing on June 6, 1989.
- TOXXXXX = Oral testimony given at the Pendleton, Oregon, hearing on June 8, 1989.
- TQXXXXX = Oral testimony given at the Albuquerque, New Mexico, hearing on June 13-14, 1989.
- TSXXXXX = Oral testimony given at the Santa Fe, New Mexico, hearing on June 15-17, 1989.
- TAXXXXX = Oral testimony given at the Artesia, New Mexico, hearing on June 22, 1989.
- TTXXXXX = Oral testimony given at the Odessa, Texas, hearing on June 26, 1989.
- TUXXXXX = Oral testimony given at the Ogden, Utah, hearing on July 10, 1989.
- WDXXXXX = Written document sent to the DOE during the comment period.
- EXXXXXX = Exhibits (e.g., written testimonies, letters, pictures, poems) submitted at the hearings.
- QXXXXX = Questions asked during the hearing by recognized sources.
- XXXXX = Numbers designating the order in which the comments were received.

The approximately 9,000 pages of comments received from about 2,200 individuals were reviewed, and specific issues, questions, and statements within each were identified. Each issue, question, and statement was identified by topic, and assigned a number (e.g., 2.2-1). Similar comments were frequently raised by a number of different reviewers. These were summarized into a single comment and response. Editorial comments were simply incorporated into the text of the final SEIS.

All letters, transcriptions of oral testimony (including question/answer sessions), and accompanying exhibits were electronically reproduced and are included in Volumes 6 through 13 of the final SEIS.

Figure 1 shows how the comments were handled from receipt to inclusion in the final SEIS.

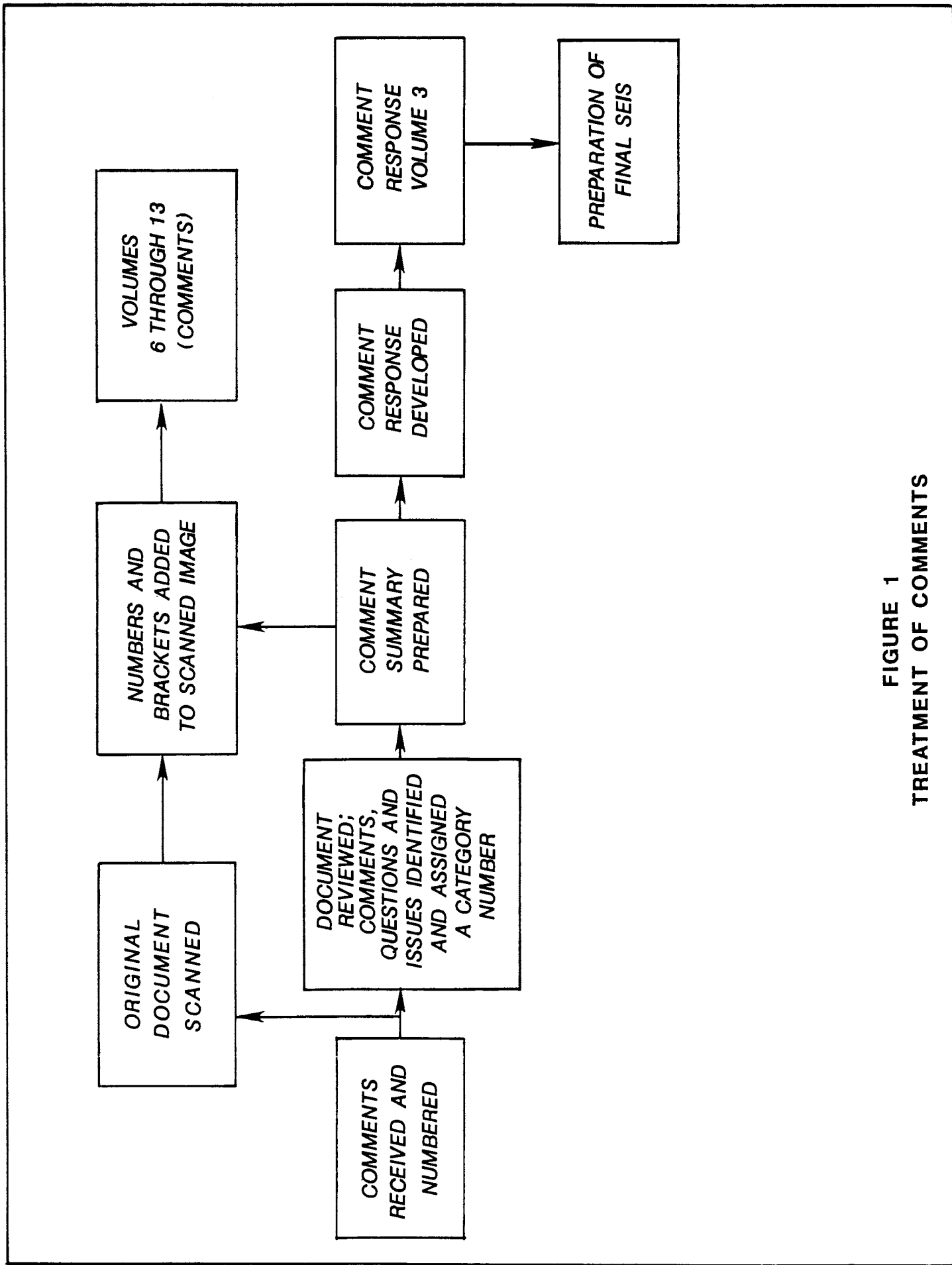


FIGURE 1  
TREATMENT OF COMMENTS

## FINDING RESPONSES TO COMMENTS

This volume is 1 of 13 volumes that make up the final SEIS for the WIPP Project. Volumes 6 through 13 reproduce the public comments received on the draft SEIS. The numbers and corresponding titles of each volume are as follows:

Volume No.	Title
-	Executive Summary
1	Final Supplement Environmental Impact Statement
2	Final Supplement Environmental Impact Statement - Appendices
3	Final Supplement Environmental Impact Statement - Public Comments and Responses
4	Final Supplement Environmental Impact Statement - Index A
5	Final Supplement Environmental Impact Statement - Indices B,C,D,E
6	Final Supplement Environmental Impact Statement - Oral Testimony (Testimony for hearings held in Atlanta, GA; Pocatello, ID; Denver, CO; and Albuquerque, NM)
7	Final Supplement Environmental Impact Statement - Oral Testimony (Testimony for hearings held in Santa Fe, NM)
8	Final Supplement Environmental Impact Statement - Oral Testimony (Testimony for hearings held in Santa Fe, NM)
9	Final Supplement Environmental Impact Statement - Oral Testimony (Testimony for hearings held in Santa Fe, NM; Artesia, NM; Odessa, TX; and Ogden, UT)
10	Final Supplement Environmental Impact Statement - Exhibits
11	Final Supplement Environmental Impact Statement - Exhibits
12	Final Supplement Environmental Impact Statement - Written Documents
13	Final Supplement Environmental Impact Statement - Written Documents

The indices located in Volumes 4 and 5 will help locate specific questions or statements in a letter, exhibit, or transcript of oral testimony, and the DOE's response. Numbers appear in the margins of Volumes 6 through 13 and refer to summary comments. Both the summary comment and the DOE's response are located under the comment number in Volume 3. In this way, each specific comment can be traced from the original to a summary comment and the DOE's response.

Index A (Volume 4) is an alphabetical listing of all individuals and organizations who submitted comments, either in oral or written form. To the right of each name is a list of all the comment numbers assigned to statements or questions made by the commenter and the DOE's response. The volume and page number where the testimony is located are also found in Index A. Indices B through D (Volume 5) are similar to Index A, with the exception that the names of the individuals and organizations are listed in the order that their comments were received. Index B is a listing of oral testimonies. Index C lists exhibits. Index D lists written documents. As in Index A, opposite each commenter's name is a listing of the summary comment numbers which identify specific comments extracted from that individual's or organization's submittal, and the volume and page number where an individual's reproduced comment is located.

Index E (Volume 5) provides a numerical listing of the summary comment and response numbers contained in Volume 3. Listed opposite each summary comment number are the submittal numbers of each individual or organization that made the specific comment that is addressed by the summary comment and response.

As an aid to the reader in locating information in Volumes 6 through 13, the following instructions are provided:

1. To find your specific comment and the DOE response

- Look in Index A in Volume 4.
- Find your name (names are in alphabetical order).
- Summary comments and responses are identified by numbers located to the right of your name.
- Find the summary comment number in Volume 3. (Comment numbers are listed in numerical order.)
- Beneath the summary comment number in Volume 3 will be a comment summary which represents your comment.
- The DOE's response to your comment is directly below the comment summary.

2. To find the reproduction of your comments in Volumes 6 through 13

- Look in Index A in Volume 4.
- Find your name (names are in alphabetical order).
- Find the volume and page number located to the right of your name.
- The reproduction of your comment will appear within the volume identified.

3. To find the comments of others who made the same comment

- Look in Index A in Volume 4.
- Find your name (names are in alphabetical order).
- Look under the Summary Comment/Response number heading.
- Find the Summary Comment/Response numbers that were extracted from your submittal.
- Look in Index E in Volume 5.
- Find the Summary Comment/Response number in Index E that was by your name in Index A. (Index E lists the comment numbers in numerical order.)
- Look at the document numbers opposite that comment number. (Each number identifies an individual who made a comment similar to yours.)
- Go to Index B in Volume 5 if the number begins with a TG, TP, TD, TO, TQ, TU, TS, TA, TT, or QT (e.g., TG00034, TU00645, QT00034).
- Go to Index C in Volume 5 if the number begins with EX (e.g., EX00110, EX00214).
- Go to Index D in Volume 5 if the number begins with WD (e.g., WD00468, WD00030).

- Indices B, C, and D (Volume 5) list the document numbers in numerical order.
- Find the name of the person or organization and the location of their reproduced comment.
- Look up the reproduced comment in Volumes 6 through 13 as appropriate.

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Tuesday  
December 15, 1987

# Federal Register

## Part II Department of Energy Compliance With the National Environmental Policy Act (NEPA): Amendments to the DOE NEPA Guidelines; Notice

**DEPARTMENT OF ENERGY**

Compliance With the National Environmental Policy Act (NEPA): Amendments to the DOE NEPA Guidelines

**SUBJECT:** Department of Energy.

**ACTION:** Notice of amendments to and revision of the Department of Energy's NEPA Guidelines.

**Summary:** The Department of Energy is amending its NEPA Guidelines for compliance with the National Environmental Policy Act (NEPA) by adding eight new typical classes of actions, by modifying four existing typical classes of actions, and by deleting one typical class of actions. The amendments were originally proposed on February 25, 1986, (51 FR 7829). Section D was originally published on March 28, 1987, (52 FR 10978), January 3, 1987, (52 FR 10978), and January 7, 1987, (52 FR 10978). Sections A, B, C, and amended Section D of the NEPA Guidelines are republished in this corrective notice: December 15, 1987.

**FOR FURTHER INFORMATION CONTACT:** Carol Bogstrom, Acting Director, Office of NEPA Project Assistance, Room 3E-26, Room 3E-208 U.S. Department of Energy, 1000 Independence Avenue, SW, Washington, DC 20585 (202) 546-4000.

**Henry Carver, Eng. Assistant General Counsel for Environment, GC-11, U.S. Department of Energy, 1000 Independence Avenue, SW, Washington, DC 20585, (202) 546-4000.**

**Supplementary requirements:** On March 17, 1988, the Department of Energy published the proposed amendments (45 FR 20641) for compliance with the National Environmental Policy Act (NEPA), as required by the Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508). Section D of the Department's guidelines identifies typical classes of DOE actions: (1) which normally do not require an EA or an EIS, (2) which normally require an EA but not necessarily an EIS, and (3) which normally require an EIS. These classes of actions were identical to those present in CEQ regulations (40 CFR 1507.3(b)(3)).

A notice of proposed amendments to the Department's NEPA Guidelines was published on February 25, 1986, (51 FR

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7829. The proposed amendments related primarily to the Department's Power Marketing Administration, and proposed adding eight new typical classes of actions, modifying four typical classes of actions, and deleting one typical class of actions. Specifically, the proposed amendments were the addition of seven and modification of two categorical and deletion of one class of actions which normally require an EA, and the modification of one class of actions which normally require an EIS.

**Section A of the proposed amendments** is a public comment period. No comments were received. The final amendments as stated below are essentially the same as those in the proposed amendments. Certain clarifying changes have been made, as noted.

The following categorical exclusions are added to Section A:

1. Construction (defined as usually being less than 30 miles in length) which are not for the transportation of major new sources of generation into areas where such action decision systems, and which are environmentally sensitive areas such as archeological sites, critical habitats, floodplains, and wetlands. (Note - This exclusion is not applicable to the actions proposed in 50 FR 7829.)
2. Construction of transmission lines, including the definition of "tap lines" and in not a transmission line length criterion, and to include the normal maximum length of 10 miles, but not to exceed 10 miles, for lines, i.e., 10 miles instead of 6 miles).
3. Construction of microcircuit and radio communication towers and radio communication facilities which do not impact environmentally sensitive areas such as archeological sites, critical habitats, floodplains, and wetlands.
4. Construction of transmission lines and radio communication towers and radio communication facilities which have environmental impacts similar to those of microcircuit towers.)
5. Disposal of real property by the Department of Energy.
6. Disposal of real property by the Administration where the former land use is to remain unchanged.
7. Financial and technical assistance to individuals (landlords, owners, tenants, and lessees) and to state and local governments to promote energy efficiency in new structures built in accordance with the Energy Star program, only adopted building codes.
8. Small scale research and development project designed to demonstrate potential electrical energy storage and transmission equipment, residential/commercial buildings, appliances/equipment efficiency standards, and manufacturing and industrial processes (e.g., insulation and lighting efficiencies, appliance efficiency, and development of manufacturing or industrial plant efficiencies).
9. Activities undertaken to restore or improve fish and wildlife facilities, or improvements to existing fish passage facilities at existing dams or diversion canals.
10. Power marketing services including transmission lines, substations, exchanges, or other similar activities where the operations of hydroelectric projects remain within established parameters and which do not alter the characteristics of the projects. The term "load factors" in the amendments proposed in 50 FR 7829 has been replaced by the term "load shaping".
11. The addition of the new categorical exclusion for "load shaping" is necessary to make a conforming change as proposed, to an existing typical class of actions normally requiring an EA. The term "load shaping" has been added to the list of actions normally requiring an EA. The term "load factors" has been deleted from the list of actions normally requiring an EA. The following typical class of actions has been added to the list of actions normally requiring an EA but not necessarily an EIS: "Exception of marketing plans or allocation plans for the long term (greater than 1 year) of allocation (greater than 1 year) of resources who can receive the resources over existing transmission systems." (Note - This has been modified from the amendment proposed in 50 FR 7829 to include an environmental review or marketing or allocation plans rather than an individual contract executed under an existing marketing plan. The term "facilities" in the amendment is already in an existing class of actions requiring an EA. The term "facilities" in the amendment is replaced by the term "plans".)
12. The existing categorical exclusion for the short term or seasonal allocation of excess





which provides sufficient information to support a DOE determination with respect to the criteria of 40 CFR 1502.20(c) and (d). Based on the analysis, DOE will determine whether to prepare an EIS supplement, prepare a DOE determination that EIS supplement is not required, or which explains the basis for that determination.

(1) Where appropriate, DOE will prepare an EIS supplement and submit it into any related formal administrative record prior to making a final decision on the action which is the subject of the EIS supplement or analysis.

**2. Revisions of Time Periods**  
The CEQ regulations (40 CFR 1502.20) allow agencies to provide for periods established in 40 CFR 1502.20 to be altered, if DOE determines that, in order to comply with specific requirements of DOE, it is necessary to make any necessary, a notice of the determination will be published in the Federal Register. This notice will briefly provide the reasons for such alterations and periods, including methods of administrative review, if applicable, may be published jointly with notices published pursuant to this paragraph.

**3. Confidentiality/Other Environmental Law**  
The CEQ regulations (40 CFR 1502.20) provide for the protection of the NEPA policy of full disclosure of NEPA information, this will be done on a case-by-case basis, this will mean that classified or confidential information may be released, prepared as an appendix, or otherwise prepared to allow the release of the substantive portions of a document.

**4. Supplemental Statements**  
(a) If required, DOE will prepare, describe, and file a supplement with a draft or final EIS, in accordance with 40 CFR 1502.20(i). However, where it is unclear whether an EIS supplement is required, DOE will prepare an analysis

which provides sufficient information to support a DOE determination with respect to the criteria of 40 CFR 1502.20(c) and (d). Based on the analysis, DOE will determine whether to prepare an EIS supplement, prepare a DOE determination that EIS supplement is not required, or which explains the basis for that determination.

(b) Use the relevant NEPA document to assist in the review of other environmental decisions and regulations, used to report the status of compliance with these other environmental authorities.

**5. Status of NEPA Actions**  
Individuals or organizations desiring information or other reports or documents related to the progress of any NEPA action should address their inquiries to the Office of NEPA Project Assistance, Department of Energy, 1000 Pennsylvania Avenue, NW, Washington, DC 20540.

**6. Oversight of Agency NEPA Activities**  
The Assistant Secretary for the Environment, Policy and Health, or his/ her designee, will be responsible for overall review of DOE NEPA compliance.

**7. Compliance**  
These guidelines are intended for use by all persons acting on behalf of DOE in carrying out certain provisions of the CEQ regulations. Any deviations from the guidelines should be reported to the Assistant Secretary of DOE.

**8. Revisions to the Guidelines**  
DOE will, in accordance with 40 CFR 1502.20, review these guidelines on a continuing basis and revise them as necessary to ensure full compliance with the purposes and provisions of NEPA, the CEQ regulations, and other laws and regulations. Any such revisions will be published in the Federal Register and will be subject to public review.

DOE hereby announces that it will accept for review the following actions:

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CEO IMPACT STATEMENT REGULATIONS

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compliance with the purposes and provisions of the Act. The phrase "to the extent practicable" in section 101.0313(a) shall not be construed to require the Administrator to prohibit or make compensatory adjustments.

PART 1501--NEPA AND AGENCY PLANNING

1501.1 Purpose. The purpose of this part is to provide for the integration of the NEPA process and the CEQA process for the same project, to the extent practicable, in order to avoid duplication of effort and to ensure consistency in the NEPA and CEQA processes.

1501.2 When to prepare an environmental impact statement. (a) The Administrator shall require the preparation of an environmental impact statement for any project which is subject to the CEQA process and the NEPA process, unless the project is exempt from the CEQA process under section 1501.3.

1501.3 Exemptions. (a) The Administrator shall exempt from the requirement to prepare an environmental impact statement any project which is exempt from the CEQA process under section 1501.3(a).

1501.4 Agency planning. (a) The Administrator shall require the preparation of an environmental impact statement for any project which is subject to the CEQA process and the NEPA process, unless the project is exempt from the CEQA process under section 1501.3.

1501.5 Lead agency. (a) The Administrator shall require the preparation of an environmental impact statement for any project which is subject to the CEQA process and the NEPA process, unless the project is exempt from the CEQA process under section 1501.3.

1501.6 Agency planning. (a) The Administrator shall require the preparation of an environmental impact statement for any project which is subject to the CEQA process and the NEPA process, unless the project is exempt from the CEQA process under section 1501.3.

1501.7 Agency planning. (a) The Administrator shall require the preparation of an environmental impact statement for any project which is subject to the CEQA process and the NEPA process, unless the project is exempt from the CEQA process under section 1501.3.

FEDERAL REGULATIONS

101.0314

of their functional interdependence or interrelationship. (b) The Administrator shall require the preparation of an environmental impact statement for any project which is subject to the CEQA process and the NEPA process, unless the project is exempt from the CEQA process under section 1501.3.

101.0315 Agency planning. (a) The Administrator shall require the preparation of an environmental impact statement for any project which is subject to the CEQA process and the NEPA process, unless the project is exempt from the CEQA process under section 1501.3.

101.0316 Agency planning. (a) The Administrator shall require the preparation of an environmental impact statement for any project which is subject to the CEQA process and the NEPA process, unless the project is exempt from the CEQA process under section 1501.3.

101.0317 Agency planning. (a) The Administrator shall require the preparation of an environmental impact statement for any project which is subject to the CEQA process and the NEPA process, unless the project is exempt from the CEQA process under section 1501.3.

101.0318 Agency planning. (a) The Administrator shall require the preparation of an environmental impact statement for any project which is subject to the CEQA process and the NEPA process, unless the project is exempt from the CEQA process under section 1501.3.

101.0319 Agency planning. (a) The Administrator shall require the preparation of an environmental impact statement for any project which is subject to the CEQA process and the NEPA process, unless the project is exempt from the CEQA process under section 1501.3.

101.0320 Agency planning. (a) The Administrator shall require the preparation of an environmental impact statement for any project which is subject to the CEQA process and the NEPA process, unless the project is exempt from the CEQA process under section 1501.3.

101.0321 Agency planning. (a) The Administrator shall require the preparation of an environmental impact statement for any project which is subject to the CEQA process and the NEPA process, unless the project is exempt from the CEQA process under section 1501.3.

101.0322 Agency planning. (a) The Administrator shall require the preparation of an environmental impact statement for any project which is subject to the CEQA process and the NEPA process, unless the project is exempt from the CEQA process under section 1501.3.





GEO IMPACT STATEMENT REGULATIONS

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101.5017

(d) Purpose of and need for action. The summary shall normally not exceed 1000 words.

(e) Affected environment. The statement shall identify and describe the environmental impacts of the proposed action.

(f) List of Agencies, Organizations, and individuals from copies of the statement are sent.

(g) Index. This section is the heart of the environmental impact statement and shall contain the information and analysis presented in the sections on the Affected Environment, Alternatives, and Summary.

(h) Appendixes (if any). If a different format is used, it shall include paragraphs (a), (b), (c), (d), (e), (f), (g), and (h) of this section, as well as the substance of paragraphs (d), (e), (f), (g), and (h) of this section, as further described in § 1500.11.

(i) Summary. The summary shall be prepared in either draft or final environmental impact statement format.

(j) The summary shall be prepared in either draft or final environmental impact statement format.

(k) The summary shall be prepared in either draft or final environmental impact statement format.

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(af) The summary shall be prepared in either draft or final environmental impact statement format.

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FEDERAL REGULATIONS

(h) Means to mitigate adverse environmental impacts. The summary shall identify and describe the environmental impacts of the proposed action.

(i) Affected environment. The statement shall identify and describe the environmental impacts of the proposed action.

(j) List of Agencies, Organizations, and individuals from copies of the statement are sent.

(k) Index. This section is the heart of the environmental impact statement and shall contain the information and analysis presented in the sections on the Affected Environment, Alternatives, and Summary.

(l) Appendixes (if any). If a different format is used, it shall include paragraphs (a), (b), (c), (d), (e), (f), (g), and (h) of this section, as well as the substance of paragraphs (d), (e), (f), (g), and (h) of this section, as further described in § 1500.11.

(m) Summary. The summary shall be prepared in either draft or final environmental impact statement format.

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(aa) The summary shall be prepared in either draft or final environmental impact statement format.

(ab) The summary shall be prepared in either draft or final environmental impact statement format.

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(aj) The summary shall be prepared in either draft or final environmental impact statement format.













- June 1, 1989    Pocatello, Idaho  
Quality Inn  
1555 Pocatello Creek Road  
Pocatello, Idaho
- June 6, 1989    Denver, Colorado  
The Regency Hotel  
3900 Eliot Street  
Denver, Colorado
- June 8, 1989    Pendleton, Oregon  
Vert Memorial Club Room  
345 Southwest 4th Street  
Pendleton, Oregon
- June 13, 1989    Albuquerque, New Mexico  
Albuquerque Hilton  
1901 University Boulevard, NE  
Albuquerque, New Mexico
- June 15, 1989    Santa Fe, New Mexico  
Sweeney Convention Center  
201 W. Marcy Street  
Santa Fe, New Mexico

Additional days have been scheduled for Albuquerque (June 14, 1989) and Santa Fe (June 16, 1989) if necessary.

Hearing Officer

Roy Ziguren, an attorney from Boise, Idaho, will serve as the hearing officer for all of the hearings. Mr. Ziguren has extensive experience serving in this capacity, including other DOE NEPA hearings. Mr. Ziguren has visited the WIPP facility in Carlsbad and has familiarized himself with the SEIS. In addition, Mr. Ziguren plans to use his role as a neutral third-party in these proceedings to contact public interest groups before the hearings to obtain their input and commitment to the hearing procedures and ground rules as they are finalized. An assistant to Mr. Ziguren will be present at every hearing and will be supplied by the WIPP-SEIS office.

Court Reporters

The Hedrick Court Reporting firm will provide transcripts of the hearings in Atlanta, Pocatello, Denver, and Pendleton. The Howard W. Henry Court Reporting Agency will provide these services for the hearings in New Mexico. Contracts will include arrangements for a guaranteed backup in case of illness, car problems, etc.

Facilities and Arrangements

The WIPP-SEIS Intergovernmental Affairs and Public Information (IAPI) office will coordinate facility arrangements, logistics and equipment needs for the six public hearings along with members of



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the DOE Office of Internal and External Affairs staff and the WIPP Public Affairs office in Carlsbad.

**A. Logistics**

The facility at each hearing location will be arranged according to the attached diagram.

The hearing room will be set up theater style with reserved seating sections in front rows. These sections will be reserved for upcoming speakers, print media, and DOE and BLM officials who are not on the DOE panel.

Microphones will be provided for the presiding officer, members of the DOE panel and those making comments. During the agency comment session, the presenters will speak from a microphone-equipped podium. Two podiums will be set up so that as one agency is presenting its comments, the agency that will follow can set up to allow for a more efficient use of time.

Presenters during the general public comment session will also speak from a microphone-equipped podium. Two podiums will be used to allow maximum use of time. Arrangements are being made for the presiding officer to have a dead switch, if possible, for each podium microphone in case a speaker fails to adhere to hearing procedures.

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**B. Registration**

Two registration tables will be placed at the entrance to the hearing room. One table will be for individuals to register to comment and the second table will be for those who have pre-registered to check in and confirm their time. Pre-registered and at-the-door speakers will be asked to present positive identification at the registration tables. This measure will safeguard the time slots reserved for pre-registered speakers and ensure that all speakers are properly identified for the record. Additional tables will be staffed and set up along the entry hall and will contain copies of the SEIS Fact Sheet, WIPP Information Packets, Waste Transportation information, and WIPP-SEIS mail list sign-up sheets.

**C. Equipment**

Each hearing location will be equipped with a slide projector, and screen for the DOE presentation. A portable computer and printer will be used to provide the hearing officer with the list of at-the-door registrants.

A light set visible to the speakers, will be used to indicate speaking time limits. The hearing officer will turn on the green light, indicating the speaker has approximately one minute left. A red light will be turned on when the speaker's allotted time is completed.

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The hearing officer, members of the DOE panel and the court reporter should have ice water and coffee at their disposal at all times.

**D. Security**

Security requirements for all six hearings will be coordinated by the DOE-AL Security Office in conjunction with state/city authorities.

**E. Personnel**

Support personnel from the DOE OIEA office as well as personnel from contractors' public affairs offices will be present at each hearing. Their responsibilities will include registration of speakers, distribution of WPP and SEIS information, equipment set up, logistical support, assisting the hearing officer and media liaison. Principal DOE-AL representatives will include Jim Bickel, Jack Tillman or Mike McFadden, Rich Marquez and John Arthur. Jim Bickel and John Arthur will be responsible for making the DOE presentation. DOE-HQ representatives will also be presented and have yet to be identified. There will be at least two (2) DOE representative on the panel at all times. It is suggested that a sufficient number of representatives plan to attend to allow each representative a number of breaks. The days will be long and tedious and it is unrealistic to expect any person to sit through

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what may be 12-16 hours of public testimony without substantial breaks.

**F. Travel**

Personnel from OIEA and the contractor public affairs offices will travel one or two days in advance to each of the hearing locations to allow adequate time for meeting set-up. These individuals will travel by commercial airlines. Members of the DOE panel, the presiding officer and the court reporter will need to be in each city the night prior to the public hearing.

**G. Public Service Announcements Display Ads, Media Briefings**

Display ads will be published in newspapers serving each hearing location. Public Service Announcements will be distributed to radio and TV stations serving each of the hearing locations.

Two days prior to a public hearing, personnel from OIEA and the contractor public affairs offices and a media coordinator will visit the city in which the hearing is located. Visits will be made to the local media and city officials and state officials (if applicable) to advise them of the hearing logistics, procedures, etc. A media briefing will be conducted in each of the hearing locations the afternoon before the public hearing. A DOE official who will be part of the DOE panel will participate. A brief presentation by the DOE official, discussing the SEIS and the

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hearings, will be followed by a question and answer session. On the day of the hearing, a DOE official will hold a press conference during the lunch break.

**K. Follow-up**

The mail list will be revised for distribution of the FSEIS.

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**WIPP Draft SEIS  
Public Hearings  
Rules for Conduct of Public Hearings**

**Opening Remarks**

1. The hearings will begin at 9 am and continue on through the day and into the evening. The Hearing Officer will open each hearing with preliminary remarks which include a summary of the NEPA process and statement of the guidelines for conduct of the hearing. He will also make other necessary announcements or changes throughout the hearing after consultation with representatives of the Department. The Hearing Officer will have his remarks prepared in writing and will use the same prepared statement at each hearing to ensure consistency.

**DOE Presentation**

2. Following the Hearing Officer's opening remarks, a DOE representative will make a brief presentation about the WIPP and the SEIS. This will be a DOE-AL WIPP project representative. The presentation will include an oral statement with potential use of 35 mm slides. Total time for the presentation will not exceed 15 minutes.

Comments from Congressionals and Elected Officials of States and Indian Tribes

3. Comments from congressionals and elected officials will be received at the beginning of the hearing at each location. These speakers must pre-register at least one week prior to the public hearing in order to be included in this portion of the hearing.\* These speakers will be given 10 minutes to present comments. Each speaker will have the opportunity to participate in the question and answer session which will immediately follow the comments from the special interest groups.

\* Congressionals and elected officials who inadvertently failed to pre-register will be accommodated and included into the appropriate session.

Comments from States and Indian Agencies

4. Comments from state agency representatives and Indian agency representatives will be received following the comments of the congressionals and elected officials at each hearing location. These speakers must pre-register at least one week prior to the public hearing in order to be included in this portion of the hearing. These speakers will be given 10 minutes to present comments. Each speaker will have the opportunity to

present comments. Each speaker will have the opportunity to participate in the question and answer session which will immediately follow the comments from the special interest groups.

Comments from Special Interest Groups

5. Comments from representatives of special interest groups will be received following the comments from the state and tribal agency representatives at each hearing location. These speakers must pre-register at least one week prior to the public hearing in order to be included in this portion of the hearing. These representatives will be given 10 minutes to present comments. At the end of their comment session, each speaker will have the opportunity to participate in the question and answer session which will immediately follow. Each interest group will be allowed to have one designated speaker per location and should specify to DOE who this individual is when pre-registering (or at least seven days in advance of the hearing date).

Question and Answer Session

6. This session will follow comments from special interest groups. Participants will include only those pre-registered speakers who are congressionals or elected officials, representatives of state or tribal agencies or the designated

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representatives of special interest groups. It will be moderated by the Hearing Officer and be conducted on the record. Questions will be limited in scope to questions of clarification regarding the SEIS document. This session will last one hour and participants will be allowed to ask one question plus a follow-up question. The Hearing Officer, after consultation with Department representatives, has the right to modify the question and answer session as necessary. The Hearing Officer will call on speakers in the same order in which they offered their comments.

Comments from the General Public

7. Comments from the general public will be received following the question and answer session. Each speaker will have five minutes to present his or her comments.\* Pre-registered speakers will comment first, followed by the at-the-door registrants.
- \* DOE reserves the right to adjust the length of the time each speaker will have in the general public comment session based on the number of speakers pre-registered and public turn-out.

Clarifying Questions

8. Following an individual's testimony, the DOE has the right to ask clarifying questions regarding the individual's testimony.

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These questions may be asked only after the individual has completed his or her testimony.

9. A deadline of seven (7) days prior to each hearing for pre-registration of speakers has been established for the purpose of preparing and distributing the lists of speakers. For the Atlanta, Georgia hearing, the deadline for pre-registration will be May 18, 1989. For the Pocatello, Idaho hearing, the deadline for pre-registration will be May 25, 1989. For the Denver, Colorado hearing, the deadline for pre-registration will be May 30, 1989. For the Pendleton, Oregon hearing, the deadline for pre-registration will be June 1, 1989. For the Albuquerque, New Mexico hearing, the deadline for pre-registration will be June 6, 1989. For the Santa Fe, New Mexico hearing, the deadline for pre-registration will be June 8, 1989. An individual will be allowed to comment at only one location as part of the pre-registered group. However, any individual may attend any hearing and register at the door to speak, as identified in #10 below. An individual will be allowed to comment only once at any hearing location. The names of persons calling to pre-register after the deadlines identified above will be placed on the same list that will be used for the at-the-door registrations. Therefore, people who call in after the deadline date do not need to register at the door; their names will already be on the at-the-door registrants list.

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10. Individuals who have not pre-registered at least 7 days before the date of the scheduled hearing, but who are present at a hearing and wish to speak, may register at the door and will be accommodated at that hearing to the extent time allows, after all pre-registered people have been given an opportunity to speak. The Hearing Officer will call the names of at-the-door registrants after he has gone through the complete list of pre-registered speakers.
11. The Hearing Officer will call the speakers to podiums located at the front of each hearing location. In an effort to alert speakers that their time for speaking is approaching, the Hearing Officer will periodically announce the names of the next several speakers and ask that they be seated in a reserved area close to the podiums to facilitate the process.
12. If a speaker is not present when called, his/her name will be passed and the next speaker will be asked to present his/her comments. The names of all pre-registered speakers who were not present when first called will be called again following each break in the hearing. If a speaker is still not present, his/her written statement may be presented for the record at the time of the hearing or at any other time throughout the remainder of the public comment period. He/she may also attend any of the other hearings and register at the door to speak.

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13. Combining of speaking times will not be permitted. Oral presentations supported by written materials, charts, or similar types of visual aids are permissible if the materials are (a) easily made a part of the official public record (i.e., rendered to written form), (b) necessary to understanding the speaker's comments, (c) presented in a nondisruptive fashion, and (d) within the speaker's total time allotment. A speaker must present his or her testimony in person. Each speaker presenting testimony must identify himself/herself. Anonymous testimony will not be entered into the record.
14. All speakers are encouraged to put their statements in writing for purposes of admission to the official public record of the hearings. Whether comments are made in writing and sent to the Department during the comment period or are orally presented at a public hearing, comments from the public receive the same weight and consideration. In the interest of fairness to all speakers, DOE urges all participants to cooperate in the economical use of time by making their comments as concise as possible. The deadline for submission of all comments to DOE is June 20, 1989. Comments may be submitted to:

Mr. W. John Arthur  
ATTN: SEIS Comments  
U.S. Department of Energy  
Albuquerque Operations Office  
P. O. Box 5400  
Albuquerque, New Mexico 87115

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Speaker Lists and Estimated Times

15. A list of all pre-registered speakers will be prepared in advance of each meeting date and will be available upon request to congressional offices and the media. The list for each hearing will be posted on the doors or just inside the door of each hearing location on the day of the hearing.
16. The speaker lists will be prepared by the WIPP SEIS Support Office. The lists will generally reflect the order in which individuals telephoned or mailed in their request to speak.
17. There is no guarantee that a particular speaker will speak at a particular time. DOE suggests that speakers arrive approximately 30 minutes before their scheduled speaking time in the event that they are called early to speak. Pre-registered and at-the-door speakers should be prepared to present positive identification at the registration tables. This measure will safeguard the time slots reserved for pre-registered speakers and ensure that all speakers are properly identified for the record. DOE also encourages all speakers to limit their remarks in the interest of time, and to assure as many people as possible are accommodated. This unpredictability in whether all speakers will be present, or whether all allotted times will be used, makes any guarantee of an exact time slot impossible. In any event, the time limitations will be strictly adhered to and enforced by the

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Hearing Officer. Accordingly, please arrive at least 30 minutes prior to your pre-assigned speaking time.





# Federal Register

Friday  
April 21, 1989

## Part VIII

### Department of Energy

Waste Isolation Pilot Plant: Availability of Draft Supplement to the Final Environmental Impact Statement; Notice

18350

Federal Register / Vol. 14, No. 78 / Friday, April 21, 1989 / Notices

#### DEPARTMENT OF ENERGY

Waste Isolation Pilot Plant: Availability of Draft Supplement to the Final Environmental Impact Statement  
Agency: U.S. Department of Energy,  
Acting Director, Office of Environmental Policy and Assessment, Washington, DC 20585, Telephone (202) 546-4800.

**SUMMARY:** The Department of Energy (DOE) announces the availability of a Draft Supplement to the Final EIS (DOE/NE-001) for the Waste Isolation Pilot Plant (WIPP). The Draft Supplement (DS) is described in the following:

- 1. Present information, data, and analyses that have become available since the 1980 Final EIS (FES);
- 2. A description of the changes in the action described in the Record of Decision (ROD) (49 FR 8182) of January 28, 1984; and
- 3. Further the purposes of the National Environmental Policy Act (NEPA), which includes providing an opportunity for public review of information bearing on environmental impacts.

DOE invites written and oral comments on the Draft Supplement and interested parties may wish to attend public hearings on the Draft Supplement. Public hearings will be held in New Mexico, where the WIPP has been constructed, and at several locations throughout the United States.

**DATES:** Written comments should be postmarked by June 30, 1989, to ensure consideration in preparation of the Final EIS. Written and oral comments will be accepted at public hearings (schedule given below). Persons who wish to make comments should notify DOE's WIPP EIS Project Office at least 14 days before the hearing is held on the list of commenters.

**ADDRESSES:** Requests for copies of the FES and Draft EIS, requests to present oral comments at the public hearings, and requests for additional information concerning the Draft EIS should be directed to: W. John Arden, III, Project Manager, WIPP EIS Project Office, U.S. Department of Energy, 608 Baker Building, Room 1000, Washington, DC 20585.

Comments on the Draft EIS should also be sent to the address, adding "Attention: EIS Comments," if possible, to permit oral comments at the public hearings. Copies of the FES and the Draft EIS can be made at least a day at (202) 546-4800 or (202) 546-3800.

Please leave your name, address, date, time, phone number, and the nature of your comments.

For general information on the procedures DOE follows in complying with the requirements of NEPA, contact: NEPA Inquiries, Director, Office of Environmental Policy and Assessment, U.S. Department of Energy, 608 Baker Building, Washington, DC 20585, Telephone (202) 546-4800.

**I. Background**  
The DOE is developing the WIPP near Carlsbad in southeastern New Mexico as a deep geologic repository for transuranic (TRU) defense waste from various DOE defense program facilities. The repository has been constructed from a bedded salt formation known as the Permian Salina. The WIPP facility is under the jurisdiction of the U.S. Department of Energy and managed by the U.S. Department of Energy's Office of Environmental Management (OEM).

The DOE has submitted to the BLM an application for withdrawal of the WIPP lands from the public domain. The DOE has also submitted to the BLM an application for withdrawal of the WIPP lands from the public domain. The DOE is currently reviewing the application for withdrawal of the WIPP lands from the public domain.

**II. Supplemental Preparation**  
On October 19, 1988, the DOE announced the availability of the Draft Supplement to the Final EIS (DOE/NE-001) for the WIPP FES to reflect proposed changes in the project, and new information.

Comments on the Draft EIS should also be sent to the address, adding "Attention: EIS Comments," if possible, to permit oral comments at the public hearings. Copies of the FES and the Draft EIS can be made at least a day at (202) 546-4800 or (202) 546-3800.

**Changes in the sources of TRU waste:** In the 1980 FES, only TRU waste from the Idaho National Engineering and Experiment Station (INEL) was analyzed for and listed in the WIPP. Since then, the DOE has proposed that TRU waste from two other defense facilities, Hanford and Savannah River, be sent to the WIPP. The potential impacts of transport to WIPP, and emplacement of waste from six additional facilities, are also analyzed in the DS.

**Changes in the composition of TRU waste inventory:** The DOE estimates a smaller volume of TRU waste because of a method change in inventory sampling. A change in the definition of "defense waste" changes the WIPP waste inventory. Changes to the WIPP waste inventory are also analyzed in the DS.

**Changes in the composition of the TRU waste inventory:** The DOE estimates a smaller volume of TRU waste because of a method change in inventory sampling. A change in the definition of "defense waste" changes the WIPP waste inventory. Changes to the WIPP waste inventory are also analyzed in the DS.

**Changes in transportation modes:** In the FES, DOE anticipated using a mixed transport mode (TRU train and SES truck). The DOE has now proposed to use only TRU train and "military" trucks for TRU waste transport from eight facilities and because they lack rail heads, truck transport from Los Alamos National Laboratory and Nevada Test Site. The change in the "military" trucks TRU waste packaging has changed from the Type A (TRUPACT-1) container proposed in 1980, to the Type B container proposed in the DS.

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**A SUMMARY OF PUBLIC AFFAIRS ACTIVITIES TO DATE  
SUPPLEMENT TO THE ENVIRONMENTAL IMPACT STATEMENT  
WASTE ISOLATION PILOT PLANT**

May 25, 1989

In October 1980, the U. S. Department of Energy (DOE) published the Final Environmental Impact Statement on the Waste Isolation Pilot Project (WIPP). The Record of Decision (ROD) was published in January 1981. In the intervening years, new information and analyses became available and were published in the Draft Supplement to the Environmental Impact Statement (SEIS) in April 1989. DOE, in compliance with provisions of the National Environmental Policy Act, has provided the public with the opportunity to review and comment upon this SEIS.

At the initiation of the SEIS, DOE published a Notice of Preparation in the Federal Register on February 17, 1989. During the development of the SEIS, DOE conducted SEIS briefing sessions for congressional representatives from five states, officials from nineteen state governments and two federal agencies, two groups of Indian government representatives, and 10 special interest groups.

When DOE completed the draft SEIS, a Notice of Availability was published in the Federal Register on April 21, 1989. In addition, DOE wrote and distributed to over two thousand people a Fact Sheet on the SEIS and has sent fifteen hundred two-volume copies of the SEIS with the companion FEIS to interested persons upon request. DOE has also provided a toll-free number by which DOE publications may be requested.

DOE has also scheduled opportunities for oral comment by the public at six public hearings on the SEIS. DOE has informed the general public of the dates and locations of these hearings through the Federal Register Notice of Availability, through display advertisements in local newspapers, and through public service announcements for numerous local radio stations. The toll-free number may also be used by members of the public wishing to pre-register to speak at the public hearings. DOE has provided regular updates on SEIS milestones through press releases that were mailed to the 2,000 persons on the mailing list, including media.

Prepared for the Public Hearing in Atlanta, Georgia  
Held May 25, 1989, at the Airport Hilton Hotel

**SUMMARY**

**INTERGOVERNMENTAL AFFAIRS AND PUBLIC INFORMATION ACTIVITIES  
SUPPLEMENT TO THE ENVIRONMENTAL IMPACT STATEMENT**

**WASTE ISOLATION PILOT PLANT**

**U.S. DEPARTMENT OF ENERGY**

**FEDERAL REGISTER NOTICES**

Notice of Preparation	February 17, 1989
Notice of Availability	April 21, 1989
Addition of Pocatello Public Hearing and Extension of Comment Period	April 28, 1989
Addition of Arisala & Odessa Hearings	June 12, 1989
Addition of Ogden Hearing	June 26, 1989
Change of Ogden Hearing Date	July 6, 1989
Extension of Public Comment Period	July 11, 1989

**PRESS RELEASES**

Western Governors' Association Meeting	January 27, 1989
Notice of Preparation	February 17, 1989
Notice of Availability	April 21, 1989
Addition of Pocatello Hearing	April 28, 1989
Background on Roy Eiguren	May 24, 1989
Addition of Arisala Hearing	June 12, 1989
Addition of Odessa Hearing	June 12, 1989
Addition of Ogden Hearing	June 19, 1989

**BRIEFINGS**

**Congressional:**

Idaho	February 2, 1989
Colorado	February 9, 1989
Wyoming	February 9, 1989
Utah	February 16, 1989
New Mexico	April 11-12, 1989

**Other Federal Government Agencies:**

Bureau of Land Management	February 3, 1989
Environmental Protection Agency	February 16, 1989

State Government

Idaho February 2, 1989  
 New Mexico February 3, April 19, 1989  
 Oregon February 8, 1989  
 Washington February 8, 1989  
 Kentucky February 9, 1989  
 Arkansas February 9, 1989  
 Colorado February 10, 1989  
 Utah February 15, 1989  
 Texas\* February 17, 1989  
 South Carolina\* February 17, 1989  
 Mississippi\* February 17, 1989  
 Louisiana\* February 17, 1989  
 Illinois\* February 17, 1989  
 Ohio\* February 17, 1989  
 Oklahoma\* February 17, 1989  
 Alabama\* February 17, 1989  
 Indiana\* February 17, 1989  
 California April 13, 1989  
 Arizona April 13, 1989  
 Nevada April 13, 1989

Local Government

Abuquerque May 15, 1989  
 Santa Fe May 17, 1989  
 Carlsbad May 18, 1989

Native Americans

Council of Energy Resource Tribes (CERT) March 6, 1989  
 National Council of American Indians (NCAI) March 7, 1989

Special Interest/Oversight Groups

Western Governors' Association January 30, 1989  
 Environmental Evaluation Group February 3, 1989  
 Sierra Club March 16, 1989  
 Concerned Citizens for Nuclear Safety March 16, 1989

Representatives of these states were briefed at the same time at a meeting of the Southern States Energy Board.

Environmental Defense Fund March 17, 1989  
 League of Women Voters March 23, 1989  
 Snake River Alliance March 30, 1989  
 Leadership - Santa Fe April 20, 1989  
 Americans for National Energy Alternatives May 15, 1989  
 Carlsbad Chamber of Commerce May 18, 1989

CONVERSATIONS

Committee to Make WIPP Safe beginning March 10, 1989  
 Southwest Research beginning March 10, 1989  
 Citizens for Alternatives to Radioactive Dumping beginning March 10, 1989  
 Concerned Citizens for Nuclear Safety beginning March 10, 1989  
 Environmental Defense Fund beginning March 17, 1989  
 Snake River Alliance beginning March 21, 1989

MEDIA INTERVIEWS

Abuquerque CBS affiliate April 14, 1989  
 Abuquerque Journal April 14, 1989, May 15, 1989  
 Santa Fe New Mexican April 14, 1989  
 Denver Post May 3, 1989  
 Rocky Mountain News May 3, 1989  
 Boulder Camera May 3, 1989  
 Idaho Statesman May 4, 1989  
 Boise AP affiliate May 4, 1989  
 Atlanta Constitution May 18, 1989  
 Boise, National Public Radio May 30, 1989  
 Abuquerque ABC affiliate June 13, 1989

PUBLIC HEARING ANNOUNCEMENTS

Atlanta Herald  
 Advertisements placed in:  
 Atlanta Journal Constitution  
 Albany (GA) Herald  
 Augusta Chronicle Herald  
 Macon Telegraph and News  
 Savannah News Press  
 Greenville (SC) News Piedmont

Greenville (SC) News Piedmont  
 Charleston Standard  
 Allen Standard  
 Columbia (SC) State  
 Nashville Banner and Tennessee  
 Chattanooga News/Times  
 Knoxville News Sentinel/Journal  
 Oak Ridge (TN)  
 Cincinnati Enquirer  
 Cincinnati Journal News  
 Dayton Springfield News and News Sun

Public Service Announcements sent to:

Atlanta - WAPW, WFOX, WDCI, WAGO, WYAY, WABE  
 Albany (GA) - WAUR, WJAD  
 Augusta - WBBQ, WRDR  
 Miami - WAT5  
 Savannah - WAEX, WJCL, WCHY  
 Allen (SC) - WRDR  
 Columbia - WCOB, WSCQ  
 Nashville - WGFY, WLAC  
 Chattanooga - WGOW, WSKZ, WUSY  
 Knoxville - WTVR  
 Oak Ridge - WOCG  
 Cincinnati - WOFX  
 Dayton - WTUE, WHHO

Evansville Headline

Advertisements placed in:

Sell Lake Tribune  
 Twin Falls Times/News  
 Logan Herald Journal (UT)  
 Idaho Falls Post Register (ID)  
 Idaho Statesman (ID)  
 Idaho State Journal (ID)  
 Lewiston Tribune/Moscow Idahoan (ID)

Public Service Announcements sent to:

Sell Lake City - KAI, KSOP, KSL  
 Twin Falls - KJLK, KEZJ  
 Salmon - KPSA  
 Pocatello - KPKY, KZBO, KWIK, KSEL, KPCC  
 Boise - KCOI, KDOO/TLB, KIZN, KBBO

Lewiston - KATW, KMOK  
 Idaho Falls - KJCE, KTEE, KUPI

Denver Headline

Advertisements placed in:

Grand Junction Sentinel  
 Denver Rocky Mountain News  
 Denver Westword  
 Denver Post  
 Colorado Springs Gazette-Telegraph  
 Ft. Collins Coloradan  
 Boulder Daily Camera  
 Pueblo Chieftain  
 Greeley Tribune  
 Trinidad (CO) Chronicle-News  
 Laramie Boomerang (WY)  
 Rock Springs (WY) Rockies-Miner  
 Casper (WY) Star-Tribune  
 Eagle State Tribune (WY)

Public Service Announcements sent to:

Walsenburg (CO) - KSPK, KFLJ  
 Boulder - KBCC  
 Denver - KTVB, KSTY, KHOW, KEZW, KOSI, KCRF, KOA  
 Colorado Springs, CO - KKCS, KVOR, KSPZ  
 Fort Collins - KCOI, KTCL  
 Grand Junction - KEJB, KJEE  
 Greeley - KEKA  
 Pueblo - KCSL, KQMG  
 Trinidad (CO) - KCRF  
 Casper - KDLT, KVOC, KFBO, KSHY

Portland Headline

Advertisements placed in:

Baker (OR) Democrat-Herald  
 Portland Oregonian  
 La Grande Observer  
 Ontario (OR) Argus Observer  
 Pendleton East Oregonian  
 Dallas (OR) Chronicle  
 Spokane (WA) Spokesman-Review Chronicle  
 Spokane Tri-City Herald

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Public Service Announcements sent to:

Portland - KWJLJ, KEX, KGON, KSGO, KGW, KVRZ, KINK  
Albany (OR) - KPPE, KWIL  
Pendleton - KTX, KWJLJ, KEX, KGON, KSGO, KGW, KVRZ, KINK  
Beaverton - KICW  
Salem - KBZY, KSLM

Abuquerque/Santa Fe Hearings

Advertisements placed in:

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Odessa Hearing

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 2000 interested parties  
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SEIS Fact Sheet to:  
 2000 interested parties

Establishment of Toll-Free Telephone Number

Holding of Press Conferences

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Procastello	May 31 & June 1, 1989
Denver	June 5 & 6, 1989
Pasco	June 7, 1989
Pendleton	June 6, 1989
Albuquerque	June 12 & 13, 1989
Santa Fe	June 14 & 15, 1989
Artesia	June 21, 1989
Midland	June 21, 1989
Abilene	June 21, 1989
Longview	June 22, 1989
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Georgia Institute of Tech.  
 May 18, 1989  
 North Carolina Power & Light  
 May 19, 1989  
 Golden Kwanza of Procastello  
 May 24, 1989

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 June 19, 1989  
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 June 19, 1989  
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 June 21, 1989

## WASTE ISOLATION PILOT PLANT SEIS TESTIMONY

Jill G. Paukert  
 Assistant Director, Technical Programs  
 Southern States Energy Board

May 25, 1988  
 Atlanta, Georgia

I am Jill Paukert and am here today as a representative of the Southern States Energy Board (SSEB). SSEB is a non-profit interstate compact organization that serves sixteen states and the Commonwealth of Puerto Rico with technical support and information services in energy and environmental matters. Founded in 1961, the Board was established to provide a regional framework for cooperative effort among the member states in issues of mutual concern. As an instrument for implementing this policy, SSEB delivers assistance and guidance in a wide range of topics in the areas of energy and the environment.

Among the many areas addressed by SSEB and the region over the last several years is radioactive waste management. The Board has assisted the U.S. Department of Energy in its work with the southern states in low-level, high-level and transuranic waste management and currently maintains a high-level radioactive waste transportation advisory committee that comprises a governor's designee from each state and an Indian tribe representative.

SSEB brings the committee together twice a year to consider current high-level waste program activities and to give the states an opportunity to discuss issues of concern with DOE representatives. We have found that these meetings are an effective and efficient forum for needed state and federal interaction on topics such as shipment route designation, emergency preparedness and response, transportation safety standards and procedures and information availability and management.

While the civilian high-level waste program and the transuranic waste program are managed separately and deal with different waste streams, SSEB and the high-level radioactive waste transportation advisory committee are well-aware of the similarities of the two programs. That is, we recognize that much can and will be learned from the Waste Isolation Pilot Plant experience for application to the process of developing a commercial spent fuel and high-level waste repository and the associated institutional framework. In fact, SSEB and the advisory committee visited the WIPP facility less than a year ago to see first hand the progress that has been made in the transuranic waste program's effort to date.

Although there is regional, if not national, consensus on the implications of the WIPP facility development process to the civilian repository program, there are a wide range of perspectives on the transuranic waste program within the region. The SSEB region contains two states in which transuranic waste is generated and stored, seven additional states through which the waste will be shipped if the WIPP facility becomes operational and one state whose border is within fifty miles of the WIPP facility. Hence, in presenting this testimony we are not speaking on behalf of the states but, rather, as an informed observer of DOE's efforts in the region with regard to the WIPP project.

Accordingly, SSEB's purpose in testifying today is to make some general recommendations with respect to the institutional aspects of the WIPP program:

1) Over the last two years, SSEB has witnessed a significant increase in the WIPP program's direct work with the southern states, and personnel have been available for information presentations and various types of assistance virtually upon request. We encourage the U.S. Department of Energy through the WIPP project office, to continue its work with state and local governments on an individual and regional basis as a means of involving the public in all aspects of the program.

2) In light of the potential precedents set by the WIPP program, with respect to the future development of a deep geologic repository for waste storage or disposal, and because of the lessons to be learned from the process, SSEB recommends that the U.S. Department of Energy coordinate the activities of its civilian and defense programs to the extent practicable.

3) SSEB is not in a position to evaluate the proposed action and alternative action described in the Supplemental Environmental Impact Statement. We do, however, recommend that the U.S. Department of Energy choose one of the two as its course and, in doing so, continue to expand its analytical work on the constructed facility and its ability to fulfill the technical requirements for long-term waste isolation. It is SSEB's opinion at this time that selection of the no action alternative, without adequate technical data to support a determination that the facility would be unsafe to workers, the public or the environment, would severely set back the nation's pursuit of solutions to radioactive waste storage and disposal issues.

Several federal and state organizations have recently focused on the need for an assessment of the nation's energy future in which resources and usage are integrated and balanced to provide long-term energy security. Among the groups that have developed national energy policy plans are the National Governors' Association, the Council of State Governments and the South/West Energy Council. The U.S. Department of Energy is currently developing national energy policy recommendations for President Bush to submit to Congress.

Such efforts to evaluate and plan for our energy future are gaining momentum in the states. SSEB encourages DOE to consider a similar integrated and comprehensive approach to addressing the challenges it faces in its waste management programs.

We appreciate the opportunity to offer testimony in this public forum. SSEB will continue to monitor the activities of DOE, the states and private industry in this important area so to serve our region in the advancement of effective policies as they relate to this issue.



# SANE/FREEZE

(A member of the Committee for a SANE Nuclear Policy and the Nuclear Weapons Freeze Campaign)

Southern Regional Office  
92 Piedmont Ave.  
Atlanta, GA 30303  
(404) 584-9902

May 25, 1989

## BRIEF COMMENTS ON MIPP AND TRANSPORTATION THROUGH ATLANTA

My name is Ellen Spears. I serve as director of the Southern Regional Office of SANE/FREEZE. I appreciate the opportunity to comment on the draft SEIS on behalf of the 170,000 or more SANE/FREEZE members around the country, and today, especially on behalf of the several hundred of us in the Atlanta metro area.

The MIPP project should not go forward because the wastes are not safe to transport, not through Atlanta, not anywhere in the country. These wastes are not safe to store at MIPP. Wastes must be dealt with on-site at nuclear weapons production facilities and we must not continue to produce the deadly weapons that are not needed.

Savannah River Plant wastes are not safe to transport. The 8.3 deaths and 106 injuries trucking wastes to MIPP (pp. S-15, S-38) are deemed acceptable risk by the draft Supplemental Environmental Impact Statement (SEIS). But this is not an "acceptable risk" driving through our communities, whether on I-20 or I-285 or some less populated area in Georgia. And why risk trucking these dangerous transuranic wastes to a site that itself could create another deadly burial ground?

The Waste Isolation Pilot Plant (WIPP) has not proven to be a safe storage area. The aquifer and brine reservoir above and below MIPP might become contaminated with nuclear or other hazardous wastes. The report admits that radioactive releases at WIPP would exceed the EPA standard, yet DOE wants to proceed with the project before standards are met. In fact, using the limited scientific and technical resources which the nation is currently putting towards clean-up of these facilities to ship this waste (and possibly have to haul it out of there later) may delay the expertise and money needed to deal with existing wastes on-site. The wastes that will be transported under WIPP are wastes already contained; WIPP will not deal with the more serious and immediate problem of wastes dumped in cardboard boxes bulldozed underground.

MIPP does not get to the root of the problem, that we must stop producing these wastes while we lack the technical means to render them harmless to our population. We do not need the weapons that are produced at Savannah River or at the other weapons facilities around the country. Just this week, further developments in the NATO alliance as we approach NATO's 40th birthday, additional Soviet arms reductions, and conventional reductions, should focus our attention on Jack Geiger. The SEIS must begin to explore this alternative. Yes, the existing wastes must be dealt with, but not in a way that leads to almost certain problems, whether they are on Atlanta highways or the caverns of New Mexico.

happened in other places.

MM: It just continues to eat on my brain here Bill as we talk that low-level nuclear waste and it makes no difference to me, you know, I'm a lay person. I don't understand all this, but I do know what the term radioactive means. And the fact that low-level nuclear waste was stored in cardboard boxes and dumped into trenches blows me away. What about deep geological storage?

WL: Deep geologic storage is the next planned generation storage, and it's for the nation's most contaminated waste, the high-level waste. And also the spent... <plutonium>> Yes, plutonium waste. Also spent nuclear fuel rods that come out of commercial reactors. They're supposed to be stored two to three thousand feet below the surface of the earth in a geologic storage facility. And, the alarming thing is that the nation's ASIS scientists and engineers today feel like this particular process, this plan for storage is pretty well in hand. There are no scientific or engineering problems left to be solved.

MM: Do you agree with that?

WL: No, I don't. They feel like the issues are entirely political and that those people who raise issues about it are only after political gain. And I disagree with that very sharply. These underground storage facilities are supposed to operate for thousands of years, at least ten thousand years.

And it's hard to predict how well they will perform. What we can do is look at what's happened these last thirty years with all DOE facilities around the country.

MM: And the record is not very good.

WL: The record is very poor. At Oak Ridge the two and half

million pounds of mercury that have been dumped into the environment. At Hanford high-level waste tanks that have been collapsing and they can't get the waste out of them. At the Savannah River Plant the Tualoosa aquifer is contaminated. At Rocky flats we had a plutonium fire facility, a facility that burned up. At Fernald Ohio the city drinking water has been contaminated. And on and on. At every facility in the Department of Energy there, there isn't one facility that could operate one day under commercial or industrial regulations. *Cammy*

MM: You know, as we sit here and talk I can't help it, I just find myself just getting real angry about this, real angry. Again, I'd like to go back to the idea, well first of all why are you out talking about this?

WL: The problems were overwhelming, and I could not *CAMMY* do my job as I was working there. As I have found out, a citizen that knows a fair amount about what's going on can do a great deal. *Cammy*

Hart in Columbia South Carolina has done an incredible amount of good working *Will JJ 8057?* to change environmental regulations and laws and see that the law is followed at the Savannah River Plant. Gary Davis in Tennessee, another citizen, has filed suit and won suit against the Department of Energy and has brought the DOE under RICA, or hazardous waste compliance laws. And so I have found, unfortunately an engineer can do a lot more knowing what's going on and working from the outside than he can working on the inside and I think that's unfortunate.

MM: Yeah, I hear that and I think it's unfortunate, too. A quick call, Rick? You're on WCHN, go ahead please.

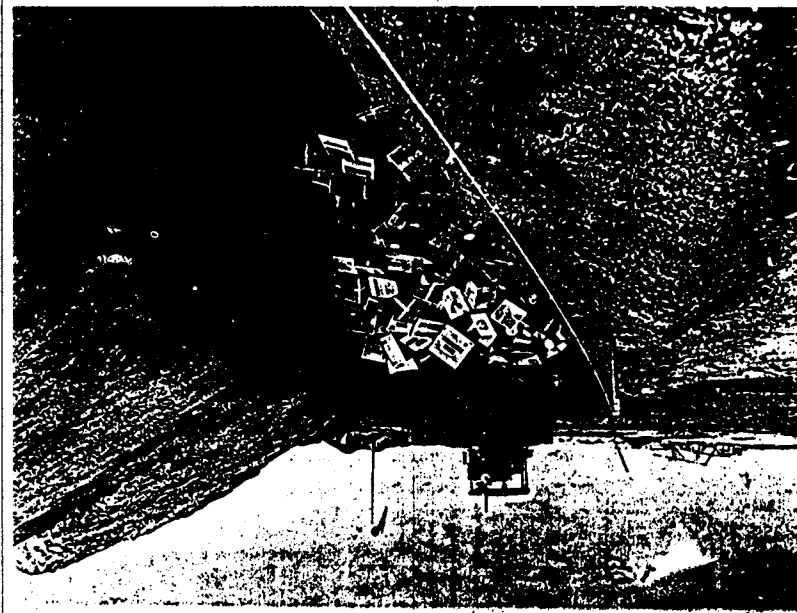
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9.2

what does all this say about how DOE would trans. nuke weapon waste.

3.2-1

since the securing of film in Col. F.  
 approached by SRP workers  
 how many more revelations  
 will be forthcoming in the  
 next few years I  
~~hope~~ hope that BT  
 has helps ~~over~~ encourage  
 this process as it  
 already has









we can't talk about cheap nuke weapons until we raise the funding questions about the weapons themselves  
Why are so many nuke weapons cent. to be  
prec. — means ~~and~~ to track thru  
Att. for many years?

It's the contin. manuf of nuke weap. rel. to the need to maintain U.S. military & econ. dom. in the rest of the world?

Do we have to confine ourselves to the narrow, limited view that because 50 had them ~~there~~ America had to?

3.2-1  
9-2

3.6-1

STATEMENT

To the DOE Hearing Panel on the Draft Supplement to the Environmental Impact Statement on the Waste Isolation Pilot Plant held in Atlanta, GA, May 25, 1989.

by Geoffrey G. Elchholz, Atlanta

My name is Geoffrey G. Elchholz. I am Regents' Professor Emeritus of Nuclear Engineering and Health Physics at the Georgia Institute of Technology, where I have been for the past 26 years. I have conducted research in the area of waste migration and waste management, I have published a book on the Environmental Impact of Nuclear Power, and taught graduate courses on these subjects. I am testifying here as a private individual.

I want to speak in support of the proposed action. The WIPP site is a badly needed facility, which has been developed at enormous cost to the taxpayer and I feel strongly that it should be utilized to the fullest extent. The need to provide an ultimate disposal facility for defense waste and other waste generated at Government facilities is real and urgent and will be further exacerbated as pressure mounts to decommission and decontaminate additional DOE and weapons-related facilities. I believe that any action to delay or hinder the full operation of the WIPP plant may result in unnecessary potential health risks at those other sites and further burden the taxpayer with substantial and unnecessary additional costs, which we cannot afford at a time of stringent budget cut backs.

The additional data collected since the publication of the FEIS have underlined the inherent safety of the WIPP site. Most of the proposed actions result from a

reassessment of the nature and composition of waste sources, a greater emphasis on TRU sources and a recognition of the need to provide a disposal capability for "greater than Class C Waste". A great deal of work has been done on brine migration in salt, but since the principal migration barrier lies in the low permeability of the Salado Formation, I believe such water movement is only of academic interest. By including a 5-year test phase, a prudent approach is taken that permits a change in direction in case of unexpected developments. However, if things go as expected, there seems to me no reason why the site should not be utilized to its full capacity. It may be decades, before the political leadership and available funding may be in place again to allow development of another such facility.

1-1

For all the reasons given in the Draft Supplement, I consider the No Action Alternative unacceptable. It would increase the hazard to the public to keep hazardous waste in temporary storage and it would constitute an unwarranted waste of public funds.

Regarding the specific Proposed Action, I am concerned that the proposed Test Work e.g. on transportation, not be considered on the critical pathway to operation of the facility. Performance Assessment obviously consists in observing operations that should be as representative of the planned mode for routine emplacement as possible. High priority should be given to radiation safety and industrial operational safety of all plant personnel. Since integrity of the roof in active drifts is a critical factor, mine safety procedures need to have high priority and the number of open tunnels at any time should be kept to a minimum.

5.1.1-1

Regarding the change in the TRU waste sources and composition, no new problem areas seem to arise and it seems logical to remove them to the WIPP site as soon as possible. No adverse impact is apparent from a change in packaging or a change in transportation mode. I do not feel that public perception of the safety of rail transport is any higher than for Interstate truck transport. In any case, the use of DOT-approved carrier packs should alleviate any concerns in this regard.

7.3.1.1-19

The higher heat content in the new canisters may increase local brine flow somewhat, but also promote plastic flow of the surrounding salt, and may be a positive factor in the long run. None of the organic solvents have anywhere to go in the absence of water and volatile gas flow will be minimized by backfilling.

7.7.3-1  
7.8.5-2

Although retrievability is mandated, I consider it an unnecessary and costly feature of the disposal process. At some point, it will be important for the Department of Energy, the State of New Mexico and the contractor to exercise good engineering judgement in deciding whether or not to proceed with full utilization of the site. I hope that day will not be allowed to be delayed unduly.

7.12.6-1

3.4-1





Coordinator: Mark Yates  
 Advisory Board:  
 Joe Sawyer—Vice President,  
 Council on Environmental Quality  
 Atlanta  
 Elizabeth Ertler—Executive Director,  
 American Friends Service Committee,  
 Southern Regional Office  
 Greenville, South Carolina  
 American Civil Liberties Union  
 of Georgia  
 John Lunde—U.S. Congressman  
 Representing Georgia's 10th District—  
 Chairman, Leadership Council  
 on Education Reform

**PUBLIC HEARINGS STATEMENT ON THE WASTE ISOLATION  
 PILOT PLANT AND PROPOSED WASTE TRANSPORTATION.**

**BY MARK YATES, COORDINATOR,  
 ATLANTA NUCLEAR FREEZE/JOBS WITH PEACE CAMPAIGN**

MAY 25, 1989

May 25, 1989

Hello, my name is Mark Yates. I am speaking today on behalf of Atlanta Nuclear Freeze/Jobs with Peace, and the 400 members in the Atlanta area. I appreciate the opportunity to comment on the Supplemental Environmental Impact Statement on the Waste Isolation Pilot Plant (WIPP) in New Mexico and the planned truck routes through the Atlanta metro area.

First, I want to express concern at the lack of effective public notice to metro Atlanta residents on this important issue. When you spend our tax dollars to come to our fine city, we want to be sure that the public knows about it. The secrecy with which the DOE has operated, without congressional and public oversight must end, and that process should have started with these hearings.

We are aware that nuclear shipments already go through on Atlanta highways. What makes WIPP transportation different is the frequency and regularity of the trips, and the wastes from the Savannah River Plant are among the most radioactive of the shipments to travel WIPP routes. But most important, it is not necessary for these wastes to be shipped. We should be using our limited economic resources to explore the much more serious problem of dealing with the uncontained wastes on-site at the Savannah River Plant.

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5.2-2

92 Piedmont Ave. NE, Atlanta, GA 30303 523-5235

According to the DOE, as of 1981, there were 34,000 cubic meters of transuranic wastes in storage at the Savannah River Plant. The trucks will be coming through Atlanta for some time to come. And, while I do concede that under the highest possible safety standards the possibility of a catastrophe at any one moment in time is unlikely, it is also true that as time goes by and more and more trucks come through the Atlanta area the odds of a life-threatening accident increase dramatically. In addition, as more and more weapons-grade plutonium is produced at the Savannah River Plant we Georgians are being asked to accept this risk as a permanent situation.

We have a solution for that. Do not generate more wastes. We Americans do not need more nuclear weapons, we already have over 25,000 weapons, most of which contain explosive potential many times that of the Hiroshima bomb that killed 100,000 people. When is enough enough? A favorable arms reduction atmosphere exists in the world today. Let's stop producing weapons and their wastes, and put the money into cleaning up our global environment, the Savannah River Plant and other DOE sites, and improving the quality of life for Georgians and all of our citizens. To do less would be an acceptance of the darkest form of cynicism.

7.35:1-8  
7.36:1-2

36-1  
52-1  
522  
92

HENRY S. KAEN, M.D.  
947 Blue Ridge Avenue  
Atlanta, GA 30306  
  
(404) 872-0186

TESTIMONY PREPARED FOR D.O.E. PUBLIC HEARING REGARDING THE WASTE ISOLATION PILOT PLANT (WIPP): Atlanta, GA May 22, 1989

I am a medical doctor. Along with my colleagues in the Dekalb Grady Clinic, I practice general internal medicine in a very poor neighborhood in S.E. Atlanta. I also do research in preventive medicine, teach community health at the Emory University School of Medicine, and I'm a member of Physicians for Social Responsibility.

The neighborhood clinic where I work is located in between the tracks of the old Georgia Railroad (that's now the CSX Rail Corporation) with trains straight from Aiken, SC) and superhighway I-20 (that's also the direct route from Aiken, SC, to the West). We're less than 4 blocks from either of these main transport routes that might be carrying high-level radioactive wastes out to New Mexico from the Savannah River Plant (SRP).

There are no rich people living anywhere near our neighborhood clinic. There are lots of poor folks struggling to survive--lots of children, lots of disadvantaged single mothers. If they're lucky, their sons will someday get a job related to fueling trucks or maintaining the railroad right of way.

Perhaps your proposal to transport heavy drums of transuranic wastes through our neighborhood will help sell more diesel fuel at local truck stops, break down the highway pavement a bit more quickly, or hasten the loosening of old railroad ties. Politicians with a short-term view may tell us that this will be good for the economy. It might provide a few jobs.

But I want to say something about the long-term view. I want us to think about what are the health consequences of nuclear weapons production and the radioactive wastes that result from making nuclear bombs.

I know very well that the continued production of nuclear weapons is linked to the decline of medical care in this country. Through its effect on the federal budget, nuclear weapons production has contributed to reductions in Medicaid funding and the cuts in Medicare for the elderly. It has held back health investment in the public-sector so that our corridors at Grady Hospital are today overflowing with very sick poor and working

Henry S. Kahn, M.D. -- 5/25/89 -- P. 2

people for whom a hospital bed cannot be found. Preventive services--immunizations, for example--are on the decline. And every day our clinic sees a sample of the growing number of Americans who have no insurance for medical care. There are 37 million Americans currently in this situation.

The money for nuclear weapons--products with no conceivable health benefit--could certainly be better spent to support the health of our citizens. Dollars spent on health care would ultimately make us more secure as a nation than dollars spent on building up the waste building of nuclear weapons--even if they are never used in warfare. Building up the waste building services. A physician friend has called this "attack on human without detonation." This dangerous, although indirect, health hazard associated with nuclear weaponry--the economic drain--is something I know from my daily experience.

What I don't know for sure is whether there are any direct hazards to human health associated with the production of nuclear bombs. Last month I tried to find out about this subject by attending a symposium on Nuclear Waste sponsored by the League of Women Voters. D.O.E. supported this meeting. I had a chance there to hear Dan McIntosh, Ph.D., the Program Manager for Defense Waste Technology at Savannah River Laboratory. Dr. McIntosh works for Westinghouse now, but before that he was 12 years at the SRP working for DuPont.

To hear him tell it, the SRP was a great place to raise kids. Their Environmental Restoration Program has been characterized almost 100 disposal pits, seepage basins and other sites at the SRP where waste has been deposited. Dr. McIntosh says that none of them is a cause for worry.

Frankly, I don't believe he can know that. Before I could make a statement about the safety of humans in the vicinity of all that nuclear waste, I would want to know the subjects' radiation doses in great detail over a long time period. This information regarding SRP workers has not been made available to independent public-health or scientific reviewers. The data may not even exist.

Dr. McIntosh responded to concerns about the health of SRP workers by simply insisting that the rates of lost workdays due to injury at SRP were no lower than the rates for all industries in general. In his telling, the SRP workers don't often fall off ladders? --that they don't drop heavy tools? Surely anyone concerned about the hazards of radiation exposure knows that the adverse health outcomes are usually expressed as cases of cancer. These personal tragedies, often fatal, usually develop several decades after the radiation exposure has occurred. And if there is genetic damage from the

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9-3

Henry S. Kahn, M.D. -- 5/25/89 -- P. 3

radiation, it may not be expressed until reproductive failures or defective babies occur several generations later.

As a clinician and public-health worker, I don't feel at all reassured. Dr. McIntosh said--and I believe your Supplemental Environmental Impact Statement says--that the radiological impact of waste storage at SRP is acceptable. For the D.O.E. and DuPont have insisted that health hazards at the SRP are minimal. If all that is true, then why is D.O.E. so eager to begin trucking radioactive wastes from SRP through my neighborhood? What would be wrong with leaving the waste there at the SRP?

Let me speak directly to the details of your Supplemental Environmental Impact Statement. I would like to know why D.O.E. rejected the "no action" alternative--that is, alternative #3 (which would have not opened the Waste Isolation Pilot Plant (WIPP)) and simply have continued operating existing D.O.E. nuclear facilities that generate and store wastes? I have yet to learn from anyone associated with D.O.E. what precisely is wrong with leaving the radioactive waste products at the SRP.

[I would specifically like an answer. Please send it to me at the above address. Thanks.]

I recognize, however, that even if you were to choose alternative #3 you would still fail to address my deeper and more long-term concerns. If you continued to produce nuclear weapons, the associated radioactive waste production would continue to mount. At some future point, even the most dis-hard defender of the SRP would have to recognize a growing burden of hazardous material at the plant. Alternative #3 would only postpone the time when waste would need to be distributed elsewhere. Furthermore, investment in weapons production would still divert national investment away from schools, housing, and health care. This deprivation of basic human services is not acceptable in a civilized society.

What is needed in your Supplemental Environmental Impact Statement is a thorough consideration of alternative #4, which was notably absent from your draft. Please write it in and examine it carefully. An alternative #4 would be the implementation of risk containment measures at the D.O.E. production sites, and would cease the production of tritium, plutonium, and all other materials related to the manufacture of nuclear weapons. There would be no need for a WIPP.

It is the continued operation of plants like the SRP which leads to the pressure to ship out these potentially dangerous radioactive wastes. It is the continued operation of these plants which robs my neighbors of human services and all our children of a secure and peaceful future.

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9-3

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3.6-2  
3.6-3



Mr. W. John Arthur, III

-2-

June 1, 1989

Institutions receiving grants and contracts from the federal government on this and a variety of subjects, then you have education and learning taking place by professors and students. Students, that may not be able to afford higher education if it were not for help through this research. I think it's exciting to find new research and information that is now available to provide an alternative. To turn our backs on this new information about proceeding with a phased approach to determine whether WIPP should become a repository for the disposal of transuranic waste, would be unwise in my view.

Waste is being generated by everyone -- whether it's commercial utilities, businesses, hospitals, educational institutions -- even our own households. Research and technology must continue in order to make life better for a modern society.

I have been in numerous meetings through the years, learning about the transportation plans, the waste containers, the detailed emergency preparedness, and I have been amazed by the thoroughness on all of this. I am proud of our state authorities that have risen to this challenge and by our Bonneville County authorities that have risen to this challenge by being involved and trained.

The National Environmental Policy Act requires among other things that all federal agencies carefully analyze potential environmental effects of proposed actions and their alternatives and consider these impacts in the decision-making process. Thank you for this opportunity to participate. I would hope our politicians would sit, trying to get our names in the newspaper and let the technical experts own the WIPP Site.

*Ann Ruppel*  
Senator Ann Ruppel  
District #33

5.1-5

5.12  
5.13

7.3.1-19  
7.12.9-1  
7.12.9-3  
7.12.9-7

2.6-1

Office of the Mayor

City Hall  
BLAND PARK, IDAHO 83801

May 31, 1989



THOMAS CAMPBELL  
MAYOR

Mr. W. John Arthur  
ATTN: SEIS Comments  
U.S. Department of Energy  
Albuquerque Operations Office  
P.O. Box 5400  
Albuquerque, New Mexico 87115

Dear Mr. Arthur:

The public safety units of Idaho Falls have been briefed concerning transportation of radioactive material to the WIPP Facility. They have looked at the packaging and handling of the material as well as the vehicles and the emergency procedures. We are satisfied as a city administration that every precaution has been taken. We are impressed with the concern which has been shown for the general public and the extra precautions which have been taken. We support the transportation of radioactive material to the WIPP Facility.

Respectfully,  
*Thomas Campbell*  
Thomas V. Campbell  
Mayor  
City of Idaho Falls

1-Jun-89: EX-00012, PAGE 1 OF 1  
MUNICIPAL BUILDING  
P.O. Box 4169  
902 E. Sherman

City of Pocatello  
POCATELLO, IDAHO 83205-4169

May 31, 1989

Mr. W. John Arthur, III  
DOE Project Manager  
WIPP-SRIS Project  
P. O. Box 5400  
Albuquerque, New Mexico 87116

Dear Mr. Arthur:

As a citizen of the United States of America, in response to the Waste Isolation Pilot Plant-Supplement to the Supplemental Environmental Impact Statement (WIPP-SRIS) public hearing comment I submit my statement in support of the WIPP Project (located at Carlsbad, New Mexico); a DOE Project established under Public Law 96-164 to demonstrate safe permanent disposal for radioactive waste generated by DOE national defense related facilities.

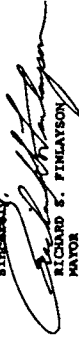
The WIPP-SRIS examines three action alternatives. My support is for DOE's proposed action:

"Proceed with a phased approach to determine whether WIPP should become a repository for disposal of transuranic waste."

I further believe that the WIPP will allow the removal of temporary waste storage at the various sites. Furthermore, I understand that to date there are no scientific reasons or evidence made known to me to halt their plan to place transuranic (TRU) waste at the WIPP. The systematic planned approach to responsibly deploy the WIPP is commendable.

I sincerely urge your consideration for the above proposed action.

Sincerely,

  
RICHARD E. FINLAYSON  
MAYOR

RSJ/pla

Office of the Mayor (208) 234-6163

1-Jun-89: EX-00013, PAGE 1 OF 7



United States Department of the Interior

NATIONAL PARK SERVICE  
Centers of the Moon National Monument  
P. O. Box 89  
Arco, Idaho 83413



May 31, 1989

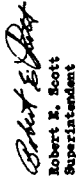
W. John Arthur, III  
SRIS Project Manager  
Department of Energy  
Albuquerque Operations Office  
P.O. Box 5400  
Albuquerque, NM 87115

Dear Mr. Arthur:

Enclosed is a copy of the statement made at the Pocatello, Idaho, meeting June 1, 1989, by representatives from the National Park Service, Centers of the Moon National Monument.

Thank you for the opportunity of allowing us to participate at this meeting.

Sincerely,

  
Robert K. Scott  
Superintendent

Enclosure

#### INTRODUCTION

Cresters of the Moon National Monument lies on the northern edge of the Snake River Plain, 18 miles southwest of Arco, Idaho and approximately 25 miles southeast of the INEL Chemical Processing Plant. CRMO contains the majority of cinder cones and volcanic fissures of the 60 mile long Great Rift, extending southward from the base of the Pioneer Mountains. CRMO was established in 1924 and is 83 square miles, with 43,243 acres designated as wilderness. As designated wilderness, this area is classified as a Class I air management area under the Clean Air Act of 1977.

As a land management agency, the National Park Service (NPS) is responsible for the stewardship and perpetuation of all the cultural and natural resources within the National Park System. The Airshed is a park resource. Polluted air can impair park resources in numerous ways, including leaching nutrients from the soil, acidification of water, structural or functional damage to vegetation with direct adverse impacts to wildlife, discoloration and accelerated weathering of the park's physical facilities and impairment of visibility.

In a 1988 visitors survey, designed to better understand visitor concerns, values, and perceptions while visiting CRMO, 89% of the responding visitors rated clean (fresh) air as important to their visit to the monument, (actual responses were: extremely important-48%, very important-27%, important-16%, somewhat important-5% & not important-7%). Stated another way, only 7% of the visitors felt that unpolluted air was not important. Scenic views were also rated in the same study, with 94% of the visitors expressing the opinion that unspoiled vistas were important, (actual responses were: extremely important-49%, very important-33%, important-12%, somewhat important 4%, & not important-1%). The results of the study clearly demonstrate the fact that visitors to the monument are concerned with air quality and place a high value on clean air.

Air is a critical component in determining the holistic health of the park's resources. It is crucial that the airshed be conscientiously managed to prevent harmful effects and irreversible damage to the entire ecosystem.

1Craters of the Moon National Monument - Visitor Services Project, Report 20, Dr. Gary Machlis, Department of Sociology, University of Idaho.

#### MANAGEMENT RESPONSIBILITIES AND OBJECTIVES

The NPS mission with respect to the air resource management has two major objectives: (1) to protect park resources and (2) to assure visitor enjoyment of the park and related resource. These objectives are based on authorities contained in the NPS Organic Act of 1916, the Clean Air Act as amended in 1977 (CAA), the National Environmental Policy Act (NEPA), and other policies, regulations and statutes.

#### The National Park Service Organic Act of 1916

The Organic Act declares:  
The National Park Service shall promote and regulate the use of the Federal areas known as national parks, monuments, and reservations hereinafter specified by such means and measures as conform to the fundamental purpose of the said parks, monuments, and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave these unimpaired for the enjoyment of future generations. (USC title 16, sec. 1).

#### The 1978 Amendment to the 1916 Act

This legislation establishes the park's authority for stopping an activity, as long as the park manager can justify the "degradation of the value and purposes" of the area. This law is an express reaffirmation from Congress that mandates the responsibility of the NPS to preserve and protect.

The authorization of activities shall be construed and the protection, management and administration of these areas shall be conducted in light of the high public value and integrity of the National Park System and shall not be exercised in derogation of the value and purposes for which these areas have been established, except as may have been or shall be directly and specifically provided by Congress. (USC 16 sec. 1a-1)

#### The National Environmental Policy Act of 1969

The National Environmental Policy Act establishes as federal policy the goal of protecting and preserving for future generations such environmental values and resources as are found in national parks and wilderness areas. NEPA was created by Congress to assure that actions by governmental entities would be designed and implemented in ways which are sensitive to environmental needs and to potential environmental consequences. Further, that law provides an explicit mandate to the NPS and other federal agencies to undertake and promote "... efforts which will prevent or eliminate damage to the environment and biosphere and simulate the health and welfare of man." Thus, NEPA provides

general authorities both to prevent environmental damage and to mitigate unavoidable impacts.

The Clean Air Act as amended in 1977

In subsequent legislation, Congress made more explicit both the NPS's authority and its duty to protect park resources from air pollution-related damage. In the CAA/77 Congress spelled out some specific substantive and procedural tools to be used by the NPS in carrying out its air quality-related duties. Specifically, a program was established to prevent any significant deterioration of the air quality in clean air regions of the country. This program, called the Prevention of Significant Deterioration (PSD) program is set forth in sections 160-169 of the CAA, as amended (42 U.S.C. 7470).

Among its major stated purposes are:

"...to preserve, protect and enhance the air quality in national parks, national monuments, national seashores, and other areas of special national or regional natural, recreational, scenic or historic value" and

"...to assure that any decision to permit increased air pollution in any area to which this section applies is made only after careful evaluation of all the consequences of such a decision and after adequate procedural opportunities for informed public participation in the decision-making process."

Under the PSD program, certain areas of the country were set aside to receive the most stringent degree of air quality protection. These are the "class I" designated areas and include, "national wilderness areas .....in excess of 5000 acres..."

The law further dictates that the federal officials charged with direct responsibility for managing and class I lands has an affirmative responsibility to protect "air quality related values" of NPS class I areas. Specifically, the federal land manager (FLM) is to consider, during the air pollution control permitting process which takes place before a major source of pollution is constructed, whether it will have an adverse impact on such values. If it is determined that adverse impacts on air-quality related values are likely to occur within a class I area, then the law requires state and/or federal action, to prevent or mitigate or minimize such adverse impacts.

The CAA/77 did not define the term "air quality related values". The NPS has officially defined the term as follows:

Air Quality related values (AQRV) are all those values possessed by an area except those that are not affected by

changes in air quality and include all those assets of an area whose vitality, significance or integrity is dependent in some way upon the air environment. These values include visibility and those scenic, cultural, biological, and recreation resources of an area that are affected by air quality (43 Fed. Reg. 15016). These are the values and resources that Congress requires the NPS to protect against air pollution-related damage in the cleanest air quality regions of the country.

In addition to these PSD provisions, the CAA/77 provide special means for protecting an aspect of air quality--visual air quality--from air pollution damage in class I areas.

Section 169A declares:  
 "...the prevention of any future, and the remedying of any existing, impairment of visibility in mandatory class I Federal areas" [42 U.S.C. 7491 (a)(1)]. This visibility mandate serves as the basis for a number of NPS activities including:

- designation of those class I areas in which visibility is an important value.
- identification of those NPS scenic vistas which look from class I areas outward into non-class I lands but which are considered important to the park area visitor's experience.
- advising states of those class I areas and important vistas in which the visual air quality has been determined to be "...impaired..." by man-made sources of pollution.
- identifying (if possible) the source or sources responsible for any such impairment.
- reviewing and approving or disapproving any proposed pollution control exemption for any source which otherwise would be required to reduce its existing impairment of visibility in a class I area.

Sections 110 and 121 declare:

"States are required to prepare, submit to EPA for approval and carry out a state implementation plan (SIP) which will assure that all substantive and procedural requirements of the CAA/77 set by the prescribed deadlines. States must consult with the FLM on the development and revision of SIPs including provisions in the plans implementing prevention of significant deterioration/visibility protection. This mandated state activity presents the basis for a variety of NPS air resource management activities, such as:

- monitoring states' and individual sources' activities and providing data and suggestions on these matters to the state.



-Informally negotiating with the states and EPA, on air quality issues important to the NPS.

Section 118 declares:

All federal, state and local government properties, facilities, and activities are subject to all federal, state, interstate and local requirements respecting the control and abatement of air pollution. They must comply with these requirements in the same manner and to the same extent as any nongovernmental entity. Thus not only must NPS' own activities and facilities comply but also when air pollution from other government facilities or activities is endangering park air resources, NPS must seek to assure that those other facilities and activities comply.

NATIONAL PARK SERVICE MANAGEMENT POLICIES

The management of the national park system and NPS programs is guided by "Management Policies". These management policies are based on the Constitution, public laws, proclamations, executive orders, rules and regulations, and directives of the Secretary of Interior. All policy originates in law. Policy sets the framework and provides direction for management decisions and actions. Adherence to policy is mandatory unless waived or modified by an appropriate authority.

Management Policies - 1988

Natural Resource Management [Chapter 4]

The NPS will manage the natural resources of the national park system to maintain and perpetuate their inherent integrity.

The natural resource policies of the NPS are aimed at providing the American people with the opportunity to enjoy and benefit from natural environments evolving through natural processes minimally influenced by human actions. The natural resources and values that the Park Service protects are described in the 1916 NPS Organic act (16USC 1et seq.) and the enabling legislation or executive orders establishing the parks. These resources and values include plants, animals, water, air, soils, topographic features, geologic features, paleontologic resources, and aesthetic values, such as scenic vistas, natural quiet, and clear night skies. The NPS is committed to working cooperatively with federal and state agencies and others in the management of natural resources and will seek to establish formal and informal lines of communication and consultation in order to better achieve park management objectives.

Statement for Management - CRMO 1988 The Statement For Management (SFM) provides an up-to-date inventory of the park's condition and an analysis of the current problems.

The current SFM concludes that Air Quality is an important and valuable park resource. Protection will be provided through cooperation with other agencies, participation in the planning and development of facilities outside the park, and permit applications for new pollution sources will be reviewed and potential impacts will be assessed.

The public's understanding of park air quality related values and associated issues will be promoted through educational and interpretive programs. Air quality monitoring will continue as a long term research project, with future monitoring to include gaseous as well as visibility monitoring.

Air Quality

The NPS will seek to perpetuate the best possible air quality in parks because of the critical importance of air quality to visitor enjoyment and health, the vitality of natural systems, and the integrity of cultural scenes. Vegetation, visibility, water quality, wildlife, and most other elements of a park environment are sensitive to air pollution and are referred to as "air quality related values". The NPS will assume an aggressive role in promoting and pursuing measures to safeguard these values from the adverse impacts of air pollution. In cases of doubt as to the impacts of existing or potential air pollution on park resources, the NPS will err on the side of protecting air quality and related values for future generations.

AIR RESOURCES AND AIR QUALITY RELATED VALUES

Until recently, managers presumed a pristine airshed existed at CRMO. Preliminary analysis of visibility data indicates a significant decrease in the mean standard visual range and an increase in TSP particulates from 1982 - 1986.

In 1985, suspected damage to vegetation was observed in limer pines, chokecherry and aspen. The observed visual damage to the leaves are consistent with ozone and fluoride injury. No gaseous pollutant parameters have been monitored at CRMO.



W.I.P.P. Petition

The Waste Isolation Pilot Plant (WIPP), specifically designed to store transuranic (radioactive) waste has a number of safety issues which should be resolved before waste operations begin at the New Mexico facility.

1. The DOE should demonstrate that the WIPP can comply with EPA safety standards.
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3. DOE should develop an experimental program to address technical uncertainties at the WIPP.
4. DOE should complete necessary WIPP environmental analyses.
5. DOE and NRC should ascertain the safety of WIPP shipping containers. (to date, cask prototypes have failed NRC-required tests)

WE, THE UNDERSIGNED, BELIEVE THAT TRANSPORTING RADIOACTIVE WASTE ON IDAHO'S HIGHWAYS POSES AN UNACCEPTABLE RISK TO IDAHO'S PEOPLE, AGRICULTURE, ENVIRONMENT AND QUALITY OF LIFE. WE ALSO BELIEVE THAT INCINERATION OF HAZARDOUS AND RADIOACTIVE WASTE TO PREPARE IT FOR SHIPMENT TO WIPP IS A PUBLIC HEALTH AND SAFETY CONCERN THAT HAS NOT BEEN ADEQUATELY ADDRESSED.

- | NAME (Please Print)           | ADDRESS                  |
|-------------------------------|--------------------------|
| 1. Sean Hisker                | 280 Highland Ave Burley  |
| 2. Margie Atkins              | 1358 Burton Burley       |
| 3. <del>Janet Jamieson</del>  | Rt 1 Box 410 Burget      |
| <del>Janet Jamieson</del>     | 559 W. 27th Burley Ida   |
| 4. <del>Janet Jamieson</del>  | 422 St 272 Burley Id     |
| 5. Howard Anderson            | 2330 Burton Burley       |
| 6. Jani Street                | 645 14th St Heyburn      |
| 7. Carolyn Dugan              | 606 E. 6th St Burley     |
| 8. <del>Janet Jamieson</del>  | Rt 2 Box 207 Heyburn, ID |
| 9. <del>Janet Jamieson</del>  | Rt 2 Box 241 Heyburn, ID |
| 10. <del>Janet Jamieson</del> | 218 1/2 Ave Burley       |

RETURN PETITIONS TO: FOCUS, Box 744, Burley, Idaho 83318

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- | NAME (Please Print)         | ADDRESS                       |
|-----------------------------|-------------------------------|
| 1. Stacey Spiggill          | Rt 1 Box 1786                 |
| 2. Vicki Peterson           | Rt 1 Box 800 Burley 83318     |
| 3. Beverly A. Stone         | Rt 1 7 Springside Ave Burley  |
| 4. <del>Richard Keith</del> | Rt 1 Box 1791 Burley          |
| 5. Richard Keith            | Rt Box 1798 Burley, Id        |
| 6. <del>Richard Keith</del> | Rt 1 Box 1790 Burley Id       |
| 7. <del>Richard Keith</del> | Rt 1 via Hillcrest Burley, Id |

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- NAME (Please Print) ADDRESS
1. Dick Clark 285 W 24th St Burley Idaho
  2. Arnie Harkle 340 W. Conant - Burley Idaho
  3. Edith E. Haggert Rt. 2 661 Blucher Paul, ID
  4. Wayne Johnson Rt. 3 Burley Idaho
  5. Lee Lander 724 S. Central Burley
  6. Gerald Blunder 2216 National Highway
  7. Glenn Dick 627 E 19 - Burley ID
  8. Mary Thacke Rt. 2 Burley Idaho
  10. \_\_\_\_\_
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- NAME (Please Print) ADDRESS
1. David R. Fray 200th 5310 Benton Ave Burley ID 83318
  2. Gene Shockey 10th Street 233 Woody Ave Burley ID 83318
  3. Mark Shockey 10th Street 233 Woody Ave Burley ID 83318
  4. Mark Shockey 1327 Concord Burley ID 83318
  5. High Johnson 1327 Concord Burley ID 83318
  6. Ed Williams 2159 Miller Burley Idaho 83318
  7. Raymond Johnson 2159 Miller Burley Idaho 83318
  8. John & Edith Haggert 1956 Elgin Burley ID 83318
  9. John & Edith Haggert 1956 Elgin Burley ID 83318
  10. John & Edith Haggert Rt. 2 Box 2107 Burley ID 83318
  11. Claude Cook 1034x 645 Highway 66 13336
  12. John & Edith Haggert 1956 Elgin Burley ID 83318

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- | NAME (Please Print)  | ADDRESS                              |
|----------------------|--------------------------------------|
| 1. Jack & Zarybnisky | Rt 11 Burley Idaho                   |
| 2. Gordon R. Bonds   | 412 Hillcrest Rd Burley, Idaho 83318 |
| 3. [unclear]         | 222 East 8th Ave Burley, Idaho 83318 |
| 4. Steve Orndorff    | Rt 2 Box 247 A Heyburn, ID. 83336    |
| 5. Helen Newman      | 1718 Concord Burley, Id.             |
| 6. Janet Stricker    | Rt 11, N. Westingh, Idaho 83318      |
| 7. Joseph Hunter     | Rt 5 Box 4438 Burley, Idaho 83318    |
| 8. Lee Baarsen       | 625 W. 39 Burley, ID 83318           |
| 9. Bob [unclear]     | 625 W. 39 Burley, ID 83318           |
| 10. [unclear]        | 1735 W. Warner Burley, ID 83318      |
| 11. John [unclear]   | 544 Cedar St. Burley, ID. 83318      |
| 12. John F. Watts    | 544 Cedar St. Burley, ID 83318       |

RETURN PETITIONS TO: FOCUS, Box 744, Burley, Idaho 83318

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- | NAME (Please Print) | ADDRESS                             |
|---------------------|-------------------------------------|
| 1. [unclear]        | P.O. Box 987, Burley, ID. 83318     |
| 2. Cindy [unclear]  | P.O. Box 112 Burley, ID 83318       |
| 3. Judith Robinson  | 2101 Fairmont Burley, Idaho 83318   |
| 4. [unclear]        | 2601 Fairmont, Burley, ID. 83318    |
| 5. [unclear]        | 163 Washington Ave Burley, ID 83318 |
| 6. [unclear]        | Rt 2 Burley, Idaho 83318            |
| 7. [unclear]        | Rt 1 [unclear] Burley, ID 83318     |
| 8. [unclear]        | 1122 E. 17th Burley, ID 83318       |
| 9. [unclear]        | [unclear] Burley, ID 83318          |
| 10. [unclear]       | [unclear] Burley, ID 83318          |
| 11. [unclear]       | 2330 Miller Burley, ID 83318        |
| 12. [unclear]       | 2330 Apple, Burley, ID 83318        |

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- | NAME (Please Print) | ADDRESS                         |
|---------------------|---------------------------------|
| 1. Sally Neilson    | 2622 Regan Ave; Boise, ID 83702 |
| 2. Betty Westell    | 2518 Melba; Boise, ID 83702     |
| 3. Steve Neilson    | RT 1 Box 344 Rupert, ID 83750   |
| 4. Marcy Neilson    | RT 1 Box 344 Rupert, ID 83750   |
| 5. _____            | _____                           |
| 6. _____            | _____                           |
| 7. _____            | _____                           |
| 8. _____            | _____                           |
| 10. _____           | _____                           |
| 11. _____           | _____                           |
| 12. _____           | _____                           |

RETURN PETITIONS TO: FOCUS, Box 744, Burley, Idaho 83318

W.I.P.P. Petition

The Waste Isolation Pilot Plant (WIPP), specifically designed to store Transuranic (radioactive) waste has a number of safety issues which should be resolved before waste operations begin at the New Mexico facility.

1. The DOE should demonstrate that the WIPP can comply with EPA safety standards.
2. DOE should comply with federal hazardous waste regulations.
3. DOE should develop an experimental program to address technical uncertainties at the WIPP.
4. DOE should complete necessary WIPP environmental analyses.
5. DOE and NRC should ascertain the safety of WIPP shipping containers. (to date, cask prototypes have failed NRC-required tests)

WE, THE UNDERSIGNED, BELIEVE THAT TRANSPORTING RADIOACTIVE WASTE ON IDAHO'S HIGHWAYS POSES AN UNACCEPTABLE RISK TO IDAHO'S PEOPLE, AGRICULTURE, ENVIRONMENT AND QUALITY OF LIFE. WE ALSO BELIEVE THAT INCINERATION OF HAZARDOUS AND RADIOACTIVE WASTE TO PREPARE IT FOR SHIPMENT TO WIPP IS A PUBLIC HEALTH AND SAFETY CONCERN THAT HAS NOT BEEN ADEQUATELY ADDRESSED.

- | NAME (Please Print) | ADDRESS                              |
|---------------------|--------------------------------------|
| 1. Arthur J. Koch   | 388 E. 42nd Burley, ID               |
| 2. Shelby R. Smith  | F. 42nd St. and Cleveland Burley, ID |
| 3. Eric Bonds       | RT 1 Box 1438 Burley, ID             |
| 4. _____            | _____                                |
| 5. Elwyn Hanks      | RT 1 Box 1520 Burley, Idaho          |
| 6. Marcy Murphy     | RT 2 Box 2377 Burley, Idaho          |
| 7. Fred Murphy      | RT 2 Box 2377 Burley, Idaho          |
| 8. _____            | _____                                |
| 9. _____            | _____                                |
| 10. _____           | _____                                |
| 11. _____           | _____                                |
| 12. Kathy Weisstein | 219 West 18th Burley ID 83318        |

RETURN PETITIONS TO: FOCUS, Box 744, Burley, Idaho 83318

1-Jun-89: EX-00016, PAGE 1 OF 1

Department of Energy  
SEIS Hearing  
Pocatello, Idaho

June 1, 1989

Dear Sirs,

The scope of the radio-active waste problem at and around our DOE sites is far greater than the draft SEIS acknowledges. I am afraid that WIPP was chosen by the DOE and Congress to be a "solution" for assurances, mainly. Because in reality, the WIPP would never be the first choice of scientists and geologists. It is the first choice for political reasons. This is a crime, not only against the environment and future Americans, but also a further blight on the DOE.

I would hope that we could have a candid relationship between the Department of Energy and the people of this country. Right now, the DOE has all the credibility of a snake-oil salesman. There is urgent need to discuss the entire range of problems regarding all the toxic and radio-active waste that must be cleaned up. To force WIPP into premature operation is only to further the failed credibility of the DOE. Please, let us do this fairly, the democratic way. The WIPP must be shown to comply with existing EPA and RCRA rules and standards. It must not be allowed to open, only to become just ONE MORE LEAKY Department of Energy site!

Sincerely,

*Marcy N. Neilson*  
Marcy V. Neilson  
Route 1 Box 344  
Rupert, ID 83350

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1-Jun-89: EX-00017, PAGE 1 OF 3

My name is Carla Shockey, I am a third generation Idahoan living in Burley, Idaho. I am a wife, mother and an accounting executive for a major popcorn distribution company.

I would like to comment on the Supplemental Environmental Impact Statement (SEIS) of the Waste Isolation Pilot Plant (WIPP). [It is my understanding that WIPP is a DOE project established under Public Law 96-14 which must demonstrate safe permanent disposal for radioactive waste generated by DOE nuclear weapons production facilities.

My concerns are many with respect to WIPP. It has been my observation that the DOE makes the science to fit the project. Have you ever noticed that everything the DOE does is perfectly safe or so they tell us so. Quoting Carl Gertz, DOE project manager at Yucca Mountain, "if it's not safe after five-to-seven years and \$1-to-\$2 billion later, we'll determine it's not safe. I

We won't build it." This statement represents the principle by which DOE hides behind. I am not the least bit secure in Mr. Gertz's comment. The DOE has never found a site unusable after spending some \$2 billion of our tax dollars on studies. WIPP is a perfect example of this DOE creed. When push comes to shove, their projects, whether safe or not, will be built. The DOE does it's damndest to make sure the science fits.

[The DOE must be called upon to demonstrate that they haven't fashioned the science to fit this project. They must demonstrate that WIPP can meet the Environmental Protection Agency's standard for waste disposal sites BEFORE any wastes are transported to WIPP. If WIPP is safe, then let the DOE prove it. DOE says that

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WIPP can be "fixed" so that it can handle 0.1 percent of the country's nuclear waste: Are we in Idaho prepared for the time when DOE says INEL can be "fixed" to handle the other 99.9 percent of the waste?

You see, WIPP is not just down there. WIPP is here too because Idaho has been a nuclear waste repository for twenty years. Gov. Andrus, Senator Symms, Senator McClure, Rep. Craig & Stallings would all have us believing that WIPP is the answer to Idaho's nuclear waste problems. But shuffling wastes around does not solve the problem; opening WIPP will only make the problem worse by creating ANOTHER waste facility that leaks. WIPP is creating the illusion that Idaho's nuclear waste storage problems are solved. When in reality the DOE intends to reclassify fully half of the 2.2 million cubic feet of nuclear weapons production waste now "temporarily" stored above ground at the INEL. By reclassifying this waste it will not be acceptable for WIPP and for the present, will remain in Idaho. Another example of making the science fit.

DOE estimates there will be over 900 shipments per year to the WIPP from 10 DOE sites around the country endangering millions of people living in 20 states along transportation routes. Are the communities along these routes prepared for a potential accident? [I know Burley isn't.] To date, the cask prototypes for shipping wastes to WIPP have failed NRC required tests. Will DOE again make the science fit their casks?

DOE operates its facilities in a hazardous and secretive fashion. Events in recent months have uncovered evidence of

this. Why should we trust them now? If it's written large. The DOE will not level with you or tell you the truth. You can not trust them. And I don't trust their judgment or the bells and whistles they are blowing to lure our attention away from the real problem and towards the opening of WIPP. By creating this illusion AND MAKING THE SCIENCE FIT, DOE is delaying efforts to do what needs to be done:

SHUT IT DOWN, CLEAN IT UP, DON'T MAKE ANY MORE!!!!!!!!!!!!!!!!!!!!

*Leslie Shockey*  
233 Nancy Drive  
Burley, ID 83318



WIPP TESTIMONY

JUNE 1, 1989

POCATELLO QUALITY INN

My name is Ira Koplow and I am the Executive Director of the Greater Idaho Falls Chamber of Commerce. *Added by M. Garvin A.S. If*  
 Over the past two years, *the program for transporting the waste again, is very*  
 our Chamber, along with several area chambers, have sponsored *will thought out and applicable for today's concerns. We have*  
 tours at the Idaho National Engineering Laboratory. We have had a *seen the examination tests, we have first hand experience*  
 chance to see first hand how the transuranic waste is currently *reviewing the TRUPACTII waste containers and we believe they are*  
 being handled at the Radioactive Waste Management Complex at the *very safe and that they will be certified by the U. S. Nuclear*  
 Idaho National Engineering Laboratory. We have physically viewed *Regulatory Commission.*  
 the type of waste we are talking about; including tools, *Time after time, year after year, we have been impressed with*  
 glassware, gloves and a variety of solidified sludges and organic *the safety record of the Idaho National Engineering Laboratory.*  
 solvents. Throughout these tours, Chamber members and *Our families and friends work at the Idaho National Engineering*  
 participants have been educated to the various strategies used for *Laboratory and we have a deep concern that safety remain the top*  
 waste storage processing and disposal. We have had a chance to *priority. We are fortunate to have excellent management at the*  
 study these strategies when touring the "state of the art" Stored *Idaho National Engineering Laboratory. We feel the proper*  
 Waste Examination Pilot Plant and *handling of the transuranic waste by the Department of Energy is*  
 certified for future shipment to the Department of Energy Waste *equally as important as the plutonium reprocessing and*  
 Isolation Pilot Plant in New Mexico. *fabrication, as well as the research and development activities at*  
*various Department of Energy Facilities.*

Several hundred Chamber members and participants have studied *The people at the Department of Energy have the knowledge,*  
 this issue regarding the best repository for the disposal of *ability and experience to safely handle this waste management*  
 transuranic waste. We believe that the facilities at the Waste *system. They have demonstrated repeatedly their ability to safely*  
 Isolation Pilot Plant are safe, well thought out and practical *and efficiently certify, package, transport and replace waste at*  
*the Idaho National Engineering Laboratory during our recent tours.*

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WIPP Testimony

Page Two

for storing the transuranic waste. The Greater Idaho Falls *for storing the transuranic waste. The Greater Idaho Falls*  
 Chamber of Commerce believes that the best long-term placement for *Chamber of Commerce believes that the best long-term placement for*  
 this transuranic waste is the Waste Isolation Pilot Plant in New *this transuranic waste is the Waste Isolation Pilot Plant in New*  
 Mexico. *The program for transporting the waste again, is very*  
 will thought out and applicable for today's concerns. We have *will thought out and applicable for today's concerns. We have*  
 seen the examination tests, we have first hand experience *seen the examination tests, we have first hand experience*  
 reviewing the TRUPACTII waste containers and we believe they are *reviewing the TRUPACTII waste containers and we believe they are*  
 very safe and that they will be certified by the U. S. Nuclear *very safe and that they will be certified by the U. S. Nuclear*  
 Regulatory Commission. *Regulatory Commission.*

Time after time, year after year, we have been impressed with *Time after time, year after year, we have been impressed with*  
 the safety record of the Idaho National Engineering Laboratory. *the safety record of the Idaho National Engineering Laboratory.*  
 Our families and friends work at the Idaho National Engineering *Our families and friends work at the Idaho National Engineering*  
 Laboratory and we have a deep concern that safety remain the top *Laboratory and we have a deep concern that safety remain the top*  
 priority. We are fortunate to have excellent management at the *priority. We are fortunate to have excellent management at the*  
 Idaho National Engineering Laboratory. We feel the proper *Idaho National Engineering Laboratory. We feel the proper*  
 handling of the transuranic waste by the Department of Energy is *handling of the transuranic waste by the Department of Energy is*  
 equally as important as the plutonium reprocessing and *equally as important as the plutonium reprocessing and*  
 fabrication, as well as the research and development activities at *fabrication, as well as the research and development activities at*  
 various Department of Energy Facilities. *various Department of Energy Facilities.*

The people at the Department of Energy have the knowledge, *The people at the Department of Energy have the knowledge,*  
 ability and experience to safely handle this waste management *ability and experience to safely handle this waste management*  
 system. They have demonstrated repeatedly their ability to safely *system. They have demonstrated repeatedly their ability to safely*  
 and efficiently certify, package, transport and replace waste at *and efficiently certify, package, transport and replace waste at*  
 the Idaho National Engineering Laboratory during our recent tours. *the Idaho National Engineering Laboratory during our recent tours.*

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3.1-1  
7.3.2.2  
7.3.2.4

3.1-1  
3.2-1

WIPP Testimony  
Page Three

In fact, we have another tour sponsored by the Greater Idaho Falls Chamber of Commerce going on today. Our next tour will be July 27, 1989 and the deadline is July 13, 1989 to sign up. If any of you are interested in signing up for this tour, please call the Chamber in Idaho Falls.

The supplement to the Environmental Impact Statement for the Waste Isolation ~~Plant~~ <sup>Plant</sup> examines three alternatives...the Greater Idaho Falls Chamber of Commerce believes that the best alternative is to proceed with a phased approach to determine whether the waste isolation ~~plant~~ <sup>plant</sup> should become a repository for the disposal of transuranic waste. Along with my testimony, I am presenting an additional 75 letters of support also endorsing the alternative to proceed with the phased approach to determine whether WIPP should become a repository for transuranic waste. This group of 75 business people, community leaders and Chamber members believe that the systematic, planned approach to responsibly deploy the transuranic waste to the Waste Isolation ~~Plant~~ <sup>Plant</sup> is commendable.

On behalf of the Greater Idaho Falls Chamber of Commerce, I strongly urge your consideration for a proposed action to proceed with the "phased approach" to determine whether the WIPP facility should become a repository for the disposal of transuranic waste.

Mr. W. John Arthur, III, DOE Project Manager  
WIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

Dear Mr. Arthur:

As a citizen of the United States of America, in response to the Waste Isolation Pilot Plant-Supplement to the Supplement Environmental Impact Statement (WIPP-SEIS) public hearing comment, I submit my statement in support of the WIPP Project (located at Carlsbad, New Mexico); a DOE Project established under Public Law 96-164 to demonstrate safe permanent disposal for radioactive waste generated by DOE national defense related facilities.

The WIPP-SEIS examines three action alternatives. My support is for DOE's proposed action:

"Proceed with a phased approach to determine whether WIPP should become a repository for the disposal of transuranic waste."

I further believe that the WIPP will allow the removal of temporary waste storage at the various sites. Furthermore, I understand that to date there are no scientific reason or evidence made known to DOE to halt their plan to place transuranic (TRU) waste at the WIPP. The systematic planned approach to responsibly deploy the WIPP is commendable.

I sincerely urge your consideration for the above proposed action.

Sincerely,

Signature \_\_\_\_\_ Print Name \_\_\_\_\_ Date \_\_\_\_\_

Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ ZIP \_\_\_\_\_

Mr. M. John Arthur, III, DOE Project Manager  
MIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

Dear Mr. Arthur:

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*Robert D. Quilty*  
Signature

Print Name

Date

1860 John D. White Hall Rd 83406

Address,

City

State

ZIP

Mr. M. John Arthur, III, DOE Project Manager  
MIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

Dear Mr. Arthur:

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*Howard Levitt - Howard Levitt*  
Signature

Print Name

Date

1355 Meenitt - Hobbs Falls, Idaho, 83401

Address,

City

State

ZIP

Mr. M. John Arthur, III, DOE Project Manager  
MIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

Dear Mr. Arthur:

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I sincerely urge your consideration for the above proposed action.

Sincerely,

Lucia M. Brady Lucia M. Brady 5/23/89  
Signature Print Name Date

1661 Bedford Idaho Falls ID 83401  
Address City State ZIP

Mr. M. John Arthur, III, DOE Project Manager  
MIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

Dear Mr. Arthur:

As a citizen of the United States of America, in response to the Waste Isolation Pilot Plant-Supplement to the Supplement Environmental Impact Statement (MIPP-SEIS) public hearing comment, I submit my statement in support of the MIPP Project (located at Carlisbad, New Mexico); a DOE Project established under Public Law 96-164 to demonstrate safe permanent disposal for radioactive waste generated by DOE national defense related facilities.

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I sincerely urge your consideration for the above proposed action.

Sincerely,

EULA J BRADY Eula J. Brady MAY 23 1989  
Signature Print Name Date

1643 HOLLY PARK DR. IDAHO FALLS, IDA 83401  
Address City State ZIP

1-JUN-89; EX-00019, PAGE 6 OF 83

Mr. M. John Arthur, III, DOE Project Manager  
WIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

Dear Mr. Arthur:

As a citizen of the United States of America, in response to the Waste Isolation Pilot Plant-Supplement to the Supplement Environmental Impact Statement (WIPP-SEIS) public hearing comment, I submit my statement in support of the WIPP Project (located at Carlsbad, New Mexico); a DOE Project established under Public Law 96-168 to demonstrate safe permanent disposal for radioactive waste generated by DOE national defense related facilities.

The WIPP-SEIS examines three action alternatives. My support is for DOE's proposed action:

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*C. A. Brady*  
Signature  
C. A. BRADY  
Print Name  
1892-Alexy Park Dr - Fairbairns, ID 83410  
Address  
5-23-89  
Date  
Fairbairns  
City  
ID  
State  
83410  
ZIP

1-1

1-JUN-89; EX-00019, PAGE 7 OF 83

Mr. M. John Arthur, III, DOE Project Manager  
WIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

Dear Mr. Arthur:

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I sincerely urge your consideration for the above proposed action.

Sincerely,  
*William S. Rumsey*  
Signature  
WILLIAM S. RUMSEY  
Print Name  
5-23-89  
Date  
1892-Alexy Park Dr - Fairbairns, ID  
Address  
Fairbairns  
City  
ID  
State  
83410  
ZIP

1-1

Mr. W. John Arthur, III, DOE Project Manager  
MIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

Dear Mr. Arthur:

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*Don McLaughlin*  
Signature

Print Name

Date

*Don McLaughlin* 5-23-89

Date

*1620 Whitlock*  
Address

City

State

ZIP

*Salida* 83402

Mr. W. John Arthur, III, DOE Project Manager  
MIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

Dear Mr. Arthur:

As a citizen of the United States of America, in response to the Waste Isolation Pilot Plant-Supplement to the Supplement Environmental Impact Statement (MIPP-SEIS) public hearing comment, I submit my statement in support of the MIPP Project (located at Carlsbad, New Mexico); a DOE Project established under Public Law 96-164 to demonstrate safe permanent disposal for radioactive waste generated by DOE national defense related facilities.

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*Mike Beaudolph*  
Signature

Print Name

Date

*Mike Beaudolph* 5-23-89

Date

*1635 Burtch*  
Address

City

State

ZIP

*Salida* 83401

1-Jun-89; EX-00019, PAGE 10 OF 83

Mr. W. John Arthur, III, DOE Project Manager  
WIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

Dear Mr. Arthur:

As a citizen of the United States of America, in response to the Waste Isolation Pilot Plant Supplement to the Supplement Environmental Impact Statement (WIPP-SEIS) public hearing comment, I submit my statement in support of the WIPP Project (located at Carlisbad, New Mexico); a DOE Project established under Public Law 96-164 to demonstrate safe permanent disposal for radioactive waste generated by DOE national defense related facilities.


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I sincerely urge your consideration for the above proposed action.

Sincerely,

  
Signature

Print Name

Date

Dave Post 5-23-89

447 Cleveland  
Address

City

State

ZIP

Dale 8349

1-1

1-Jun-89; EX-00019, PAGE 11 OF 83

Mr. W. John Arthur, III, DOE Project Manager  
WIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

Dear Mr. Arthur:

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I sincerely urge your consideration for the above proposed action.

Sincerely,

  
Signature

Print Name

Date

David Keeney 5-23-89

1455 Keeney  
Address

City

State

ZIP

Idaho Falls ID 83401

1-1

1-Jun-89; EX-00019, PAGE 12 OF 83

Mr. M. John Arthur, III, DOE Project Manager  
WIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

Dear Mr. Arthur:

As a citizen of the United States of America, in response to the Waste Isolation Pilot Plant-Supplement to the Supplement Environmental Impact Statement (WIPP-SEIS) public hearing comment, I submit my statement in support of the WIPP Project (located at Carlsbad, New Mexico); a DOE Project established under Public Law 96-164 to demonstrate safe permanent disposal for radioactive waste generated by DOE national defense related facilities.

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*David M. Frisky*  
Signature David M. Frisky Print Name 5-23-89 Date

11246 N. 95<sup>th</sup> E. Edho Falls, Edho City 83546 State ZIP  
Address

1-1

1-1

1-Jun-89; EX-00019, PAGE 13 OF 83

Mr. M. John Arthur, III, DOE Project Manager  
WIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

Dear Mr. Arthur:

As a citizen of the United States of America, in response to the Waste Isolation Pilot Plant-Supplement to the Supplement Environmental Impact Statement (WIPP-SEIS) public hearing comment, I submit my statement in support of the WIPP Project (located at Carlsbad, New Mexico); a DOE Project established under Public Law 96-164 to demonstrate safe permanent disposal for radioactive waste generated by DOE national defense related facilities.

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*David M. Frisky*  
Signature David M. Frisky Print Name 5-23-89 Date

11246 N. 95<sup>th</sup> E. Edho Falls, Edho City 83546 State ZIP  
Address



06/01/89  
Page 1 of 1

1-Jun-89: EX-00019, PAGE 14 OF 83

Mr. W. John Arthur, III, DOE Project Manager  
WIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

Dear Mr. Arthur:

As a citizen of the United States of America, in response to the Waste Isolation Pilot Plant-Supplement to the Supplement Environmental Impact Statement (WIPP-SEIS) public hearing comment, I submit my statement in support of the WIPP Project (located at Carlsbad, New Mexico); a DOE Project established under Public Law 96-164 to demonstrate safe permanent disposal for radioactive waste generated by DOE national defense related facilities.

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I sincerely urge your consideration for the above proposed action.

Sincerely,

D. H. Berg  
Signature  
Print Name  
5-23-89  
Date

1980 Eagle Dr.  
Address  
Alamo Falls  
City  
CO  
State  
83441  
ZIP

1-1

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1-Jun-89: EX-00019, PAGE 15 OF 83

Mr. W. John Arthur, III, DOE Project Manager  
WIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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I sincerely urge your consideration for the above proposed action.

Sincerely,

Steve Brady  
Signature  
Print Name  
5-23-89  
Date

2763 Tippecanoe Dr.  
Address  
Indian Wells, ID  
City  
CO  
State  
83204  
ZIP

1-1

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1-Jun-89: EX-00019, PAGE 16 OF 83

Mr. W. John Arthur, III, DOE Project Manager  
WIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

Dear Mr. Arthur:

As a citizen of the United States of America, in response to the Waste Isolation Pilot Plant-Supplement to the Supplement Environmental Impact Statement (WIPP-SEIS) public hearing comment, I submit my statement in support of the WIPP Project (located at Carlisle, New Mexico); a DOE Project established under Public Law 96-164 to demonstrate safe permanent disposal for radioactive waste generated by DOE national defense related facilities.

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*John A. Pelt*  
Signature

John A. Pelt  
Print Name

5-27-89  
Date

15000 Hardscrabble  
Address

Idaho Falls, ID  
City

83401  
State

ZIP

1-1

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1-Jun-89: EX-00019, PAGE 17 OF 83

Mr. W. John Arthur, III, DOE Project Manager  
WIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

Dear Mr. Arthur:

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*DeLyn Hendricks*  
Signature

DeLyn Hendricks  
Print Name

5/23/89  
Date

344 Buckboard Lane  
Address

Idaho Falls, ID  
City

83403  
State

ZIP

1-1

06/01/89  
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1-JUN-89: EX-00019, PAGE 18 OF 83

Mr. W. John Arthur, III, DOE Project Manager  
WIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

Dear Mr. Arthur:

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*Steven Hale*  
Signature  
Steven Hale  
Print Name  
8/2/89  
Date

4100 E - 280N  
Address  
Ridgely  
City  
Idaho  
State  
8-3442-  
ZIP

1-1

06/01/89  
Page 1 of 1

1-JUN-89: EX-00019, PAGE 19 OF 83

Mr. W. John Arthur, III, DOE Project Manager  
WIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

Dear Mr. Arthur:

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*Michael J. Long*  
Signature  
Michael J. Long  
Print Name  
5-23-89  
Date

320 S. Conaway Ave  
Address  
Tulsa  
City  
Idaho  
State  
83401  
ZIP

1-1

06/01/89  
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1--Jun-89: EX-00019, PAGE 20 OF 83

Mr. W. John Arthur, III, DOE Project Manager  
WIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

Dear Mr. Arthur:

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*Laura L. Burgess*  
Signature  
P.O. Box 822  
Address  
*Joda*  
City  
*Texas*  
State  
*5/03/89*  
Date  
*83287*  
ZIP

1-1

06/01/89  
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Mr. W. John Arthur, III, DOE Project Manager  
WIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*Charles E. McStyer*  
Signature  
5180 E 145th St  
Address  
*Moody, IA*  
City  
*5-23-89*  
Date  
*53442*  
State  
ZIP

1-1

06/01/89  
Page 1 of 1

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Mr. W. John Arthur, III, DOE Project Manager  
WIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

Dear Mr. Arthur:

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I sincerely urge your consideration for the above proposed action.

Sincerely,

Signature

Print Name

Date

*W. J. Brady*  
W. J. Brady  
5-23-89  
168 Rosfield  
Albuquerque, N.M. 87101  
City State ZIP

1-1

06/01/89  
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Mr. W. John Arthur, III, DOE Project Manager  
WIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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I sincerely urge your consideration for the above proposed action.

Sincerely,

Signature

Print Name

Date

*Daniel Rodriguez*  
Daniel Rodriguez  
5/23/89  
148 W. Corcor  
Tulsa, OK 74101  
City State ZIP

1-1

06/01/89  
Page 1 of 1

1-Jun-89, EX-00019, PAGE 24 OF 83

Mr. W. John Arthur, III, DOE Project Manager  
MIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

Dear Mr. Arthur:

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*C.E. White, Jr*  
Signature C.E. White, Jr Print Name 5/23/89 Date

P.O. Box 50616 Idaho Falls Id. 83405  
Address City State ZIP

1-1

06/01/89  
Page 1 of 1

1-Jun-89, EX-00019, PAGE 25 OF 83

Mr. W. John Arthur, III, DOE Project Manager  
MIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

Dear Mr. Arthur:

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*Timothy J. Jellis*  
Signature Timothy J. Jellis Print Name 5-23-89 Date

460 SYKES Idaho Falls ID 83401  
Address City State ZIP

1-1

06/01/89  
Page 1 of 1

1-Jun-89; EX-00019, PAGE 26 OF 83

Mr. M. John Arthur, III, DOE Project Manager  
MIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

Dear Mr. Arthur:

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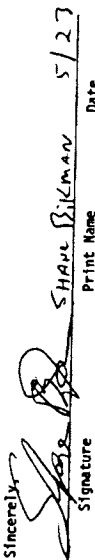
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I sincerely urge your consideration for the above proposed action.

Sincerely,

  
Signature

SHAU BIKMAN  
Print Name

5/27  
Date

178 Gafard L.F. Dr. 8340  
Address  
City State ZIP

1-1

06/01/89  
Page 1 of 1

1-Jun-89; EX-00019, PAGE 27 OF 83

Mr. M. John Arthur, III, DOE Project Manager  
MIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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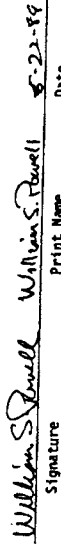
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I sincerely urge your consideration for the above proposed action.

Sincerely,

  
Signature

William S. Powell  
Print Name

8-23-89  
Date

125 Hester Drive  
Address  
City State ZIP  
Folsom, CA 95601

1-1

06/01/89  
Page 1 of 1

1-Jun-89: EX-00019, PAGE 28 OF 83

Mr. W. John Arthur, III, DOE Project Manager  
MIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*Carol Saunders*  
Signature

Date

*1258 Cassia Idaho Falls, ID 83402*  
Address

City

State

ZIP

1-1

06/01/89  
Page 1 of 1

1-Jun-89: EX-00019, PAGE 29 OF 83

Mr. W. John Arthur, III, DOE Project Manager  
MIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*DA Karkov*  
Signature

Date

*1869 Coahuila DR. T. D. Atlix, P.Q.*  
Address

City

State

ZIP

*ID. 83402*

1-1



06/01/89  
Page 1 of 1

1-Jun-89: EX-00019, PAGE 30 OF 83

Mr. W. John Arthur, III, DOE Project Manager  
WIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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I sincerely urge your consideration for the above proposed action.

Sincerely,

  
Signature L. Libers Print Name Date 5/23/89

182 Tracy Ave  
Address City State ZIP  
Fresno CA 93702

1-1

06/01/89  
Page 1 of 1

1-Jun-89: EX-00019, PAGE 31 OF 83

Mr. W. John Arthur, III, DOE Project Manager  
WIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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I sincerely urge your consideration for the above proposed action.

Sincerely,

  
Signature J.L. Burnett Print Name Date 5-89

P.O. Box 244  
Address City State ZIP  
Shelley ID 83274

1-1

06/01/89  
Page 1 of 1  
1-Jun-89: EX-00019, PAGE 32 OF 83

Mr. W. John Arthur, III, DOE Project Manager  
MIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

Dear Mr. Arthur:

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*Dennis Headman* Dennis Headman 5/29/89

Signature Print Name Date  
996 S. Emerald Idaho Falls ID 83404  
Address City State ZIP

06/01/89  
Page 1 of 1  
1-Jun-89: EX-00019, PAGE 33 OF 83

Mr. W. John Arthur, III, DOE Project Manager  
MIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*Charles E. Hoop* Charles E. Hoop 5-24-89

Signature Print Name Date  
307 W 20 Idaho Falls ID 83402  
Address City State ZIP

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Mr. W. John Arthur, III, DOE Project Manager  
WIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

Dear Mr. Arthur:

As a citizen of the United States of America, in response to the Waste Isolation Pilot Plant-Supplement to the Supplement Environmental Impact Statement (WIPP-SEIS) public hearing comment, I submit my statement in support of the WIPP Project (located at Carlsbad, New Mexico); a DOE Project established under Public Law 96-164 to demonstrate safe permanent disposal for radioactive waste generated by DOE national defense related facilities.


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I sincerely urge your consideration for the above proposed action.

Sincerely,

  
Signature

Alex L. Lee  
Print Name

5-23-89  
Date

1232 ND Street NW  
Address

TDMM City ID 28102  
City State ZIP

06/01/89  
Page 1 of 1

1-Jun-89; EX-00019, PAGE 35 OF 83

Mr. W. John Arthur, III, DOE Project Manager  
WIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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I sincerely urge your consideration for the above proposed action.

Sincerely,

  
Signature

T. Speck  
Print Name

5-23-89  
Date

1320 Tappan Ct  
Address

EF City ID 87604  
City State ZIP

06/01/89  
Page 1 of 1

1-JUN-89: EX-00019, PAGE 36 OF 83

Mr. W. John Arthur, III, DOE Project Manager  
WIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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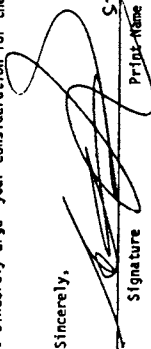
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I sincerely urge your consideration for the above proposed action.

Sincerely,

  
Signature STEVEN A. KOVT Date MAY 22/89

2740 MIDWAY City ALBUQU State NM ZIP 87406

1-1

06/01/89  
Page 1 of 1

1-JUN-89: EX-00019, PAGE 37 OF 83

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WIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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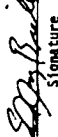
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I sincerely urge your consideration for the above proposed action.

Sincerely,

  
Signature EA Jay Beauville Date 5/23/89

1920 S 17 City ALBUQU State NM ZIP 87404

1-1

06/01/89  
Page 1 of 1

1-Jun-89: EX-00019, PAGE 38 OF 83

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WIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*John Arthur, III*  
Signature

Print Name

Date

287 5th  
Address

City

State

ZIP

1-1

06/01/89  
Page 1 of 1

1-Jun-89: EX-00019, PAGE 39 OF 83

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WIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*John Arthur, III*  
Signature

Print Name

Date

287 5th  
Address

City

State

ZIP

1-1

06/01/89  
Page 1 of 1  
1-Jun-89: EX-00019, PAGE 40 OF 83

Mr. W. John Arthur, III, DOE Project Manager  
MIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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I sincerely urge your consideration for the above proposed action.

Sincerely,  
*John F. Keating*  
Signature  
JOHN F. KEATING  
Print Name  
5/23/89  
Date  
2323 Wapiti off  
Address  
10006 Fall - H  
City  
83402  
State  
ZIP

1-1

06/01/89  
Page 1 of 1  
1-Jun-89: EX-00019, PAGE 41 OF 83

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MIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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I sincerely urge your consideration for the above proposed action.

Sincerely,  
*Bonnie D. Sermin*  
Signature  
Bonnie D. Sermin  
Print Name  
5-23-89  
Date  
794 Dickson Idaho Falls ID  
Address  
City  
State  
ZIP  
83402

1-1

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Page 1 of 1

1-Jun-89, EX-00019, PAGE 42 OF 83

Mr. W. John Arthur, III, DOE Project Manager  
WIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*Paul Orsopoulos*  
Signature

Print Name

Date

1719 Shasta St, Idaho Falls ID 83402  
Address

City

State

ZIP

1-1

06/01/89  
Page 1 of 1

1-Jun-89, EX-00019, PAGE 43 OF 83

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WIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*R. Scott Adams*  
Signature

Print Name

Date

1635 Terry, Idaho Falls ID 83414  
Address

City

State

ZIP

1-1

06/01/89  
Page 1 of 1  
1-Jun-89: EX-00019, PAGE 44 OF 83

Mr. W. John Arthur, III, DOE Project Manager  
MIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*William Andrew Tolocadaniel*  
Signature

*5/22/89*  
Date

*William Andrew Tolocadaniel*  
Print Name  
*IA* *IA* *8240X*  
City State ZIP  
Address

1-1

06/01/89  
Page 1 of 1  
1-Jun-89: EX-00019, PAGE 45 OF 83

Mr. W. John Arthur, III, DOE Project Manager  
MIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*Robert W. Barnes*  
Signature

*5/20/89*  
Date

*341 Washington*  
Address  
*Idaho Falls, ID* *83402*  
City State ZIP

1-1



06/01/89  
Page 1 of 1

1-Jun-89; EX-00019, PAGE 46 OF 83

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WIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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I sincerely urge your consideration for the above proposed action.

Sincerely,

  
Signature

Robert D. Bernick  
Print Name

5-23-89  
Date

4300 Alameda  
Address

Albuquerque, NM  
City

State

87306  
ZIP

1-1

1-1

06/01/89  
Page 1 of 1

1-Jun-89; EX-00019, PAGE 47 OF 83

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WIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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I sincerely urge your consideration for the above proposed action.

Sincerely,

  
Signature

Robert D. Bernick  
Print Name

5/23/89  
Date

551 N. 2850 E.  
Address

City

State

83444  
ZIP

06/01/89  
Page 1 of 1

1-Jun-89; EX-00019, PAGE 48 OF 83

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MIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*[Signature]*  
Signature  
C. Rex Seaman  
Print Name  
111  
City  
ID. 80402  
State  
ZIP

1-1

06/01/89  
Page 1 of 1

1-Jun-89; EX-00019, PAGE 49 OF 83

Mr. W. John Arthur, III, DOE Project Manager  
MIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*[Signature]*  
Signature  
Margaret Pood MARGARET PASCHE  
Print Name  
5-23-89  
Date  
15th Peloton Dr. Idaho Falls ID 83403  
Address  
City  
State  
ZIP

1-1

06/01/89  
Page 1 of 1

1-Jun-89, EX-00019, PAGE 50 OF 83

Mr. M. John Arthur, III, DOE Project Manager  
MIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*Gregory Hoerton*  
Signature

Print Name

Date

1090 OLYMPIA ID 83402

Address

City

State

ZIP

06/01/89  
Page 1 of 1

1-Jun-89, EX-00019, PAGE 51 OF 83

Mr. M. John Arthur, III, DOE Project Manager  
MIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*Scott Mix*  
Signature

Print Name

Date

4825 GEORGETOWN LAKE ID 83401

Address

City

State

ZIP

06/01/89  
Page 1 of 1

1-Jun-89s EX-00019, PAGE 52 OF 83

Mr. W. John Arthur, III, DOE Project Manager  
WIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*Nile M. Briggs*  
Signature Nile M. Briggs Date 5-23-89

796 Memorial I.F. ID 83446  
Address, City State ZIP

06/01/89  
Page 1 of 1

1-Jun-89s EX-00019, PAGE 53 OF 83

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WIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*Frank M. Wright*  
Signature Frank M. Wright Date 5-23-89

234D RICHES I.F. ID 83446  
Address, City State ZIP

1-Jun-89: EX-00019, PAGE 54 OF 83

Mr. M. John Arthur, III, DOE Project Manager  
WIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*James L. Brown* Signature  
*James L. Brown* Print Name  
*5/23/89* Date  
*1022 Maymont St* Address  
*Edinburg, TX* City  
*TX* State  
*78540* ZIP

1-1

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1-Jun-89: EX-00019, PAGE 55 OF 83

Mr. M. John Arthur, III, DOE Project Manager  
WIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

Dear Mr. Arthur:

As a citizen of the United States of America, in response to the Waste Isolation Pilot Plant-Supplement to the Supplement Environmental Impact Statement (WIPP-SEIS) public hearing comment, I submit my statement in support of the WIPP Project (located at Carlsbad, New Mexico); a DOE Project established under Public Law 96-164 to demonstrate safe permanent disposal for radioactive waste generated by DOE national defense related facilities.

The WIPP-SEIS examines three action alternatives. My support is for DOE's proposed action:

"Proceed with a phased approach to determine whether WIPP should become a repository for the disposal of transuranic waste."

I further believe that the WIPP will allow the removal of temporary waste storage at the various sites. Furthermore, I understand that to date there are no scientific reason or evidence made known to DOE to halt their plan to place-transuranic (TRU) waste at the WIPP. The systematic planned approach to responsibly deploy the WIPP is commendable.

I sincerely urge your consideration for the above proposed action.

Sincerely,

*Gary H. Harrison* Signature  
*Gary Harrison* Print Name  
*5-23-89* Date  
*1022 Maymont St* Address  
*Edinburg, TX* City  
*TX* State  
*78540* ZIP

1-1

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Mr. W. John Arthur, III, DOE Project Manager  
MIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

Dear Mr. Arthur:

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*Ruth Edkins*  
Signature  
1537 Felton  
Address  
Ruth Edkins  
Print Name  
5/23/89  
Date  
24  
City  
83406  
State  
ZIP

1-1

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1--Jun-89: EX-00019, PAGE 57 OF 83

Mr. W. John Arthur, III, DOE Project Manager  
MIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*John W. Harris*  
Signature  
1045 York Dr  
Address  
John W. Harris  
Print Name  
5-23-89  
Date  
24  
City  
State  
ZIP

1-1

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1-JUN-89: EX-00019, PAGE 58 OF 83

Mr. W. John Arthur, III, DOE Project Manager  
MIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*Tamara Wood*  
Signature

Print Name

Date

*Tamara Wood 5/27/89*

*1601 Charlene*  
Address

City

State

ZIP

*Idaho Falls ID 83402*

1-1

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1-JUN-89: EX-00019, PAGE 59 OF 83

Mr. W. John Arthur, III, DOE Project Manager  
MIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*Jon Hubbard*  
Signature

Print Name

Date

*Jon Hubbard 5/27/89*

*1601 Charlene St*  
Address

City

State

ZIP

*Idaho Falls ID 83402*

1-1

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1-Jun-89: EX-00019, PAGE 60 OF 83

Mr. W. John Arthur, III, DOE Project Manager  
MIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*John Arthur*  
Signature

*John Arthur*  
Print Name

Date

*5/23/89*

*586 Naches*  
Address

City

State

ZIP

*70 83401*

06/01/89  
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1-Jun-89: EX-00019, PAGE 61 OF 83

Mr. W. John Arthur, III, DOE Project Manager  
MIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*Jerry Larsen*  
Signature

*JERRY LARSEN*  
Print Name

Date

*5-23-89*

*222 C. Wick St*  
Address

City

State

ZIP

*DL 83401*



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1-Jun-89: EX-00019, PAGE 62 OF 83

Mr. W. John Arthur, III, DOE Project Manager  
WIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*Linda Waters*  
Linda Waters  
Signature  
5-23-89  
Date  
Bible, N. M.  
4763  
City  
State  
83406  
ZIP

1-1

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1-Jun-89: EX-00019, PAGE 63 OF 83

Mr. W. John Arthur, III, DOE Project Manager  
WIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*Susan Kaiser*  
Susan Kaiser  
Signature  
5/23/89  
Date  
337 E 15th St  
City  
State  
83404  
ZIP

1-1

06/01/89  
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Mr. M. John Arthur, III, DOE Project Manager  
WIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*Sharon A. Hancock*  
Signature

Sharon A. Hancock  
Print Name

5-23-89  
Date

3061 So Blvd  
Address

Las Alamos  
City

NM  
State

87002  
ZIP

1-1

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1-JUN-89, EX-00019, PAGE 65 OF 83

Mr. M. John Arthur, III, DOE Project Manager  
WIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*Mary Ann Allen*  
Signature

Mary Ann Allen  
Print Name

5-23-89  
Date

2792 Avenida Way  
Address

Las Alamos  
City

NM  
State

87002  
ZIP

1-1

06/01/89  
Page 1 of 1

1-Jun-89: EX-00019, PAGE 66 OF 83

Mr. W. John Arthur, III, DOE Project Manager  
MIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*Brendy Brannon*  
Signature

Print Name

Date

*Brendy Brannon* *5-22-89*

Signature

Print Name

Date

*1225 Bear* *Albuquerque* *NM* *83402*

Address

City

State

ZIP

06/01/89  
Page 1 of 1

1-Jun-89: EX-00019, PAGE 67 OF 83

Mr. W. John Arthur, III, DOE Project Manager  
MIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*Shawne L. Runkle*  
Signature

Print Name

Date

*Shawne L. Runkle* *5/23/89*

Signature

Print Name

Date

*7855 N Arroyo Rd* *Johns Falls* *Idaho* *83401*

Address

City

State

ZIP

06/01/89  
Page 1 of 1

1-Jun-89: EX-00019, PAGE 68 OF 83

Mr. W. John Arthur, III, DOE Project Manager  
WIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*Leanna Peterson*  
Signature *Leanna Peterson* Print Name *5/03/89* Date

*960 S.W. J.F. Dr*  
Address *IDA 83101* City *IDA* State *IDA* ZIP

06/01/89  
Page 1 of 1

1-Jun-89: EX-00019, PAGE 69 OF 83

Mr. W. John Arthur, III, DOE Project Manager  
WIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*Ray Hauninger*  
Signature *Ray Hauninger* Print Name *5/20/89* Date

*306 12th St NE #4*  
Address *4.E* City *IDA* State *IDA* ZIP *83404*

06/01/89  
Page 1 of 1

1-Jun-89: EX-00019, PAGE 70 OF 83

Mr. W. John Arthur, III, DOE Project Manager  
MIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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I sincerely urge your consideration for the above proposed action.

Sincerely,

Teresa O'Clair Teresa O'Clair May 23, 1989  
Signature Print Name Date

115 Irving Tule Falls ID 83401  
Address City State ZIP

06/01/89  
Page 1 of 1

1-Jun-89: EX-00019, PAGE 71 OF 83

Mr. W. John Arthur, III, DOE Project Manager  
MIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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I sincerely urge your consideration for the above proposed action.

Sincerely,

R.J. Bolton R.J. Bolton 5-22-89  
Signature Print Name Date

2194 Bunko Falls ID 83402  
Address City State ZIP

06/01/89  
Page 1 of 1

1-Jun-89; EX-00019, PAGE 72 OF 83

Mr. M. John Arthur, III, DOE Project Manager  
MIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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I sincerely urge your consideration for the above proposed action.

Sincerely, Alma King Print Name  
Alma King Signature  
1896 E 114 #6 City IDAHO FALLS ID State 83404 ZIP

06/01/89  
Page 1 of 1

1-Jun-89; EX-00019, PAGE 73 OF 83

Mr. M. John Arthur, III, DOE Project Manager  
MIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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I sincerely urge your consideration for the above proposed action.

Sincerely, D. Gary Peterson Print Name  
D. Gary Peterson Signature  
MAY 23, 1989 Date  
1804 CAMROSE City IDAHO State 83402 ZIP

06/01/89  
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1-Jun-89: EX-00019, PAGE 74 OF 83

Mr. M. John Arthur, III, DOE Project Manager  
WIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*Paul L. Gervand*  
Signature

Print Name

Date

178 E 16th  
Address

City

State

ZIP

1-1

06/01/89  
Page 1 of 1

1-Jun-89: EX-00019, PAGE 75 OF 83

Mr. M. John Arthur, III, DOE Project Manager  
WIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*Scott W. Lance*  
Signature

Print Name

Date

P.O. Box 50482  
Address

City

State

ZIP

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06/01/89  
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1-Jun-89: EX-00019, PAGE 78 OF 83

Mr. W. John Arthur, III, DOE Project Manager  
MIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

Dear Mr. Arthur:

As a citizen of the United States of America, in response to the Waste Isolation Pilot Plant-Supplement to the Supplement Environmental Impact Statement (MIPP-SEIS) public hearing comment, I submit my statement in support of the MIPP Project (located at Carlsbad, New Mexico): a DOE Project established under Public Law 96-164 to demonstrate safe permanent disposal for radioactive waste generated by DOE national defense related facilities.

The MIPP-SEIS examines three action alternatives. My support is for DOE's proposed action:

"Proceed with a phased approach to determine whether MIPP should become a repository for the disposal of transuranic waste."

I further believe that the MIPP will allow the removal of temporary waste storage at the various sites. Furthermore, I understand that to date there are no scientific reason or evidence made known to DOE to halt their plan to place transuranic (TRU) waste at the MIPP. The systematic planned approach to responsibly deploy the MIPP is commendable.

I sincerely urge your consideration for the above proposed action.

Sincerely,

*James H. Thorson*  
Signature

Print Name

Date

JAMES H. THORSON 5-27-89

1220 1<sup>st</sup> St. CORRAL BLVD ID 83401  
Address

City

State

ZIP

1-1

06/01/89  
Page 1 of 1

1-Jun-89: EX-00019, PAGE 79 OF 83

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MIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*Margaret M. O'Flynn*  
Signature

Print Name

Date

MARGARET M. O'FLYNN 5-23-89

2910 SUNNYBROOK LANE IDAHO FALLS ID 83404  
Address

City

State

ZIP

1-1

Mr. W. John Arthur, III, DOE Project Manager  
WIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*Edna L. Romano* Print Name  
Date 5/23/89

P.O. Box 504911, Irbah Falls, Ia. 51405-0498  
Address, City State ZIP

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WIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*A.R. Nielson* Print Name  
Date 5/23/89

229 HENRYHORN IOWA FALLS, IA 50409  
Address, City State ZIP

06/01/89  
Page 1 of 1

1-Jun-89: EX-00019, PAGE 82 OF 83

Mr. V. John Arthur, III, DOE Project Manager  
WIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*Clyde F. Bestenher*  
Signature  
Clyde F. Bestenher 5-23-89  
Date

Print Name

Date

12797 N 95th E  
Address  
Schofield, Idh 83441  
City State ZIP

1-1

06/01/89  
Page 1 of 1

1-Jun-89: EX-00019, PAGE 83 OF 83

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WIPP-SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87116

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I sincerely urge your consideration for the above proposed action.

Sincerely,

*Constance Ann Follett*  
Signature  
Constance Ann Follett  
Date

Print Name

Date

12797 N 95th E  
Address  
Schofield, Idh 83441  
City State ZIP

1-1

1-Jun-89: EX-00020, PAGE 1 OF 1

MY NAME IS CLIFFORD A. BRADY JR.. I LIVE AT 1668 GARFIELD ST. IN IDAHO FALLS, IDAHO. I AM THE OWNER OF BRADY'S - A HOME SPECIALTY DEPARTMENT STORE LOCATED IN IDAHO FALLS. I am a member of Citizens for Mr INEL.

FOR MANY YEARS NOW, WE HAVE HEARD FROM ANTI-NUCLEAR GROUPS THAT THEY WANT THE WASTE AT THE INEL MOVED TO A PERMANENT STORAGE PLACE. ALSO, MANY PRO-NUCLEAR GROUPS HAVE STRONGLY ENDORSED THE REMOVAL AND PERMANENT STORAGE OF INEL WASTE. WE SUPPORT PROCEEDING WITH A PHASED APPROACH AS PROPOSED BY THE DOE, TO DETERMINE WHETHER WIPP SHOULD BECOME A REPOSITORY FOR THE DISPOSAL OF TRANSURANIC WASTE. WE BELIEVE THIS WILL ALSO ALLOW THE REMOVAL OF TEMPORARY WASTE STORAGE AT VARIOUS SITES THROUGHOUT THE COUNTRY. WE SEE NO REASON WHY THE DOE SHOULD HALT THEIR PLAN TO PLACE TRANSURANIC WASTE AT THE WIPP. IT'S NICE, THAT FINALLY, WE CAN AGREE WITH SOME OF THE ANTI-NUCLEAR PEOPLE, JOIN WITH THEM AND STATE THAT WE SHOULD PROCEED WITH A PERMANENT WASTE STORAGE PROGRAM AT THE WIPP PROJECT AT CARLSBAD, NEW MEXICO.

1-Jun-89: EX-00021, PAGE 1 OF 4

SES Testimony of  
Jan Carlsson  
Caché Valley Peacemakers  
91 East 3rd North  
Smithfield, Utah 84335

The Department of Energy relates continued operation of weapons facilities and waste storage and transportation to national security issues without ever considering that the long term health and safety of American citizens is in fact a much bigger nat'l security issue.

For over 40 years the American defense and nuclear establishments have been willing to compromise the lives and health of people in pursuit of a cold war whose only benefit has been to line their own pockets and fill the very deep pockets of the military-industrial complex. American values which the defense establishment pretends to hold dear have meanwhile been degraded in the name of national security.

The issue of how to handle military nuclear waste cannot be separated from the way our government has viewed national security. The peculiar form of tunnel vision endemic to military bureaucracies everywhere has resulted in a world where everyone's security has become endangered beyond the ability to imagine only 50 years ago. The possibility of nuclear holocaust and terrorism has been joined by the certainty that millions of people are endangered by the production of nuclear weapons regardless of whether or not they are ever again used in a war.

So our first consideration should be directed toward thinking of ways to end the arms race and stop testing in a world in which our major cold war enemies have already declared a truce. We do not need any more bombs, any more plutonium, or any more nuclear madness.

Unfortunately, we do need storage facilities for the enormous amounts of lethal waste already created. However, if the development of new storage areas has the effect of making the arms race easier to pursue, if it enables the Defense Dept. to plan the production of 50,000 more useless warheads and extend the cold war from the planet to outer space, then our responsibility as citizens can only be to Just Say No. Let us share with our government the responsibility for dealing with the waste already produced but not the continuing stupidity of participating in the production of more of it. To do otherwise will put not only a nation at risk, but probably also at risk the continuation of human history.

In terms of the waste already situated at the 10 sites around the country, what can be done to deal with its containment or disposal in such a way as to minimize the risks to Americans and their environment at the least possible financial expense? This is the issue addressed by the DOE's EIS, and we need to question whether or not its solution to develop a Waste Isolation Pilot Plant in New Mexico is the best solution for everyone

concerned. We need to know whether or not there is an acceptable tradeoff between the lives and health of people near the 10 nuclear facilities where the waste is presently stored and that of people in an expanded area involving 23 states. Does the added risk of transportation accidents resulting in a further spread of radioactive contamination plus possible leaks from the proposed storage facility in New Mexico justify changing current nuclear storage practices?

Unfortunately, the Dept. of Energy has offered no persuasive argument in its supplemental EIS to indicate that its Waste Isolation Pilot Project offers a better storage alternative to our present one. Indeed, given the current state of the art, it cannot do so. The enormous number of variables in conjunction with what DOE calls "lack of analytical data" makes any reasonable determination between the alternatives very difficult, perhaps impossible.

If we use history over the last 40-plus years as a guide, however, there are some reasonable conclusions which may be drawn, because there has been one repeated event during this period which indicates a predictable trend in the future. What we have repeatedly observed is a government which routinely and as a matter of policy has lied to its citizens about specific threats to their lives and health posed by the nuclear establishment. Of course, our government has lied about a lot of things, but the degree of shamelessness it has reserved for nuclear issues and the arms race in general is something very special and very dangerous. When many of us listen to a DOE statement or read an EIS we know that we must use special caution.

The supplemental EIS contradicts itself in numerous places. For example, it assumes "a major breach of any of the three Type B TRUPACT transporters that compose a trailer-load CH TRU shipment is not credible," and then in the next sentence informs us that "Loss of packaging containment will result in .0002 fraction of the radioactive waste material in the three TRUPACTS being released to the environment in a respirable form." (D-87). In another section dealing with transportation accidents we are told about the extensive training expected to be given to personnel involved in waste transport and how that training will minimize occupational exposures during accidents. Then the EIS cautions us that "actual exposures will be dependent on the exact nature of the accident and cannot be readily estimated." (5-19) If exposures for personnel at an accident site cannot be readily estimated, why should we who are the other potential victims along projected transportation corridors, accept DOE's risk assessments concerning our safety? One does not need a very

2.3.1-2  
3.1-8  
5.2-1  
5.2-2  
5.3-1

3.2-1

7.3.5.1-31  
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3.1-2  
7.3.5-1  
7.142

Long memory to recall all the government assurances that a Three-Mile Island or a Chernobyl were terribly unlikely, not to mention all the remedies that were supposedly available to minimize the consequences of a major oil spill by a tanker which could be navigated through Prince William Sound by a child, if we are to believe the Coast Guard.

What EIS's never tell us about are all the varieties of human error and mechanical failures and nasty little surprises to which we are prone. The Dept. of Energy would like to treat all the variables involved in the manufacture, storage and transportation of nuclear materials as varieties of fungible assets, simple to quantify. But human behavior and error cannot be quantified, and they always surprise us. When dealing with materials as lethal as transuranic wastes, some with extremely long half-lives, in contact with all the unpredictable varieties of human error, it will be safest, in the long run, to limit the variables as much as possible. To store nuclear wastes in 10 sites poses unacceptable risks to everyone downwind from those sites. Ask anyone who was downwind of INEL in 1978 when 8000 curies of radioactive iodine, krypton, and xenon was released into the atmosphere while the plant supervisor was busy watching the Yankee-Dodger game on his portable TV. Or ask the people downwind of the plutonium emissions at Rocky Flats which at one point lacked any reliable equipment capable of monitoring radiation releases. When they were installed a week after a major fire, emissions registered 16,000 times the permissible level. Meanwhile the manager of the Rocky Flats AEC office told the media that "the spread was so slight it could not immediately be distinguished from radioactive background at the plant." (Killing Our Own, p. 169 - Denver Post, 1987) We can expect more of the same. The evolution of human intelligence and moral sensibility is much slower than the average radioactive emission.

I do not know whether or not we will be able to prevent DOE from opening the Waste Isolation Pilot Project in Sept. of this year. If it does open, I believe those of us who live along the waste transportation corridors must, at a minimum, demand certain precautions not mentioned in the supplemental EIS. First, since the defective (and redesign) TRUPACT-II containers have not yet been certified by the NRC (Nuclear Regulatory Commission), no CH-TRU (contact-handled TRU (transuranic waste) should be shipped unless such certification has been received. RH-TRU (remote-handled TRU waste) cannot even be considered since its packaging hasn't even been fully developed. If it is developed, rigorous tests by agencies or individuals not dependent on DOE or other government funds must be carried out.

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Although the supplemental EIS provides for trucks with two-way radios and a computerized satellite tracking system, this will not provide sufficient protection in case of a major accident. The governor and all local emergency authorities in each state along transportation routes will need a complete and detailed manifest of all materials in each truck with instructions as to how to respond to each variety of emergency which might occur for specific shipments. Additionally, every shipment must be accompanied by an emergency vehicle in the rear with personnel fully trained to be able to respond to whatever specific emergencies might result from an accident to each particular shipment. These personnel must be equipped with all materials necessary to deal with any accident. Another warning vehicle in front of each shipment truck should be in front at all times as an additional accident buffer.

Finally, each state should be required to implement plans for a hasty evacuation of any threatened population along transportation routes, should an accident occur. These state plans should be assessed in terms of effectiveness, filed and in place before any opening of an additional storage facility is finalized.

Every resident near or downwind of all transportation routes should be notified and educated about the possible risks to his or her health before the opening of another facility. Public education regarding nuclear hazards has never been a government priority in the past. Such education is long overdue.

Absent these minimal government precautions, no action should be taken to open the Waste Isolation Pilot Project in New Mexico or anywhere else. Even assuming these measures, a real need for this project has not been demonstrated in either of the environmental impact statements.

We need to stop producing nuclear waste, and we must find a safe way to store what has already been made. However, this project does not come close to being the answer.

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7.3.2.1-3

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MIPP DRAFT SEIS  
PUBLIC HEARINGS  
June 1, 1989

TESTIMONY BY JANICE L. LANDON  
535 Teeple's Drive  
Idaho Falls, Idaho 83401

I manage the In Situ Vitrification Waste Stabilization Demonstration at the Idaho National Engineering Laboratory. In this position, I am actively involved in the management of transuranic waste forms buried in the ground.

I have evaluated the following items addressed in the Supplement to the Environmental Impact Statement: Changes in waste sources, changes in the volume of the TRU wastes, changes in the composition of the TRU-waste radioactivity inventory, consideration of the hazardous chemicals in the TRU waste, changes in the modes of transportation, and changes in waste packages.

New information pertaining to the geology and hydrology at the MIPP site are adequately addressed in the Supplement, however the unresolved regulatory compliance issues concern me. Uncertainties in the regulatory framework are causing technically sound waste management projects all over the country from proceeding at the pace desired by the public. We need to demand resolution of these regulatory issues by the policy makers in order to clean up waste sites and build new facilities for state of the art management of previously disposed waste.

Because of the potential uncertainties associated with extrapolating lab test data to full scale, the room scale tests with actual transuranic waste will provide the most complete analysis for assessing the performance of the facility. Therefore, after thorough evaluation of the alternatives, I support the DOE proposed action of proceeding with a phased approach to determine whether MIPP should become a repository for the permanent disposal of TRU waste.

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MYRON F. MCMILLAN  
149 APPALOOSA  
POCATELLO, IDAHO  
83401

I appreciate this opportunity to take part in the public hearings on the Supplement to the Environmental Impact Statement for the Waste Isolation Pilot Plant (WIPP).

As long as there are operations which generate transuranic waste, it seems only prudent that long term permanent storage for these waste be developed. Storage which will afford lasting protection to the public, including present and future generations, and the environment. The Department of Energy (DOE) has spent millions of dollars in research and development to accomplish these goals. I support this effort with my tax dollars and I support the phased approach to determine whether WIPP should become a repository for the disposal of transuranic waste, alternative number 1. I encourage the DOE to move ahead and complete these test so that interim waste stored in Idaho will eventually find a permanent home.

I also support the transportation of these materials by truck. During the last 46 years thousands of radioactive shipments covering millions of miles have been accomplished with minimal impact to either the people or the environment. Prior to certification The Nuclear Regulatory Commission (NRC) requires that shipping containers withstand catastrophic events and still provide containment. There is always the element of risk when transporting anything on the highways, however, with the use of the TRUPACT-II the risk is acceptable.

To avoid risk is to avoid progress.

WIPP Environmental Statement  
Pocatello, Idaho  
June 1, 1989

I would like to thank you for the opportunity to express my thoughts concerning the Waste Isolation Pilot Project. Let me start by saying I strongly support the WIPP project and suggested that the project continue forward as outlined in the Supplement to the Environmental Impact Statement (SEIS), Alternative 1, the phased approach for storage of waste. As an Idahoan I think it totally unacceptable not to open the Waste Isolation Pilot Project and provide safe long term storage of defence nuclear wastes.

Let us remember that WIPP is a pilot project, during the first five years all material disposed of can be recovered if problems exist. WIPP will allow the collection of large scale data for comparison with existing laboratory data. These comparisons will provide the needed verification of environmental predictions and site modeling. If we do not proceed with WIPP it will be necessary to expend approximately 400 million dollars to build the necessary experimental facilities to take the place of WIPP. The process used at WIPP is not new, it is used in Europe for the safe disposal of nuclear wastes. Let's begin to solve the nuclear waste problems that face this country, if the waste isolation process used at WIPP has problems let's uncover and solve them.

I would remind you that several pilot projects have been used in the nuclear industry. Some have pointed out problems that have been solved and processes matured. Other projects have provided outstanding technologies requiring only minor adjustments as they are brought to full scale. An example of a pilot project that has provided many benefits is the calcining of wastes at the Chemical Processing Plant at INEL. That

process has provide a safe stable means for reducing and storing waste. Idaho is not facing as severe a waste handling problem and impacts to the environment that face other DOE sites, such as Hanford and Savannah River, due in large part to the calcining process.

Shipment of the waste should not concern the public, either. The TRUPACT-II containers have been tested for compliance with Nuclear Regulatory Commission standards for container integrity. These containers can withstand being dropped from 30 feet, punctured by a blunted spike, and fires with temperatures to 1475°F for 30 min. These conditions are more severe than any that might be experienced during a shipping accident. The use of a single shipper with prescribed maintenance and operation of the truck and driver training and qualification also added to the safe shipment of transuranic wastes from the generating site to New Mexico.

The Federal Government continues to invest tax payer dollars in projects to further the nations energy and defense needs only to abandon those investments. An example is the Clinch River Breeder Reactor in which millions of dollars were invested for which the tax payer did not received a single dollar of return. There are many other examples of government facilities which once started or built that go unused.

The WIPP project has been designed for the safe, long term storage of transuranic nuclear wastes. The taxes payers have invested 800 million dollars in establishing WIPP. Now is the time to proceed with the test phase of the WIPP project, let's gather the data so that informed decisions can be made in the future.

Once again I thank you for the time allowed for expression of my views.

Philip Wheatley  
Idaho Falls, Idaho

WIPP HEARING PRESENTATION  
June 1, 1989

By  
Doug Mohr  
2295 Highway  
Idaho Falls, Idaho 83401

In 1975 the Carlsbad Site was selected as the right location for a facility in the United States to dispose of transuranic waste material. Because salt formations are found in areas of geologic stability, they demonstrate the absence of flowing water, are easy to mine, and have good thermal and plastic healing qualities. The Carlsbad Site, along with other similar facilities around the world, is located in such a geologically stable area.

After fourteen years of research and construction costing the U.S. taxpayer more than a billion dollars, the WIPP facility is ready to be opened for a five-year demonstration period.

Extensive data addressing the safe operation of WIPP from environmental, personal protection, and technical viewpoints are available. The U.S. needs to remove its TRU defense generated waste material from temporary storage facilities to a safer permanent isolation. The opening of the WIPP facility will move this process forward and provide valuable data leading to the future disposal of all classes of both defense and commercial nuclear waste materials.

Continued unnecessary delays of the opening of WIPP are very expensive to the taxpayer, delay our long-range goal for permanent disposal of all radioactive waste materials in the U.S., and cause an ever-increasing stockpiling of undesirable temporary storage buildup.



MIPP Hearing Presentation  
Page 2

Nuclear waste materials from any source, whether they are defense related, the power production industry, medical application, or any other generator are not pleasant subjects to deal with. The reality of the situation, however, is that we in the U.S. along with the rest of the world now live, and will continue to live, in the future; in a world where the splitting of the atom will be a part of our lives. If we are to continue to maintain a strong defense, provide energy resources, and generally maintain our standard of living, we must deal with the reality of the nuclear waste issue. The MIPP facility is the right place to begin the process of permanent storage of nuclear waste materials in the U.S., and 1989 is the right time.

The concept of using a salt formation for the disposal of radioactive waste materials was not a new idea in 1975 when the MIPP location was identified. The Asse salt mine in Germany served as a prototype repository for low- and intermediate-level radioactive wastes from 1967 to 1978. About 125,000 drums with low-level and about 1300 drums with intermediate-level wastes were successfully disposed of during this period.

Extensive test data related to underground salt formation storage has been gathered during these years of testing and operations at Asse. Data gathered jointly by the Federal Republic of Germany, the United States, and other countries dealing with the issues of storage of all classes of radioactive wastes (LL, TRU, and vitrified high-level wastes from reprocessing) provide extensive positive reassurance as to the safety of these processes in a salt formation geologic environment such as Asse or MIPP.

The proper course of action is to proceed with the proposed recommendation of the SEIS to open the MIPP facility for a five-year demonstration period. During this five-year period, additional data will be gathered to reinforce the information we already have concerning the safety and reliability of the MIPP facility. Successful operation of MIPP will not only resolve near-term defense TRU waste concerns, but will likely provide extremely important prototype information which will contribute to resolving the long-term problem of permanent disposal of all classes of nuclear waste material.

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TESTIMONY OF RICHARD E. RICE  
PUBLIC HEARING FOR THE  
WASTE ISOLATION PILOT PLANT SUPPLEMENTAL  
ENVIRONMENTAL IMPACT STATEMENT (SEIS)  
POCATELLO, IDAHO JUNE 1, 1989

Good Afternoon! I am Richard Rice, from Idaho Falls, Idaho. I have been an employee of the Idaho National Engineering Laboratory for 15 years and am well informed technically on the issues surrounding the Waste Isolation Pilot Plant. However, my appearance today is not as a paid INEL employee, but on my own time as a concerned private citizen.

In providing comments relative to the MIPP, it is important to note the purpose of these proceedings. This is not a contest where those who show up in greater numbers win, or where issues not pertinent to the NEPA process are raised and debated endlessly in order to slow progress. The issue before us is the relative environmental acceptability of the three alternate approaches described in the Supplemental Environmental Impact Statement.

The first alternative is a phased approach to demonstrate the acceptability of MIPP prior to full scale operation. This alternative, recommended by DOE, needs to be measured with respect to the other alternatives and against standards for environmentally acceptable actions. The second alternative to perform limited testing outside of the MIPP only serves to delay progress and passes the final decision off to an undefined future time. The no-action alternative is a default path that leaves an environmentally unacceptable situation for future generations to deal with. We must reject both alternatives. They do not deal directly

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the real problem, which is to resolve the accumulation of defense waste in widely scattered temporary locations.

Transportation safety across our public highways remains the key question in the acceptability of the recommended alternative. I have reviewed DOE's approach and find it to be ultra conservative. Their carefully thought out strategy, which includes standardized routes, satellite monitoring and driver certification will result in a transportation operation that will be far safer than any similar venture. The U. S. Department of Transportation has participated fully in the development of this approach. The Type B TRUPACT-II container to be independently certified by the Nuclear Regulatory Commission will provide an impregnable safety barrier against releases in the unlikely event of a catastrophic vehicle accident. There is no question in my mind that the public and our environment will be well protected during the WIPP project lifetime.

We have before us an opportunity to make a positive decision on a critical issue. DOE has developed an approach to resolve the environmentally degrading buildup of defense waste. The phased plan is prudent, reasonable, progressive, cost effective and most importantly, environmentally sound. I strongly support the approach and recommend we get on with it. We have the people and we have the technology. All we need is the will.

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POCATELLO, IDAHO

JUNE 1, 1989

REMARKS BY CHESTER G. MOTLOCH

*225 River View Drive  
Pocatello, Idaho*

I am Chester G. Motloch, a concerned citizen. I have a bachelors degree in physics from the University of California, a masters degree in physics from Oakland University in Michigan, and have done post graduate work in nuclear engineering and science at Carnegie-Mellon University in Pennsylvania. I was previously the general manager of a nuclear safety analysis group in private industry. I have no vested interest in the outcome of these hearings other than as a private citizen who is concerned for the safety and well being of himself, his family and friends, and current and future generations of people who will inhabit the land we continue to pollute.

I have reviewed a number of documents about the WIPP Supplemental Environmental Impact Statement and fully support the recommendations of the SEIS. All the unresolved technical issues are of minor importance in comparison to the alternative of no action at all. If we do nothing, we end up continuing to potentially jeopardize our biosphere. Certainly, storing our waste two thousand feet below surface in the middle of a two thousand foot thick salt deposit is infinitely better than letting it sit around on the surface.

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Permanent waste disposal activities have been on-going in Europe for some years now. It is my understanding that they have had no significant problems of any kind. This speaks well for the short term; but how about the long term geological picture?

Our best source of information to answer that question is Mother Nature, herself. In a country called Gabon, which is located near the middle of the west coast of Africa, naturally occurring deposits of uranium exist. Through a rare coincidence in nature, these deposits were concentrated enough and other conditions were just right that for a long period of time sustained fission occurred - a natural nuclear reactor.

Investigations reported in Scientific American indicate that the natural reactor operated for hundreds of thousands of years at relatively low power levels. The estimated levels range from about ten to a hundred kilowatts - or about the equivalent of a few hundred light bulbs. But, because the reactor operated for a long time, the total energy released was equivalent to one of our modern large nuclear power plants running at full power for about four years. The same types of radioactive by-products were generated in the natural reactor that concern the nuclear industry today.

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This all occurred many millions of years ago. However, the evidence still remains in terms of the long-lived by-products that have remained in one place for an enormously long time. So, what have been the long-term environmental consequences of all this uncontained radioactive material for these many centuries? Absolutely nothing!

Life in Gabon is as natural and normal as any place else in the world. There are no two headed monsters roaming around. The vegetation and animal life are no different than other geographically similar areas. The radioactivity buried deep within the earth has had no effect on our biosphere.

I started my remarks by saying that I am a concerned citizen. Yes, I am concerned. But, I am not concerned about proceeding with the WIPP activities. However, I am concerned that the WIPP activities will be delayed or stalled indefinitely. One of the biggest problems this country faces is not with the technology for the safe disposal of radioactive waste products. Rather, it is the procrastination of not employing the technology to dispose of them. As I have mentioned, good and proven technology exists, we have the capabilities and expertise to do it. So why are we progressing so painfully slow?

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The first part of the explanation is that a thorough job must be done that is aimed at ensuring an absolutely safe and reliable waste disposal facility. I believe this necessary and time-consuming process has been satisfactorily completed. But, the actions of certain special interest groups have slowed it down unnecessarily and seriously threaten to prolong it indefinitely. These groups have a hidden agenda that is vehemently opposed to anything and everything that is nuclear related. They put everything into one basket and label it BAD. On the one hand they demand that the environment be cleaned up and at the same time they create artificial road blocks that prevent accomplishing the environmental restoration. When they can't win an argument on technical merit, they resort to emotional black mail. Their constant and incessant cries have become a self fulfilling prophesy. They are so blinded by their cause that they have now become part of the problem rather than part of the solution.

In many cases they have succeeded in their campaign to bring the nuclear industry down to its knees. Their tactics include endless petitions, redundant reviews, nuisance litigation, and any and all means to bog down the system. And what is the by-product of all this misdirected activity? It is simply huge penalties on the cost of design, construction and operation of the facilities with little if any benefit to the public. It is cost increases carried by the tax payer - by me and everyone in this room. It is delay after wearisome delay. And to add insult to injury, the same anti-groups who demand the costly reviews and delays are the first and loudest to scream about cost overruns.

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Let's put an end to this internal war that has raged on for more than a decade in this country. Let's not continue to suffer from paralysis by excessive analysis. Let's restore reason and rationality to our actions. Let's start to catch up to the rest of the world and to move forward again by giving a vote of confidence for WIPP.

## COMMENT ON THE WASTE ISOLATION PILOT PLANT EIS SUPPLEMENT

My name is Charles Dobbe and I wish to comment as a private citizen on the options put forth in the SEIS relative to operation of the WIPP facility. I fully support the proposed action outlined in the WIPP SEIS to proceed with a phased approach to determine whether the WIPP should become a repository for the disposal of TRU waste. I believe this is the only viable option to ensure long-term management of TRU waste. The other options spelled out in the SEIS do not address long-term management of TRU waste or DOE commitments made to Idaho to remove TRU waste from the INEL.

As a citizen of southeastern Idaho for 30 years, I find the "no action" alternative described in the SEIS unacceptable due to the potential long-term environmental and radiological impacts of continued TRU waste storage at the INEL. This action would do nothing to further the stated goals of the DOE to provide for long-term safe storage of TRU wastes. It would mean abandoning the years of research and construction costs associated with WIPP. Likewise, the alternative to continue bin-scale and room scale testing at sites other than WIPP only postpones this hearing another five years. Additional testing can not completely answer the current concerns of gas generation, brine inflow and salt deformation pertinent to WIPP TRU waste storage. Having been involved in nuclear safety research for the past 13 years, I know that the only sure way to assess system performance and component interdependence is through full scale testing. Additional bench scale testing will only delay this inevitable conclusion another 5 years at considerable expense to the taxpayer to restart WIPP. This plus the long-term storage concerns relative to potential degradation of TRU waste containers now awaiting shipment from the INEL to WIPP make this plan unacceptable.

After reviewing the WIPP Final EIS and SEIS, I am confident that the program for transporting, storing and monitoring the TRU waste is scientifically sound and radiologically safe. The safety of double-contained type B transportation containers like the TRUPACT-II have been demonstrated by extensive testing and over a decade of use by the commercial nuclear industry. The 5 year storing and monitoring program proposed for initial operation of WIPP provides a technically sound methodology for determining the feasibility of long-term storage at the WIPP site without endangering the environment. The proposed program will allow for verification of the bin-scale and room scale test results performed to date in a full scale environment. The 5-year test plan needs to be completed to demonstrate compliance with EPA regulations. It is unconscionable to believe that above ground interim storage of TRU wastes at sites such as the INEL or Rocky Flats is preferable to storage at the WIPP facility under the guidelines outlined under the program. I strongly urge the DOE to move forward with the proposed phased approach to determine the feasibility of long-term TRU waste storage at WIPP.

Statement presented at public hearing for the Supplement to the Environmental Impact Statement for the Waste Isolation Pilot Plant project.

by Anthony N. Brown

Idaho is a special state to me because I was born here and most of my upbringing occurred here; but it is a special state to all Americans because of the vast spectrum of qualities it holds. We enjoy the ruggedness and scenic beauty of the Frank Church Wilderness, the Craters of the Moon, the Henry's Fork, the Wood River Valley, the Sawtooth Mountains, Mount Borah, and many, many more. At the same time we cohabit with world renowned technological facilities, the Idaho National Engineering Laboratory (INEL). We can't create the opportunity for demonstrating even more advances and beneficial technologies. Many of the world's most brilliantly imaginative minds come from or reside here in Idaho. In the same way, we have minds with different capabilities. Minds which are: ignorant, closed, deceitful, obviously deaf, fatuous, stupidly detrimental, and minds seemingly devoted totally to unproductivity.

Nearly all facets of society are represented in Idaho but the cross-section is not as centrally weighted as might be imagined. From my experience, Idaho has a cross-section weighted much more than normal towards the ends of this spectrum.

The technological group is very 'gungho' in accomplishing their work objectives and in pushing technology further and further ahead. But they are very, very quiet. Many view this silence as ostensibly furtive. I find it to be simply ignominious and ashamed of many of my colleagues. They tend to just "roll" with the punches, figuring to out-last the exuberantly emotional conservatives. These garrulous conservatives are constantly screaming; don't cut trees, don't dam streams, don't build roads, don't mine the mountains, don't produce electricity, don't put radioactive water in the aquifer, don't separate material for bombs, don't store this radioactive waste at the WIPP facility, and on and on, forever. It is so easy to be critical; and even easier to be critical of everything. At least being selectively critical requires some semblance of intelligence and courage.

I feel it is imperative that the conservative end of the spectrum realize that the technological counterbalance is not trying to mar the countenance of Mother Nature. She cannot be circumvented. No matter what we do, Mother Nature always takes over where mankind leaves off and this is truly the essence of the WIPP project. The waste will be stored in a place where Mother Nature will take over and protect us.

I can argue that Idaho needs the WIPP project, and Idaho does, but surely by the end of today you will have heard those arguments enough, if not already enough. The Federal Government has promised to get this waste out of Idaho. Idaho and Governor Andrus have said, "We will not be the recipient of anyone's waste." Did Gov. Andrus stop the waste shipments because he is against DOE nuclear reactors? NO! Did Gov. Andrus stop the waste shipments because Idaho has no more room for transuranic waste? NO! It would be possible to dream up another half-dozen ignorant, banal reasons Gov. Andrus stopped waste shipments, the probable answer to all of them is an emphatic NO! Governor Andrus is adding impetus to completion and utilization of the WIPP facility. He has put Idaho at the front of the nation saying OUR COUNTRY NEEDS A WASTE ISOLATION FACILITY.

WIPP-SEIS DOCUMENT

Comments by

D. LYNN HUMPHRIES  
1754 COTTAGE AVENUE  
POCATELLO, IDAHO 83201

My name is Lynn Humphries and I would like to comment on some of the transportation concerns surrounding the opening of the WIPP Facility.

I have been involved in transportation for over 25 years as a mechanic working in Idaho on heavy trucks and buses. I worked over 8 years for Garrett Freightlines and 3 years for Kenworth Transport Equipment. I am currently employed by EG&G at the Idaho National Engineering Laboratory in Landlord Operations.

When I went to work at the INEL over 5 years ago, I started as a mechanic on their fleet of buses. I have worked on trucks, trailers, fire engines and other heavy equipment at the INEL.

In my years in the transportation industry, I have never seen the kind of concern and compliance to safety like I have seen at the INEL.

When I went to work for EG&G I thought some of the rules imposed by their Safety Manual, Standard Practice Manual and Detailed Operating Procedures were a case of overkill. Compared to the private industry I was familiar with, I had never seen such a demand for safety. I am convinced now that this constant concern is what keeps their safety record for transportation of people, equipment and radioactive materials the best in the nation.

This same concern for safety has been demonstrated by the development of the TRUPACT system to be used for radioactive waste shipments to WIPP.

At the INEL, workers like Equipment Operators who load and transport radioactive waste shipments, have to be trained and certified to do so. Once certified, Equipment Operators must maintain their certification by retesting every three years.

EG&G does not just pay lip service to this requirement. I have seen employees who fail to certify as operators dismissed from those jobs.

All equipment including trucks, trailers, cranes and all rigging chains, straps and shackles are tested as part of a Preventative Maintenance Program designed to certify dependable equipment and eliminate defective equipment. As fleet vehicles are replaced, only the safest, most efficient vehicles are purchased.

This commitment to DOE to maintain dependable equipment and a staff of competent people constantly striving for improvement will help assure the success of The Waste Isolation Pilot Plant.

One of the purposes of this public hearing is to discuss proposed routes for radioactive shipments to WIPP near Carlsbad, New Mexico. Less than 25 years ago many of the proposed routes existed only as two lane highways. Two lane highways were congested and fatal accidents were frequent occurrences. Today the largest portion of the proposed routes are four lane Interstate highways. This has virtually eliminated the hazards of years past. In the next several years we can look forward to further improvements in roads, routes and the vehicles used to transport our daily needs including the shipments of radioactive materials.

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When the INEL first started only forty years ago, the only route from Idaho Falls to the site was a two lane road through Blackfoot and then across the desert towards Arco. Workers rode in what were essentially school buses. Now there is a direct two lane route from Idaho Falls to the site and proposals have been made to change that to a four lane configuration to improve safety and accessibility.

I am confident that as time passes and as needs arise, shipping routes to WIPP and equipment that is used will change for the better just like they have and will continue to here in Idaho. This evolution will and must continue as technologies change for the better.

To add some perspective to this whole issue let me just say that radioactive waste has been around since the mid forties. So have I. I hope to be around for a few more decades but I know that radioactive waste will be around for a few thousands years. We need to deal with it now and permanently. Keeping radioactive waste permanently in Idaho is unacceptable because the facility at the INEL is designed for short term storage only. WIPP appears to offer us a long term solution to the waste problem.

The WIPP facility needs to start receiving radioactive waste as soon as possible so they can proceed with tests to determine Federal Compliance capabilities.

Thank You

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RICHARD H. STALLINGS  
2000 Belmont Avenue  
Washington, DC 20518  
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**Congress of the United States**  
**House of Representatives**  
Washington, DC 20515

COMMITTEE ON  
ATOMIC ENERGY  
AND RELATED  
SPACE, ENERGY  
AND TECHNOLOGY  
SELECT COMMITTEE  
ON ATOMICS

Statement of

HONORABLE RICHARD H. STALLINGS

Department of Energy Hearing  
Waste Isolation Pilot Plant

June 1, 1989  
Pocatello, Idaho

Statement of  
Honorable Richard H. Stallings

OPENING COMMENTS

I am sorry that congressional business in Washington has kept me from attending today's hearing on the Waste Isolation Pilot Plant (WIPP). The opening of the WIPP facility in New Mexico has been one of my top congressional priorities.

I want to thank the Department of Energy for its willingness to hold the Idaho hearing in Pocatello. Your commitment to a fair and open public process is appreciated.

As you know, I have cosponsored a lead withdrawal bill, H.R. 991, to help speed up the opening of the waste repository. It is critical that Congress complete action on this legislation this year.

The nuclear waste issue is of extreme concern to me and of vital importance to many of my constituents who live in eastern Idaho near the Idaho National Engineering Laboratory (INEL) and along the transportation route.

WIPP OFFERS SAFE, PERMANENT SITE

Earlier this year, I had the opportunity to visit WIPP and was very impressed with the facility. Despite some public concerns and fears about the safety of the plant, I believe it offers the nation a safe, permanent site for disposal of nuclear wastes.

However, I recognize that safety and environmental concerns must be adequately addressed before WIPP can open. These concerns are necessary and reasonable to protect the health and safety of the people of Idaho and the nation.

INEL WASTE MANAGEMENT ROLE

As you know, Idaho has played an important and longstanding role in our nation's nuclear waste program. For nearly 40 years, the Idaho Laboratory has been storing transuranic or TRU waste until a permanent repository is established. A significant portion of the country's TRU waste (about 70 percent) is currently buried or stored at the INEL.

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GROWING PUBLIC CONCERNS

Growing public concerns about waste management practices and protection of the Snake River Aquifer have prompted citizens to pay attention to activities at the INEL. The number of witnesses signed up to testify at today's hearing reflects the great amount of public interest regarding the nuclear waste issue.

Idahoans would prefer to see, in the near future, these nuclear wastes transported to the WIPP repository in New Mexico. I share the Environmental Department's assessment that waste storage in the salt medium WIPP represents the lowest risk to the environment and public safety versus temporary storage at Idaho.

It is imperative that the nation have a safe and permanent site for the disposal of our nuclear waste. While I recognize that there are many conditions and certain environmental standards that must be met before waste shipments can begin, it is my belief that further unnecessary delays in the scheduled opening of the WIPP facility will undermine public confidence in the program and seriously hamper waste management efforts.

GOVERNOR'S NUCLEAR WASTE PLAN

State officials and Idaho citizens have been very patient with the Department of Energy. In the past, we have honored each new request for increased nuclear waste storage. With each commitment for several more years of temporary storage has come a repeated promise that the waste would soon be transferred to a new federal facility.

Frustrated by broken promises and delays in the WIPP schedule, Governor Cecil Andrus has indicated that he intends to stand by his earlier commitment to end radioactive waste shipments to Idaho for temporary storage after September 1.

I fully support the governor's position and believe a waste ban would be necessary to keep the pressure on the Department of Energy to complete its tasks in a timely manner. Furthermore, the Department must develop a formal contingency plan and look for alternative sites for storage for Rocky Flats waste should WIPP be unavailable.

POTENTIAL IMPACT ON INEL

Currently, the Idaho waste management complex has a total of approximately 4.4 million cubic feet of stored or buried radioactive waste.

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If WIPP does not open soon, there is another major concern besides the Rocky Flats shipments to the Idaho complex. The Idaho laboratory has approximately two million cubic feet of TRU waste in 120,000 drums and 11,000 boxes (of TRU waste in above ground storage (mounded over with dirt on asphalt pads) that should be retrieved as soon as possible.

Some of this nuclear waste was placed on these asphalt pads in 1970 and is reaching its 20<sup>th</sup> year stated shelf life. Four years ago a retrieval investigation was performed to examine the condition of drums and boxes in one of the mounds. Upon examination, they were found to be rusted on the drum and drum lids, labels were in poor condition, and some of the boxes were breached.

If stored TRU waste is not shipped to WIPP in the near future, a storage facility three times larger than the current waste management building would be required for these wastes alone.

#### DOE MUST RESOLVE REMAINING ISSUES

While I believe there have been good faith efforts made and considerable progress achieved over the past several months, there are several activities that must be completed before WIPP can open.

It is essential that we continue to focus on the remaining concerns and work aggressively to overcome these hurdles so the facility can meet its target date of September 1. Let me briefly discuss several of these key issues and outline my views on them.

#### SUPPLEMENTAL EIS

Regarding the Supplemental EIS, I fully support DOE's proposed action to proceed with a phased approach to determine whether the WIPP facility should become a permanent repository for defense-generated TRU waste. Furthermore, the Department should maintain its schedule and issue a Record of Decision in September.

The safe transportation of these nuclear wastes is a major concern in Idaho and the other corridor states through which waste shipments will travel. A complete analysis of the environmental and safety aspects of transporting wastes from the INEL to the New Mexico site is necessary to ensure that the public and the environment are protected.

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The Department also must provide technical assistance, financial help, training programs, and equipment to community officials and emergency response personnel who must be able to assess the impact of a potential transportation accident.

#### TRUPACT II TESTING

I am particularly pleased that all certification testing for the TRUPACT II has been completed. The containers to be used for shipping the transuranic wastes to WIPP must meet regulatory compliance to ensure that public health and safety is not compromised.

#### FINAL SAFETY ANALYSIS REPORT

It is my understanding that the Advisory Committee on Nuclear Facility Safety will begin its review of the final safety analysis Report this month. This report is critical to ensure that WIPP can be operated in a safe and environmentally sound manner.

#### DRAFT TEST PLAN

In April, DOE issued its "Performance Assessment and Operations Demonstration Plan." It is important that this document be reviewed by independent experts in a timely and objective manner. The various experiments and operational activities that will be performed during the test phase are vital to the ultimate success of WIPP.

During the first three years of this phase, the amount of waste expended will not exceed three percent of its capacity. Even though I have reservations about the limited amount of waste, I can support the three percent figure.

The Performance Assessment process is necessary to evaluate the long-term performance of the waste system. This will help DOE assess compliance with EPA standards. In addition, the Operations Test will demonstrate safe operation of the entire waste management system, including packaging, transportation, and emplacement in WIPP.

#### MIXED WASTE

One of the biggest hurdles facing the Department is final action by the Environmental Protection Agency regarding regulation of radioactive waste mixed with hazardous chemicals, known as mixed waste.

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While DOE has said delays in EPA's environmental review of its No-Migration petition may stall final approval, officials have said it should not impact their ability to open WIPP on schedule. However, I remain very concerned about this issue. It is imperative that DOE continue to work with EPA officials and commit the resources necessary to resolve this problem.

CLOSING COMMENTS

In closing, I appreciate the opportunity to share my comments about the WIPP facility. Many states, including Idaho, and the federal government have an important stake in the outcome of this waste management program. I look forward to working with the Department of Energy on issues of concern to the people of Idaho.

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Tom W. John Arthur, Project Manager  
 WIPP SEIS Project Officer  
 U. S. Dept. of Energy  
 6301 Indian School Rd NE 7th Floor  
 Albuquerque NM 87118

From: Daniel Beery  
 842 N. 1000 E.  
 Shelley, ID 83274

Re: Waste Isolation Pilot Project SEIS

The quote that came to my mind while contemplating DOE's statements on the WIPP was, "Hold your hats boys, here we go again."

In the WIPP FEIS circa 1979, we read, "... the WIPP design will be modified as necessary to comply with legally applicable EPA rules and regulations..."

In typical DOE fashion, we're now asked to consider the emplacement of up to 100% of WIPP's capacity in a so-called test phase, with no rationale given for the change of plans, and the flagrant disregard for EPA standards. Lab tests and bin-tests are categorically ruled out, and clearly a mad rush is on for DOE to do as it pleases, heedless of the taxpayers who foot the bill.

In the Federal Register, April 1989, we find this from DOE, "... the filling of available storage capacity for radioactive wastes... may hamper defense production operations vital to national security."

Apparently the author of the statement wasn't reading the newspaper then, and I doubt he or she is reading it now. That's too bad, because anyone who does can see that the prognosis for nuclear weapons production is not good, and in fact has already started a downward turn. This is without even considering the absurdity of the 25,000 weapons we already have, for less than 200 Soviet cities, whereas resides the alleged enemy.

At a time when the Communist countries of the world are striving to make radical changes in the direction of democracy, I find it embarrassing, humiliating, and deplorable to have my tax money going to DOE planners whose only apparent interest is the propagation of their own deceitful, irrational, and increasingly unnecessary organization.

If DOE planners have the tenacity to use our money to make and bury products most of us don't even believe in making, then I urge them to do a conscientious and honest job, instead of the sham we are now witnessing.

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June 1, 1989

My name is John P. Kester. I live at 3375 Cobblestone Lane in Idaho Falls, ID. I am testifying as a private citizen concerned that people who are against anything connected with nuclear or the INEL are misrepresenting the need and appropriateness of the WIPP. I am a graduate engineer with a Masters Degree in Mechanical and Nuclear Engineering. I have worked eight years in the high technology area of successful NASA manned space flights (namely Apollo) and 20 additional years in the highly regulated and high technology nuclear business. My nuclear experience includes about three recent years at the DOE Hanford site in the State of Washington and the rest at the INEL.

When man walked on the moon 20 years ago, he left a now famous footprint. Regardless of whether it was by creation or evolution, several thousand years ago the same thing happened on earth by a thinking and reasoning man. (A footprint - an impact!) ALL human endeavors have an effect on our earth, and I want two things for my family and all their descendants: (1) as much as anyone else, I want a local and global environment that is economically and physically healthy and safe from damage and destruction, and (2) I want a U.S. society that continues to prosper and produce new and innovative products and solutions to its problems.

The subject of this hearing is vital as a piece of an overall technically sound, environmentally acceptable, and safe solution to a

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problem. Such a problem is not a fault of anyone or any agency, but simply a natural result of our progress. That progress wasn't the whim of an individual or a few deranged individuals; it was at the demand of the people wanting a secure U.S. and world and the products and services of a "good life".

Waste has developed a negative connotation and immediately raises suspicion in the minds of many people. For one, no one wants it close, and for another, since we're told "its solution" is expensive, many people want to ignore it. Obviously the ostrich approach isn't sensible or responsible and won't work. Instead, a smart approach, even if interim in nature, allows treating the problem honestly and not hysterically, and assuring reasonable costs, flexibility for exercising future options, and safety to people and the environment. Debating or attacking this EIS because someone thinks the DOE should not be in the business of defending our country's life style with nuclear weapons is an error of focus. That issue is best transmitted to our representatives and then debated in Congress and discussed within the Administration.

This hearing should be focused on the appropriateness of the Waste Isolation Pilot Plant to complement the DOE's chartered mission of responsibility in meeting the country's defense mandate which means making certain nuclear materials and weapons. This responsibility extends from A to Z of the life cycle process. The near end of that process is responsible waste handling, which this hearing and testimony addresses.

The WIPP EIS examines three alternatives; (1) a phased approach with intermittent testing on the suitability of the actual storage assumptions

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and technology; (2) limited testing at another location; and (3) no action. I have already mentioned why the no action ostrich approach is a waste of taxpayer money and represents more risk to the public and the environment. The limited testing also wastes our taxpayer money and seems to assume that professional and competent technical personnel who have safety of the public and the environment in mind cannot be trusted. If we are not prepared to trust and proceed now, when will we be? As an approach, it is really a de facto "no action" option. Only Option 1 of proceeding with actual WIPP storage, which includes a reasonable planned monitoring and testing program, meets the test of being technically and financially responsible.

This is the cost effective and logical approach which minimizes expenditures and which is applied constantly in all responsible technological endeavors of all kinds. Don't forget that the P and P letters in the WIPP acronym stand for Pilot Plant. It's time to get the data a pilot plant strategy is designed to get.

Areas I want addressed in the EIS are the risks and benefits of storage within the DOE system, of monitoring, of retrievability, and of transportation. Clearly, material stored for the interim at the JREL is long overdue to be placed in a semi-permanent storage site, which is the WIPP mission. It's time to proceed. Hand waving and worrying will not solve the problem. Action, taken in the proposed responsible manner with a concern for the safety of the population and the environment, will solve it! It's time to proceed.

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PUBLIC COMMENT ON THE  
SUPPLEMENT TO THE ENVIRONMENTAL IMPACT STATEMENT  
FOR THE WASTE ISOLATION PILOT PLANT (WIPP)

T. B. Hedahl  
June 1 1989

Thank you for the opportunity to testify at this public hearing on the supplement to the Environmental Impact Statement for the WIPP project.

I essentially have two primary points to make concerning this public hearing. The first point is to provide my support for the immediate continuation of the WIPP project through the phased approach addressed in alternative 1 or the Department of Energy (DOE)'s proposed action. The second point is to chastise both DOE and the numerous intervenor groups for delay of this extremely important project.

The WIPP facility is a well conceived, thoroughly investigated project. It probably represents the best location the United States has to offer for the permanent isolation of long-lived nuclear waste. So why the delay? The answer lies principally in DOE's past reluctance to comply with other agencies' rules and regulations and their insistence on self-regulation and control. DOE has lost on all major fronts on this issue, including having to obtain appropriate Environmental Protection Agency (EPA) permits for compliance with the Resource Conservation and Recovery Act (RCRA) and Nuclear Regulatory Commission (NRC) approval of the TRUPACT-II waste transportation container. DOE's irresponsibility in this area has allowed intervenor groups to legitimately question whether DOE is properly managing construction of this facility. I hope the lessons learned from the project delays and mishaps ahead of DOE will prove to be valuable for properly planning future DOE projects.

And now for the intervenors. It is readily apparent that most so-called environmental groups are truly not interested in establishing a safe and environmentally-acceptable facility for permanent waste disposal. Their true purpose is to stop the proliferation of nuclear weapons deployment and all projects that either directly or indirectly support this mission. While this in itself may be an admirable cause, disregarding our Nations security and defense posture, the ultimate outcome of their delay tactics could cause irreparable environmental impact. Through the continuous delay of the WIPP project, our Nation's nuclear wastes are not being disposed of properly. Indefinite, temporary waste storage in anticipation of a final waste repository, is certainly not the answer. If the intervenors were true environmentalists, they would call for the immediate disposal of nuclear wastes at the WIPP facility.

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Statement of Suzanne Budge  
Waste Isolation Pilot Plan (WIPP) Hearing  
for the Supplemental Environmental Impact Statement (SEIS)  
June 1, 1989 Quality Inn, Pocatello, Idaho

My name is Suzanne Budge. I am a geologist, and I have a Bachelor of Science degree from Utah State University and a Master of Science degree from the Colorado School of Mines. I am a member of Idaho Association of Professional Geologists, the Utah Geological Association, and the American Association of Petroleum Geologists. My professional experience includes mineral, energy, and environmental geology, and I have worked in the Western United States, the Mid-Continent, the Gulf of Mexico, and Alaska.

I would like to speak today in support of the Department of Energy's proposed action to proceed with a phased approach in the opening of the WIPP facility in New Mexico. The Los Medanos site is a favorable geologic setting for the permanent disposal of transuranic waste due, in part, to the following reasons:

- \* Salt is an ideal medium for the isolation of waste. Salt has extremely low porosity and permeability which prevent the movement of fluids. It is highly plastic and consequently promotes "healing" of fractures and fissures. The presence of salt in itself, indicates that there is very little water available to mobilize waste.
- \* The site is tectonically stable and is not likely to be affected by significant seismic activity.
- \* The great stratigraphic thickness (in excess of 2,000 feet) of the salt within the Salado and Castile Formations is ideal for containment.
- \* Isolation of radioactive waste more than 2,100 feet below the surface of the earth effectively removes it from the biosphere and is by far a superior alternative to interim storage at or near land surface.

In conclusion, I would like to add that the WIPP facility is prepared to accept waste, and the Radioactive Waste Management Complex at the Idaho National Engineering Laboratory is fully prepared to ship it. Let us proceed with the WIPP opening as the most reasonable, economic, and technically defensible solution to the permanent disposal of radioactive waste.

*Suzanne Budge*  
6-1-89

address: 759 Reed Ave, Idaho Falls, ID

854 Claire View Lane  
Idaho Falls, Idaho 83402  
May 31, 1989

Mr. M. John Arthur III  
Department of Energy, Albuquerque Operations  
P.O. Box 3400  
Albuquerque, New Mexico 87115

Dear Mr. Arthur,

Inasmuch as the Department of Energy has solicited comments and opinions relative to the Supplemental Environmental Impact Statement on the Waste Isolation Pilot Plan (WIPP), I would like to register my opinion on the subject. I am a citizen of the United States of America and have been employed at the Idaho National Engineering Laboratory for nearly 36 years.

The WIPP-SEIS analyzes three alternative courses of action that might be taken. I support the DOE's proposed action:

Alternative 1: Proceed with a phased approach to determine whether the WIPP should become a repository for the disposal of transuranic waste.

During the past five years I have been concerned with the validation of the techniques proposed for the transuranic waste to be sent to the WIPP. From what I have heard of the composition of that waste, and of the TRUPACT II salt to be used in shipment, I am completely confident that the transportation of the TRU waste to the WIPP will not pose any appreciable hazards to Idaho or to any other state. Governor Andrus has insisted, and the DOE has agreed, that transuranic waste stored at the IREL should be removed. The operation of WIPP is a necessary first step in that removal process. It will not only allow removal of much of the TRU waste in temporary above-ground storage at the IREL, but it will also provide valuable experience that will be useful in the treatment of the buried waste. The buried waste must not be disturbed until the methods to be used in handling it are established. Operation of WIPP is vital to the solution of the buried waste problem at the IREL.

Sincerely yours,

*J. Richard Smith n.o.*  
J. Richard Smith

**Citizens Against Nuclear Weapons and Extermination**

*CAN WE*

1-Jun-89: EX-00037, PAGE 1 OF 11  
 P.O. BOX 2152  
 Coeur d'Alene, ID 83814-2152

Statement of purpose to provide information and assistance to the public about DOE estimates and the actual functioning of reactors and soils used to dispose of deadly nuclear wastes. associated with their production. It is organized for educational and charitable purposes.

May 29, 1989

Hearing Officer  
 U.S. Department of Energy  
 Re: Supplement to the Environmental Impact Statement for the Waste Isolation Pilot Plant  
 Public Hearing, Pocatello, Idaho (or forwarded to be included as written testimony)

Hearing Officials:

We, the members of CAN WE, Citizens Against Nuclear Weapons and Extermination, would like to make a few brief comments on the Supplement to the Environmental Impact Statement for the Waste Isolation Pilot Plant proposed to be sited in New Mexico.

SAFETY OF STORAGE OF NUCLEAR WASTE:

We do not believe that at the present time there is ANY method or place that is safe for the storage of deadly nuclear waste products. It is not environmentally sound and we see its disposal as a hazard to human health, other living species and the total environment now and in the future.

New Mexico is no exception. Being the Hanford Nuclear Reservation with which we are quite familiar as an example. According to DOE estimates, the migration of radionuclides from that facility through the soils and groundwater would take thousands of years. Unfortunately, they were wrong. A recent report concludes that the soils at Hanford are unable to prevent long-lived radionuclides in wastes from contaminating groundwater migrating into the Columbia River. Those groundwater sediments already contain various levels of Dehalat-60, Ruthenium-106, cesium-137, antimony-125, uranium-235 and europium 152-154. A report on Indine-129 in the groundwater of that facility was covered up by officials. Radioactivity has already contaminated the Columbia River.

-2- 1-Jun-89: EX-00037, PAGE 2 OF 11 #

This experience bodes a real warning to the public about DOE estimates and the actual functioning of reactors and soils used to dispose of deadly nuclear wastes. The Hanford experience has application to the New Mexico site.

TRANSPORTING NUCLEAR WASTES:

There is no Environmental Impact Statement that can justify transporting nuclear wastes across our country, through population centers and farmlands to be placed in New Mexico or anywhere else.

From research we had done as an organization as late as 1986, we know that the shipping risks have much to be desired as far as safety goes. Accidents on our rail system and highways often happen. Included with this testimony are just a few newspaper reprints citing truck accidents that have happened in our region in recent months. Our highways and weather hazards are no different than those to New Mexico at various times of the year. Idaho highways would also be slated to transport nuclear wastes.

In a rush to find a place to dump the nuclear wastes and likely other hazardous substances, we see our government over-riding the health and safety considerations for our citizens at this site and along transportation routes to it, even though they are of primary importance under the Atomic Energy regulations and its later revisions and amendments.

DEPARTMENTS OF ENERGY HONESTY:

With recent disclosures of mismanagement, accidents, and nuclear experiments on our civilian populations from nuclear weapons facilities, we find it hard to believe the assurances of safety which is being fed to the American people about nuclear waste dump sites. The Hanford Reservation, the Utah Downwinders and others affected by the Nevada test site, Atomic Veterans, Marshallese and Navajo Uranium miners have a different view of the honesty and concern of the Department of Energy Officials. Expediency appears to be the mode of operation. Of course those who have suffered

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and died because of the radiation exposure from our nations nuclear weapons complex are unable to speak for themselves. It does bring into question why we would want to sacrifice the present and future citizens of New Mexico and wherever else the resulting radioactive waters may flow. In a Democracy, citizens should not be used as guinea pigs nor as "sacrificial lambs."

We believe that sites should not be chosen just for political expediency. Perhaps, waste needs to be left on site until absolutely safe disposal, if there is any, is found. And current and future production of nuclear weapons which produce life-threatening nuclear waste must come to a halt immediately.

Respectfully submitted by,  
*Elizabeth Hansen*  
Gertrude Hanson, Chairperson  
and Members of CAN MS

3.2-1



*Conrad/Bene  
Z.S.A.L.*

1-Jun-69; EX-00037, PAGE 4 OF 11

### Slick roads blamed for car, semi truck accidents



...the cause of the accident was the slick roads. The driver of the car was not at fault. The driver of the semi truck was not at fault. The driver of the car was not at fault. The driver of the semi truck was not at fault.

*Zdoh*  
*1-2-89*

THE OGDEN DAILY PRESS

### Truck spills nuke waste

#### Officials say no health risks

RICHLAND, Wash. (AP) — A truck accident that spilled nuclear waste in Richland, Wash., on Thursday caused little excitement in this city that is so used to the nuclear industry.

But the spill, which occurred on a road near the accident site, was not a health hazard, said Bob Anderson of the state Office of Radiation Protection.

Members of the Richland community were told to stay away from the spill site to help cleanup crews working in protective gear.

"I've gotten so used to it (radioactive waste) that I don't think it's a big deal," said a Richland resident who was taking pictures.

"I came over to volunteer to help," said neighbor Don Hancock. "I hope they have a water truck."

But at least one Richland man was injured by the accident. "I question my own self about being here because I can't breathe," he said.

The nuclear industry is a major employer in this city of 28,000, adjacent to the Hanford nuclear reservation, where the federal government stores plutonium for nuclear weapons.

The 28-foot truck hauling the waste to burial overturned on a corner at 1:45 a.m. Thursday. The



A worker says the radioactive waste (Thursday) following an accident in Richland. A truck carrying low-level radioactive waste to a burial site at Hanford overturned after it hit a guardrail.

The truck carried six large metal drums, each packed with 100 pounds of waste from the Richland Power Plant near the Hanford reservation. Radioactive waste is a distinct hazard, especially from the drums, which are packed in a concrete container.

—Lead Staff





THE COLE VALLEY PRESS Thursday, Dec. 22, 1988

Emergency services were dispatched Gray to an ambulance Wednesday.

### Good luck saved driver who fell unconscious at controls of truck

Good luck — and nothing else — suffered either a stroke or a mild heart attack, the dispatcher said. Gray "felt something coming on," the dispatcher said. Gray pulled the rig over the side of the road and between trees and telephone poles.

The bling is, the dispatcher said, the rig and taken to Koodemal Medical Center, where he was admitted. The truck had to be unloaded before it could be towed where it came to rest without hitting anything or rolling over.

Had he not pulled over, he would have had to negotiate a turn on the four-lane highway and could have driven into oncoming traffic, the dispatcher said.

Gray was found unconscious in the rig and taken to Koodemal Medical Center, where he was admitted. The truck had to be unloaded before it could be towed where it came to rest without hitting anything or rolling over.

### Black ice turns I-90 into demolition track

By JEANNETTE HARP  
Shoshone County News-Press  
For North Idaho News Network

The I-90 corridor between Oxbow and Loston Pass became an elongated demolition derby course during the weekend when hazardous road conditions were marked by black ice that sent vehicles spinning out of control.

Noel B. Hawke of Oak Harbor, Wash., a motorist filing a walkie-talkie report Sunday afternoon after his 1984 Volvo sedan smashed into a guardrail between Wallace and Pullman, said the government by many people who will arrive in the last weekend of 1988 as the time they wrecked their cars.

Hawke said, "The road ap-

See WRECKS, Page 4

### WRECKS

CONTINUED FROM PAGE 1

aided on I-90, hit the center divider, rolled to the left, and back and slid across both westbound lanes and hit the guardrail. The driver said the impact caused the vehicle to "snap ends" before sliding another 110 feet along the railing. The driver escaped serious injury.

Among several accidents that happened in the Mullas-Lookout Pass area between 11:30 and noon Sunday was the one in which Holmes was injured. Holmes, 46, of Spokane, was traveling west while leaving another vehicle when the westbound vehicle struck the eastbound vehicle about 300 feet west of Mile Post 108. The vehicles left the roadway and slid 75 feet before overturning. The driver of the westbound vehicle died of injuries 46 feet before turning to rest against a guardrail. The report for the fatal accident listed the driver as being 150 on his side. Total damages were in the \$3,500 range. Both Lawton and Holmes were taken to East Shoshone Hospital by a deputy sheriff.

At 11:30 a.m. Sunday, a westbound Chevrolet Sprint driven by Scott Green Talcott of Tacoma, Wash., rolled over about a half-mile east of Mile Post 108. That car rolled to its side after traveling up on the railroad grade. No estimate of damage was reported and Talcott escaped serious injury.

Back in the Oxbow area at 11:38 a.m. Saturday, an eastbound 1983 Jeep CJ5 driven by Todd Francis Lundin of Salt Lake City,

Dodge Ramcharger driven by William Hartley, 27, of Pullman, rolled over about 27 miles east of Wallace. The driver escaped serious injury. The impact caused the vehicle to "snap ends" before sliding another 110 feet along the railing. The driver escaped serious injury.

The accident involving Noel Hawke of Oak Harbor, Wash., mentioned above, happened at Mile Post 46 at 11:45 a.m. Sunday. A westbound report filed by Linda Lynn Juallia of Coeur d'Alene City, Idaho, said she was driving a 1979 Jeep CJ5 and pulling a trailer when those rigs jack-knifed near Mile Post 41 at 11:38 a.m. While commuting to work, she was driving when the 1974 Plymouth Duster she was driving collided with Juallia's vehicles.

Details of yet another accident that resulted in the trailer of a guardrail ending up on a tractor-trailer with the tractor hanging on the side of the freeway at 4:35 Sunday afternoon were reported at press time today. Officers said the driver escaped serious injury.

### Grews mop up magnesium spill

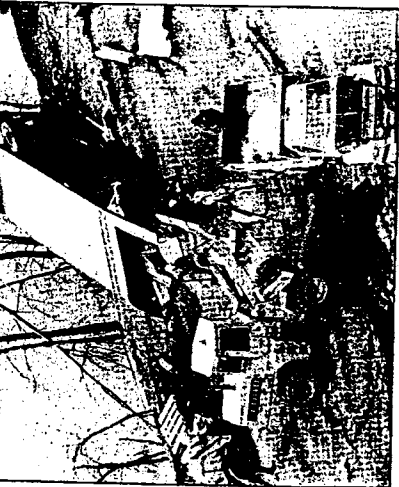


**Hazardous shipments worry councilmen**

... The Council of American Shippers (CAS) has expressed concern over the transportation of hazardous materials, particularly magnesium metal, which is highly flammable and reacts violently with water. CAS officials have urged the Federal Highway Administration (FHWA) to take more stringent measures to regulate the transport of such materials. They argue that current regulations are outdated and do not adequately protect the public and the environment. CAS has also called for increased training and certification for drivers and handlers of hazardous materials. The organization has been active in lobbying Congress and the Executive branch for stronger safety standards. CAS has also worked with state and local officials to improve emergency response procedures for hazardous material spills. The organization has been successful in getting its concerns heard by decision-makers at various levels of government. CAS continues to monitor the situation and will continue to advocate for stronger regulations. CAS has also been instrumental in raising public awareness about the dangers of hazardous materials. The organization has held numerous public hearings and has distributed educational materials to the general public. CAS has also worked with the media to highlight the risks of hazardous materials transport. The organization has been successful in getting its message across and has managed to gain the support of many concerned citizens. CAS has also been instrumental in getting its concerns heard by decision-makers at various levels of government. CAS continues to monitor the situation and will continue to advocate for stronger regulations. CAS has also been instrumental in raising public awareness about the dangers of hazardous materials. The organization has held numerous public hearings and has distributed educational materials to the general public. CAS has also worked with the media to highlight the risks of hazardous materials transport. The organization has been successful in getting its message across and has managed to gain the support of many concerned citizens.

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### SUN



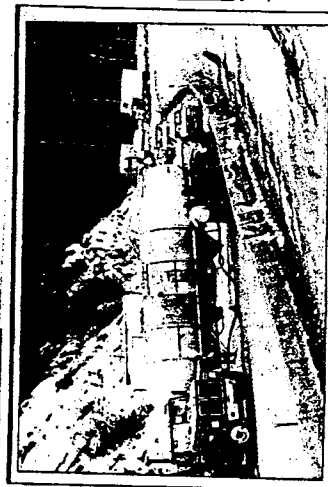
**Crews mop up** Continued from Page 1

The dismantled tractor-trailer containing the granulated and flaked ore lies on its side. Crews are working to clean up the spill. The cleanup is a complex task involving the removal of large quantities of hazardous material. Workers are using specialized equipment and techniques to ensure the safe handling and disposal of the spill. The operation is being conducted in a controlled and systematic manner to minimize the risk of further contamination. The cleanup crew consists of experienced professionals who are trained in the handling of hazardous materials. They are working in close coordination with regulatory agencies to ensure that all procedures are followed correctly. The cleanup process is expected to take several days to complete. The site will be thoroughly inspected and tested to ensure that it is safe for future use. The cleanup operation is a testament to the dedication and expertise of the workers involved. It is a critical step in the process of restoring the environment and protecting public health. The cleanup crew is working hard to ensure that the spill is contained and that the surrounding area is safe. The operation is a complex and challenging task, but the crew is determined to see it through to the end. The cleanup crew is working in a safe and controlled environment. They are using all the necessary precautions to ensure the safety of themselves and the public. The cleanup operation is a success story in the world of hazardous material management. It shows that with the right resources and expertise, even the most difficult spills can be cleaned up. The cleanup crew is a team of professionals who are committed to their work and to the safety of the community. They are working hard to ensure that the spill is cleaned up and that the environment is protected. The cleanup operation is a critical step in the process of restoring the environment and protecting public health. The cleanup crew is working hard to ensure that the spill is contained and that the surrounding area is safe. The operation is a complex and challenging task, but the crew is determined to see it through to the end. The cleanup crew is working in a safe and controlled environment. They are using all the necessary precautions to ensure the safety of themselves and the public. The cleanup operation is a success story in the world of hazardous material management. It shows that with the right resources and expertise, even the most difficult spills can be cleaned up. The cleanup crew is a team of professionals who are committed to their work and to the safety of the community. They are working hard to ensure that the spill is cleaned up and that the environment is protected.

1-Jun-89 13 43-00037, PAGE 10 OF 11

County not equipped  
 Spokane County is the only  
 jurisdiction with any provision in its  
 code that would require  
 a driver to wear a seat belt  
 in a vehicle in a nuclear re-  
 sponse area.  
 In fact, the county code  
 is, according to my staff, not  
 enforceable in any part of  
 the county.  
 Local emergency personnel  
 are responsible for identifying a spill  
 and for notifying the appropriate  
 emergency agencies, including  
 the National Guard, which is  
 the training to deal with the sit-  
 uation. (Emphasis added)

**Torpedo truck crashes**  
 SPokane (AP) — A truck  
 carrying two torpedoes along  
 the coast of Spokane on the high-  
 way and crashed into a tree, the  
 driver was killed.  
 A hazardous-materials team  
 from the Spokane Fire Department  
 and the Spokane County Sheriff's  
 Office and three emergency vehicles  
 that they found on the scene.  
 The driver of the truck, which  
 was carrying two torpedoes, was  
 killed when the truck crashed into  
 a tree on the side of the road.  
 The cause of the accident, which  
 occurred about 10:30 a.m. on  
 Monday, is still under investigation.  
 A hazardous-materials team from  
 the Spokane Fire Department and  
 the Spokane County Sheriff's Office  
 and three emergency vehicles that  
 they found on the scene.



The driver of the semi-trailer truck was unharmed when the rig jumped the guardrail on I-90.  
**Truck accident delays traffic**  
 The concrete median at about a  
 mile west of Spokane, where the  
 accident occurred, is a high  
 speed area. The truck, which was  
 carrying two torpedoes, was  
 overturned on its side on the  
 shoulder of the road. The driver  
 was unharmed. The truck was  
 carrying two torpedoes.

Col A Ph... - 2-23-89  
 Idaho

**TESTIMONY - WASTE ISOLATION PILOT PLANT**  
 June 1, 1989

My name is Philip A. Anderson. I am a resident of  
 Pocatello, Idaho, having lived here for 24 years.

Based on experience from previous hearings of this  
 nature, members of the news media here today will recognize  
 me as a Senior Scientist at the Idaho National Engineering  
 Laboratory, immediate past President of the Idaho Academy of  
 Science, past Chairman of the Idaho Section of the American  
 Nuclear Society, and a member of the Board of the Nezarcene.  
 Therefore, I want to state clearly that I am speaking only  
 for myself today and am not representing any of those  
 organizations.

Professionally, I am a chemist, having worked  
 extensively with both irradiated and unirradiated nuclear  
 fuels, as well as with high-level fission product and  
 transuranic waste materials. The safety regulations  
 concerning the handling, packaging and transport of such  
 materials are conservative and provide more than adequate  
 margins of safety for both workers and the public. As a  
 person who spends 40 to 60 hours per week at a nuclear  
 facility and working directly with such materials, I have no  
 qualms whatsoever for my own safety or that of my coworkers.

Although the present methods of handling such materials  
 and their current modes of temporary storage provide adequate  
 margins of safety for the foreseeable future, it is both  
 appropriate and expedient to move forward with the opening of  
 the Waste Isolation Pilot Plant (WIPP). The proposed action  
 of placing actual transuranic waste materials in the WIPP and  
 the early demonstration of "permanent storage" should proceed  
 as proposed.

The current transportation safety record for nuclear  
 shipments is impressive. The shipping containers planned for  
 transporting transuranic wastes to the WIPP are  
 conservatively designed and should provide more than adequate  
 safety. I live very close to the transportation route  
 through Pocatello and am entirely comfortable with it.  
 Indeed, I am much more comfortable with the nearby shipment  
 of nuclear materials than with the routine shipment of more  
 dangerous materials, such as propane, although I will concede  
 that those shipments really don't worry me very much either.

*Philip A. Anderson*  
 Philip A. Anderson  
 909 Ludlow Ave.  
 Pocatello, ID 83201

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COMMENTS ON DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT -

WASTE ISOLATION PILOT PLANT

SENATOR JAMES A. MCCLURE

June 1, 1989

Because the Department of Energy has afforded Idaho the opportunity to provide input to the Department's Draft Supplemental Environmental Impact Statement, I feel compelled to offer some of my own comments on this crucial subject for the record.

I have been following the status of the Waste Isolation Pilot Plant ever since its inception back in 1979, when Congress passed the public law that authorized the WIPP project. During the ten years since that time, I have observed great progress in the construction of the WIPP facility, and yet at the same time, I have experienced much frustration, as I am sure all Idahoans have, with respect to the ability of the Department of Energy to proceed with the initial phase of operation of the WIPP facility. Part of the delay that we have had to live with is institutional, part legal, part administrative, part regulatory, and part procedural.

The Supplemental EIS is a perfect example of the kinds of hurdles that must be overcome before the WIPP is allowed to receive waste, and which I do not criticize the process, nor do I question the merits of issuing a Supplemental EIS. I do feel that a proper balance must be struck so that we avoid the risk of becoming totally atropic in our treatment of any outstanding matters relating to WIPP.

For too long now Idaho has been standing by, waiting for a reprieve from the burden it has borne since 1970 of storing transuranic wastes produced at the Rocky Flats Plant in Colorado. For too long now Idaho has been given assurances that that waste will be removed from within our borders - - assurances that have fallen by the wayside time and time again because of delays at the WIPP facility. For too long now, the concerns of the host state of the WIPP facility have been met, while the equally valid concerns of other players remain outstanding.

I am a very patient man. Most Idahoans are patient people. Some, however, are not so patient. And while the WIPP Environmental Impact Statement and its Supplement address the adverse impacts of having to store transuranic waste in Idaho for an additional, indefinite period of time, the real question is that Idaho MAY NOT ACCEPT any more of this waste for an indefinite period of time. I am not sure that a document such as an Environmental Impact Statement is the proper contact within which to address such possibilities, but I can guarantee you that there will be serious consequences not only to the environment, but to the national security of this nation, if the Department of Energy is not successful in providing a long-term disposal facility for the nation's transuranic waste.

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STATEMENT ON SUPPLEMENT TO THE ENVIRONMENTAL IMPACT STATEMENT ON THE WASTE ISOLATION PILOT PLANT

FOR PRESENTATION AT THE PUBLIC HEARINGS HELD IN POCATELLO ON JUNE 1, 1989

BY L.J. YBARRONDO

MY NAME IS LARRY YBARRONDO. I LIVE IN IDAHO FALLS.

I AM PLEASED TO HAVE THE OPPORTUNITY TO TALK TO YOU TODAY

ABOUT MY STRONG SUPPORT FOR THE WIPP PROGRAM AND THE SEIS.

A FEW WORDS ABOUT MY BACKGROUND WILL BE HELPFUL TO PLACE MY SUPPORT FOR THE WIPP AND THE SEIS IN PERSPECTIVE.

\* I HAVE LIVED IN IDAHO FOR OVER TWENTY-TWO YEARS AND RAISED MY FAMILY HERE. MY FAMILY AND I ARE ACTIVE OUTDOOR ENTHUSIASTS AND STRONG ADVOCATES OF BEING RESPECTFUL AND PROTECTIVE OF OUR ENVIRONMENT.

\* I HAVE A PHD IN ENGINEERING AND OWN AN ENGINEERING CONSULTING COMPANY HEADQUARTERED IN IDAHO FALLS.

\* FOR FIFTEEN YEARS I WORKED AT INEL IN CHARGE OF 4 REACTORS AND ALL NRC NUCLEAR SAFETY PROGRAMS.

\* MY COMPANY DOES LESS THAN 1 % OF OUR WORK WITH INEL.

I AM NOT AN ACTIVIST. I REGRET THAT WIPP, LIKE MANY OTHER NUCLEAR PROGRAMS, HAS BECOME A POLITICAL BATTLE. THE POLITICALIZATION OF THE ATOM. YET, THE ATOM IS A VERY BENEFICIAL ENERGY SOURCE FOR THE WORLD. MOST OF US WHO ARE TECHNICALLY QUALIFIED AND COMPETENT AND EQUALLY SENSITIVE TO THE WELFARE OF OUR FELLOW CITIZENS AND THE ENVIRONMENT NEVER TAKE THE TIME TO SHARE OUR VIEWS WITH THE GENERAL PUBLIC ON WHY PROJECTS LIKE THE WIPP ARE SO IMPORTANT TO IDAHO, OUR COUNTRY, AND THE WORLD.

THE PROBLEM OF RADIOACTIVE WASTE HAS CORRECTLY BEEN SAID TO BE A POLITICAL RATHER THAN A TECHNICAL PROBLEM. THE ALTERNATIVES IN THE SUPPLEMENTAL IMPACT STATEMENT ARE SEEMINGLY TECHNICAL BUT THEY REFLECT A POLITICAL SLOWDOWN APPROACH WHICH HAS GONE ON TOO LONG. THE BEST THING TO DO NOW IS TO ENABLE THE TECHNICAL COMMUNITY TO DO THE WORK THAT THE POLITICAL COMMUNITY NEEDS TO MAKE SOUND DECISIONS ON BEHALF OF THE PEOPLE.

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TRANSURANIC WASTE IS PRESENTLY STORED AT THE IDAHO NATIONAL ENGINEERING LABORATORY. REMOVAL OF THE STORED TRANSURANIC WASTE FROM IDAHO IS A PRUDENT ACTION.

GOVERNOR ANDRUS HAS RIGHTLY CAUSED AN ASSESSMENT OF IDAHO'S ROLE BY STOPPING WASTE SHIPMENTS TO IDAHO. OUR STATE HAS CARRIED ITS SHARE OF THE BURDEN LONG ENOUGH. THE STATE OF NEVADA IS WILLING TO DO ITS PART. IT SHOULD HAVE THE BEST DEVELOPMENT WORK THAT CAN BE PERFORMED SO THAT IT CAN FEEL CONFIDENT ABOUT THE FUTURE TECHNICAL QUALITY OF THE WIPP OPERATION. THIS REQUIRES THAT THE WIPP BE AS FULLY TESTED AS POSSIBLE AT EACH STEP.

THE NEXT STEP SHOULD INVOLVE BELOW GROUND OPERATIONS TO WORK OUT PROBLEMS WHILE THERE IS A PROPER FOCUS ON IMPROVEMENT AND FUTURE USE. THE ONLY WAY TO PROVE WIPP IS TO TRY IT WHILE CHANGES CAN BE MADE.

WIPP IS THE FORERUNNER OF THE COMMERCIAL REPOSITORY AND WILL, IN IMPORTANT WAYS, INFLUENCE THE STRATEGY, TECHNOLOGY, AND ADMINISTRATIVE CONTROL PROCEDURES FOR THE COMMERCIAL REPOSITORY. OPERATION OF WIPP WILL BE A VERY POSITIVE STEP TOWARD CONSTRUCTIVE RESOLUTION OF TECHNOLOGICAL AND INSTITUTIONAL ISSUES POSED BY ALL INTERESTED PARTIES, NOT ONLY FOR DEFENSE TRANSURANIC WASTE, BUT FOR THE FOLLOW-ON COMMERCIAL WASTE REPOSITORY.

I AM CONFIDENT THAT THE TECHNICAL PERSONNEL IN WASTE MANAGEMENT CAN WORK OUT PROBLEMS IF POLITICAL BARRIERS ARE NOT PUT IN THEIR WAY. ALTERNATIVES 2 AND 3 ARE POLITICAL BARRIERS. ONLY ALTERNATIVE 1 CAN ENABLE THE TECHNICAL COMMUNITY TO LAY A SOUND BASIS FOR GOOD OPERATION AND INFORMED POLITICAL DECISIONS ON WIPP.

ALTERNATIVE 1 SHOULD BE CHOSEN.

THANK YOU FOR THE OPPORTUNITY TO TESTIFY ON THIS IMPORTANT MATTER.

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WIPP Draft SEIS  
Public Hearings

Pocatello, Idaho --- June 1, 1989

Testimony  
C. Lee Bendinson  
294 N. 300 W.  
Blackfoot, Idaho 83221

I appreciate the opportunity as a private citizen of the USA to participate in an open forum such as this and to speak my views on a important subject. At the outset, I give my support to Option #1 as outlined in the WIPP Draft Supplemental Environmental Impact Statement, in that the WIPP should be opened as soon as possible for the receiving of radioactive nuclear waste and for the testing proposed. Neither of the other two options makes progress towards providing adequate storage for TRU nuclear waste.

Let me establish my personal credentials. My name is C. Lee Bendinson and I have been a resident of Blackfoot, Idaho for the past 24 years. I hold bachelors and masters degrees in chemical engineering and have been active in that profession since graduation in 1965. I also have 24 years experience in the nuclear industry, with significant background in nuclear fuel reprocessing, waste conversion, and safety analyses, as received at the Idaho National Engineering Laboratory. I believe I am more qualified than most in technical ability to judge the nuclear industry's standards, accomplishments, and degree of safety and reliability.

I have reviewed the draft Supplemental Environmental Impact Statement for the Waste Isolation Pilot Plant. I concur with the report's recommendation that the facility should be opened and the Test Phase should begin. TRU waste should be sent to the plant in a prompt and orderly manner, so that the industry and the nation can begin to demonstrate an ability to safely store radioactive TRU waste. Any other option or alternative appears to be a do-nothing or delaying approach, with no benefits to anyone.

Option #2, the 'No Action', is abominable. Why should anyone support this? No action is proposed; nothing would be done; nothing would be accomplished; no progress would be made. The American public welfare would not be improved. Only the obstructionists and environmental 'crazies' would be made happier.

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1-Jun-89: EX-00041, PAGE 2 OF 3

Option #3, the "Alternative Action", is only a mile better, nearly indistinguishable from the do nothing approach. This alternative approach would simply but obviously delay any further progress when so much progress has already been made. The progress to date has cost many millions of my and your's tax dollars. Let's not delay the benefits of that tremendous expenditure.

In support of the Proposed Action, let me offer some general views of the American nuclear industry, as viewed by a father of six children and proud citizen of Idaho. As previously stated, I have accumulated 24 years of intensive experience in the nuclear industry here in southeast Idaho. I have observed that industry closely, as both my livelihood and my family's quality of life has depended on it. Since I love Idaho and am proud to have found many fine neighbors and friends here, I am concerned for their sake also. I have formed the following conclusions:

1. The nuclear industry at the INEL has improved greatly in all areas of personnel, public, and environmental safety during the past 24 years. Personnel working at the INEL have been inherently concerned about the general and specific welfare of the state and its citizens. We love it here, and want the area to only improve in its quality of life.
2. The safety of the nuclear industry in Idaho is exceptional. In 1965, their standards already exceeded every other industry or occupation in the state, and it has improved steadily and dramatically over the years. The accidental risks to the employee and public are extremely low, particularly when compared with the accidental risks of other industries and occupations.
3. The impact of the nuclear industry has been good. Evidence of detrimental effects are few and often minimal. Where some detrimental effects have been found or detected, the INEL has been busy in correcting their practices and procedures.
4. The country as a whole should be supportive of increased use of nuclear power for the generation of electrical power. Nuclear power generation had been proven to be more efficient and less costly than any other generation means. The impact on the environment surrounding all of us is orders of magnitude less. Nuclear power spews no dust, noxious chemicals, sulfates, or greenhouse carbon dioxide to the atmosphere. This "none" compares to the thousands of tons of such releases from coal and oil power plants. The radiation

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1-Jun-89: EX-00041, PAGE 3 OF 3

released from nuclear plants is less than the radiation released from burning coal. The radiation effect is a fraction of a percent of that received by each of us from the sun and the rocks of Idaho.

5. In the USA and in Idaho, we should be crowing in praise, and shouting down those who become preachers of fear without examining the facts. In truth, in any comparison of nuclear power with nearly every other human activity, nuclear power is more safe and less risky by far. The preachers of fear about nuclear power experience more risk in automobile driving to this hearing than they do in years of living next to nuclear power.

Thank you for your time.

9-3

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WRITEN TESTIMONY FOR THE WIPP DRAFT SEIS HEARING  
 Pocatello, Idaho  
 June 1, 1989

My name is Brent G. Harris and I live at 1903 W. 190 S. in Madison County, Idaho.

I am here today to express my support for the Proposed Action Alternative contained in the supplement to the Final Environmental Impact Statement for the Waste Isolation Pilot Plant (WIPP) located in southeastern New Mexico.

As an engineer and lifetime resident of southeastern Idaho, I believe that there is a definite need to develop a permanent repository for transuranic waste. Although it is not an imminent danger to the environment, the transuranic waste currently being stored at the Radioactive Waste Management Complex of the Idaho National Engineering Laboratory should be moved to a permanent repository.

I have confidence that the WIPP facility has been properly engineered and poses no significant threat to human safety or the environment. It is certainly a major improvement over the current temporary storage methods used across the nation for transuranic waste. In addition, I believe that the TRUPACT-II container which will be used for transporting this waste is adequate to withstand the credible, or possibly incredible accident scenarios which have been postulated.

A major concern of mine is that as a nation we have reached the point where it is almost impossible to construct and operate any major industrial facility. Although I encourage scrutiny of any major project to uncover financial waste, disregard for safety, or neglect of the environment, I believe we have reached an imbalance where a standard of no risk is expected.

If we want to progress it is necessary to accept some risk. Most of the scientific inventions which make our life better involve some element of risk. Examples are the automobile, the airplane, electricity, medical X-rays, etc.

Although our society is based on democracy and freedom of speech, at times we go too far in catering to a minority viewpoint, thus hindering the progress of society in general. An expressed concern for safety or environmental damage, however small or unfounded, can delay or stop a project and cost the taxpayers millions of dollars. There are times when the opinion of the majority should rule.

It is ironic that many of those who complain the most about storing transuranic waste in Idaho also protest the use of WIPP, even though it would allow the transuranic waste

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1-Jun-89: EX-00042, PAGE 2 OF 2

currently stored at the INEL to be removed from the state.

I support Governor Andrus in his efforts to speed up the opening of the WIPP facility by not allowing further shipments of Rocky Flats waste to Idaho. His stand on this issue has given Congress the impetus to overcome bureaucratic entanglements.

Again I would like to voice my support for the Proposed Action Alternative contained in the supplement to the Final Environmental Impact Statement for the Waste Isolation Pilot Plant and express my thanks for the opportunity to testify.

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3.3-3

1-1

June 1, 1989

To the DOE:

I would like to thank the DOE for holding this hearing in Pocatello.

I have some questions about the WIPP project.

81 - Concerning the TRU waste that has been stored out at the INEL- I understand that fully half of this waste is going to be reclassified as low level waste and will therefore not go to WIPP. Has the level of radioactivity of this waste become less over the years? How has it changed? It bothers me that is it being reclassified, perhaps, for convenience sake.

82 - Concerning the transportation of TRU waste from INEL to WIPP- Is train transportation is safer than truck transportation why does DOE recommend truck transportation? How many truck drivers are going to be involved? Will an intensive background check be done on each and every driver? Will they be checked for their driving record, political activities, drug and alcohol use, mental health? Will these drivers be expected to make the trip in a certain amount of time? I am concerned about a chronic problem in the trucking industry that drivers are expected to make their hauls in record time, therefore being forced to drive faster and longer than is safe. Will this be the case in hauling TRU waste?

83 - Concerning the possibility of an accident- I'm worried that the plans for clean-up will be on paper and in theory but that there will not be a specific rehearsed procedure with all possibilities being covered. It is not enough to give local officials 1 or 2 days training and then tell them to call DOE if there is an accident or problem. Everything and everyone needs to be on line and ready for action before anything happens. For example, how many radiation monitors will be available for people going in to deal with an accident?

In closing, I am not opposed to WIPP, I just want to be sure everything is done correctly from beginning to end regarding political agendas. I think the best possible solution to the nuclear weapons waste problem is to not create any more.

Kays Turner  
307 North Buchanan  
Pocatello, ID 83204

7.9-7

7.32.4  
7.32.1-8

7.12.9.1  
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3.6-1

6/1/89

44 Williams Dr.

Pocatello, ID

83204

To the Department of Energy,

The proposed Waste Isolation Pilot

Plant to be established as a permanent

disposal site for radioactive waste and

the transport of this waste, inspires the

following questions and concerns:

1. The words "permanent disposal" imply

that there is a material with a half life equal

to that of the radioactive waste in which it

will be stored safely and permanently. What

is the material called? And if there is no such

material, what plans exist for the transfer

of the waste to new protective containers when the

old ones begin to break down?

2. Is there a possibility of an accident during the

movement of this waste, what sort of measures

have been planned by the DOE to protect people

and the environment from contamination?

3. And why with the choice of an accident so

much greater if the waste is moved by truck, is

the DOE not planning to ship the waste by

rail?

4. And finally, working with the safety and

transportation of radioactive waste becoming a major

concern throughout the United States, will additional

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3.6-1



*are you proposing the building of more plants  
that will create more waste? Or alternatively  
await your reply to my questions.*

*Sincerely,  
Jeff Davis*

36-1

I am Diane Stinger, 840 N. Garfield, Pocatello, ID 83204. I am not against the Waste Isolation Pilot Plant but I do have many concerns about how nuclear waste will be transported through our beautiful western United States.

On May 31, 1989 the Idaho State Journal had an article in which DOE officials said there is a 50 percent chance WIPP is located near Carlsbad, N.M., will begin accepting transuranic and low-level waste from the INEL and other nuclear research and production sites in September. I would like to know what exactly is transuranic waste? What is the half-life of this waste and what is the life of the containers it will be buried in? What happens to the waste when the containers break down and are no longer effective to hold the waste? Are they shipped back to the INEL to be once again placed in containers with only a 20 year use and then trucked back to New Mexico? Creating a continual back and forth trucking of nuclear waste.

I am also concerned with the idea of truck versus rail in moving the waste to New Mexico. What kind of screening will the truck drivers of the waste shipment be given? Will the truck drivers drive non-stop to WIPP or will there be stops to eat or sleep? Will there be two drivers to relieve each other?

What kinds of precautions are being made to a 60 mph impact with containers of nuclear waste? Who is being trained to deal with clean-up when an accident occurs (which is very probable with the amount of shipments that will be made). I heard the figure 11-000777? Are firemen along the route being trained for clean-up or will this be a special crew that will be dispatched from the INEL or WIPP to travel to the accident, while the waste spews into the air and on the ground or possibly into a water source. If there are going to be local clean-up crews are they to be given monetary compensation for training and actual clean-up? What do people who are near an accident do? Will the public be given instructions of Do's and Don't's if they are near an accident?

Lastly, I wonder what industries feel when considering moving their companies to Pocatello or anywhere in S.E. Idaho, when they hear that waste will be on our highways and taken through some of our cities. How many would be tourists will drive to another destination to avoid an accident with a truck hauling nuclear waste?

Thank you for giving me this time to voice my questions. My reason for coming here is not to help, it is to possibly help in some small way to keep our precious environment as clean as possible for ourselves and future inhabitants of our wonderful planet Earth.

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7.12.6-5  
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7.32.1-6

7.3.11-2

7.3.4.1-1

7.12.9-1  
7.12.9-7  
7.12.9-11

7.2.3.1

Statement of  
 Jack T. Barraclough  
 for the  
 Waste Isolation Pilot Plan (WIPP) Site  
 Quality Inn, June 1, 1989  
 Pocatello, Idaho

My name is Jack T. Barraclough. I am a Certified Professional Hydrologist with 40 years experience in Subsurface and Surface Hydrology in Idaho and Florida. I received from the U.S. Geological Survey as the Research Project Chief of the Waste Hydrology Project at INEL. For the past 7 years I have worked as a Scientific Specialist (Hydrology) with EG&G Idaho, Inc. in Idaho Falls. In addition to a wide variety of hydrology assignments, I have spent 30 years on the migration and fate of radioactive, chemical and organic wastes. I have been review panels concerning Waste and Waste Remediation Laboratory, W-12 Plant, Savannah River Plant, and Waste and Environmental Laboratory, Yucca Mountain Repository, and Los Alamos National Laboratory. In addition, I have served with groups to evaluate waste treatment sites in Idaho, developed hazardous waste criteria for Idaho, studied the geohydrologic effects of Agent Orange for the U.S. Air Force in Florida and Mississippi, and studied and developed clean up programs for organic contaminants at two Air Force bases in California.

This experience has combined the study and evaluation of geology, hydrology, geochemistry, seismology, geophysics, geomorphology, and meteorology. Physical hydrology is being used to evaluate various aspects of these parameters on the suitability of waste disposal facilities for various and future conditions. The studies of the geosciences in the various geologic settings has provided methods and techniques of evaluating selected sites for disposal methods.

Over 20 years ago I recommended to the Atomic Energy Commission that the Radioactive Waste Management Company (RWMC) was a suitable location for permanent disposal of Buried Transuranic Waste (BTU). Eventually flooding from local snowmelt or from the Big Lost River would provide the water for transport of BTU waste downward to the underlying Snake River Plate aquifer. This may take hundreds of years to occur. I stated that the RWMC is suitable for the disposal of fission product waste if the land surface is suitably maintained. Therefore, for 20 years I have watched, waited and studied a suitable site for permanent disposal of the BTU waste stored above ground at the INEL since 1970.

A careful and thorough review of the geoscience aspects of the Los Medanos Site (the WIPP Site) essentially satisfies the stringent criteria that has been carefully developed for a permanent repository with engineering safeguards that will limit radionuclide transport so that future mankind will not be affected. No geologic site is perfect or absolutely ideal and each site will deviate from the ideal. However, the WIPP Site approaches the ideal site.

The geohydrologic setting of the WIPP Site provides a number of favorable conditions to minimize waste transport. The rock salt of the Salado and Castle Formations are about 3000 feet thick, the hydraulic conductivity is about 10-5 feet per day, and the porosity of 0.005. The hydraulic conductivity of the Rutler aquifer and the Delaware Mountain Group (above and below the WIPP repository) is very low and the highly mineralized ranging from 1/10 to salty as sea water in the Rutler and to 8 times as salty as sea water in the lower aquifer. The distribution coefficients are large which greatly retards radionuclide migration.

The WIPP Site has almost no surface recharge, aquifers with very low permeability, salt as a media, no aquifers in the salt, high retardation factors, travel times of a few feet per year, and highly mineralized water. The predicted performance of the repository are credible and well developed. The WIPP Site almost becomes a repository hydrologists dream.

To those who oppose the site, I ask the question "Is the site really unsuitable or do you oppose the site so the DOE won't be able to dispose of the BTU waste and cause further delay?, prevent DOE from keeping its promises to remove waste from INEL, and increase the expenditure of funds for waste disposal which cannot be used for other purposes?"

The geohydrology of the WIPP Site is very favorable for a permanent repository that along with proper engineering safeguards and suitable packaging will allow the BTU waste problem for many years to be resolved and delayed long enough lets us apply both a technical and geopolitical solution and open the WIPP Site as soon as possible.

Sincerely,

*Jack T. Barraclough*

Jack T. Barraclough  
 Scientific Specialist  
 EG&G Idaho, Inc.  
 P.O. Box 1625  
 Idaho Falls, ID 83415

Page 1 of 3  
June 1, 1989

Mr. Gerald Alletzhauser  
755 South 19th Street  
Pocatello, Idaho 83201

My name is Jerry Alletzhauser.

I have been a Quality Assurance professional for over 30 years. As you know, the SEIS we are here to discuss focuses on several key areas of information. Due to the limited time, I have chosen to address only two (2) of those items.

The first item, packaging of contact-handled waste, has to do with the safe transportation of the waste. The SEIS discusses design changes in the waste containers, known as TRUPACT-II. There was a rigorous quality assurance effort to ensure the development of an acceptable test plan and to oversee the actual tests and analyses required to have the containers certified by the MRC. I feel confident that this program has assured us that even in the event of an accident the TRUPACT would serve its purpose and contain the waste.

The second item I wish to discuss is the proposal for the implementation of a test phase. This test phase will include an operations demonstration which will review the ability to safely and efficiently package, transport, and place waste in the WIPP facility. The test phase also includes a performance assessment to determine how WIPP will behave relative to a predetermined set of criteria or expectations. An alternate proposal of the SEIS would suggest that these studies be conducted in sealed bins rather than in WIPP. To my way of thinking, this increases the uncertainty for predicting repository performance, we lose operating

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7.11-3

Testimony of Gerald Alletzhauser  
June 1, 1989  
Page 2 of 3

experience, and we greatly increase costs. By utilizing the proposed 5-year test plan we will be better able to assess the overall integrated operation; that is, we will be able to assess waste management activities at generator sites, transportation of waste, and WIPP facility operations. What if this 5-year plan indicates we can not demonstrate compliance with EPA regulations? The SEIS provides a contingency. The waste must be retrievable, and it could be retrieved, and other options would be evaluated. Thus we are talking about waste storage for 5-years, then WIPP becomes a permanent disposal site only if the concept is proven during the test phase.

In his testimony before the U.S. House of Representatives, Committee on Armed Services, DOE Defense Nuclear Facilities Panel, the Secretary of Energy, Admiral James D. Watkins stated, "Regarding the waste isolation pilot plant plan, my approach to opening WIPP is quite simple, all safety and environmental issues will be resolved as well as confirmation of facility readiness or WIPP simply will not be opened."

The SEIS evaluates three alternatives:

1. No Action - this has previously been found to be unacceptable in the final environmental impact statement completed in 1980. It is not an environmentally sound choice.
2. An Alternate Action - which I previously discussed which requires that tests be performed at a location other than underground at WIPP. In my previous discussion I gave my reasons why this choice should not be considered.

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Testimony of Gerald Alletzhauer  
June 1, 1989  
Page 3 of 3

The Phased Approach - to me this appears to be the only viable approach. I know that I would feel comfortable that at least we are starting to move waste, and moving it in a responsible way. Let's get on with it and confirm the readiness of the WIPP facility so that Secretary Watkins will feel comfortable in declaring the opening of WIPP.

This concludes my oral presentation.

1-1

WIPP Hearings - Pocatello, Idaho - June 1, 1989

Good afternoon. My name is Dr. James L. McNally and, since May 1st of this year, I am a new resident of Idaho Falls.

I have followed the continuing saga of nuclear waste disposal all of my professional career. I am a graduate of the University of Tennessee, Purdue University, and Harvard University. Prior to coming to Idaho last month, I was Vice President, Nuclear Services, for the Tennessee Valley Authority, a U.S. Government Utility. Radioactive waste disposal was one of my responsibilities. I might add that I own and operated a cattle farm for the past ten years that is within 15 miles of the USDOE Oak Ridge Operations, one of the sources of waste for the WIPP facility.

The generation of waste is one of the penalties associated with the many benefits of a modern industrialized society. Even though we have an obligation to minimize, as far as practical, the generation of new waste, of whatever kind, it will continue to be generated and must be safely disposed. In the case of defense related waste, we have a legacy of 40 years which is stored at a number of facilities and in a number of ways. Many of these facilities are inadequate for the continued long term storage of these materials. It is absolutely essential that this waste problem be solved as timely as possible.

I firmly believe that the Waste Isolation Pilot Plant is a responsible step toward solving the long term radioactive waste storage problem. I also believe that reasonable alternatives have been examined in a rigorous manner. I strongly support the Department of Energy's proposed alternative to proceed with a phased approach.

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7.3.1.1-19

My name is Brad Anderson. I'm in the ninth grade at Alameda Junior High School in Pocatello, Idaho.

I can see where some people come up with ideas to be afraid of radioactive waste. I have a science teacher who tells us about how dangerous the INEL is. But when I asked her for the source, she only said "the news media." She never was able to tell us what the dangers were, just that it's dangerous.

Unfortunately, we don't always get straight information all of the time. I've heard people say "a gram of plutonium can kill everyone in the world." That just illustrates how badly this subject is sometimes misunderstood.

I am not afraid of nuclear energy nor of nuclear wastes, because I know many of the people here in Idaho who work with them. Because I know that they appreciate our environment and are as concerned about public safety as I am, I trust them. I share their desire for the WIPP to open in New Mexico so the final disposal of radioactive wastes can be demonstrated. The WIPP should open as soon as possible.

D. Bradley Anderson  
909 Lucille Ave.  
Pocatello, ID 83201

1-1

## COMMENT FOR WIPP-SEIS

*Anthony J. Winnola, Jr.*  
Anthony J. Winnola, Jr.  
2152 John Adams Pkwy.  
Idaho Falls, ID 83401-5240

I would like to thank the Department of Energy for allowing me to come here today and provide my comments concerning the Waste Isolation Pilot Plant, Supplement to the Environmental Impact Statement.

As I began to put my thoughts together about what I wanted the DOE to know, I asked myself, "What is the purpose of this public meeting?" and the answer to this question is stated in the DOE's invitation for public comment; namely the DOE wants to know my beliefs concerning the three alternatives they have presented to the public. The DOE does NOT want to spend taxpayers dollars by coming here and listen to me tell them how to do their job, nor do they want me to tell them that they should shift their priorities and do something else, nor do they want to hear whether or not I believe the United States should continue to generate more radioactive wastes. THEY ARE HERE TO FIND OUT WHAT I HAVE TO SAY ABOUT THEIR THREE ALTERNATIVES PRESENTED IN THE SUPPLEMENT TO THE EIS.

I'm not here today to discuss the technical issues of the WIPP. I'm here only to support the common sense decision.

As I was getting ready to come to work this morning, I was performing one of my weekly chores, which is to go through my house and pick up four trash cans that I have throughout my house. I then placed this trash in a garbage bag, tied it at the top and placed it out in front of my house near the street curb. As I did this, I thought "What would this neighborhood look like if the garbage man didn't come by once a week to pick up my trash and take it to the dump?"

I then asked myself the question "What if the City Council announced that the city dump was closed for the next five years, because they had to run tests down at the city building to determine if the dump was an acceptable location to dump my trash?"

And the third question I asked myself was "what if the City Council said they were going to continue to pick up my trash, take it to a new dump site, and run tests at the new dump site to qualify the new site?"

Of the three questions I asked myself, I determined there is only one alternative: Take my trash to the new dump site and run the needed tests on actual trash.

As you can see by applying my example to the WIPP alternatives, THERE IS ONLY ONE CORRECT ALTERNATIVE, and that is to "Proceed with a phased approach to determine whether the WIPP should become a repository for the disposal of transuranic waste."

1-1

COMMENT FOR WIPP-SEIS (Continued)

Anthony J. Vinola, Jr.  
2152 John Adams Pkwy.  
Idaho Falls, ID 83401-5240

What are the benefits to this alternative that the other two do not provide?

1. The transuranic waste will begin to find a new safe home. It will not be in a location such that it can ever get into a water supply or into the food chain, and therefore will be harmless to lifeforms.
2. Needed research on actual transuranic waste, while in a permanent buried state can be performed and be fed into new designs for a national repository for permanent disposal of these wastes from the commercial nuclear power plants across the United States. (As a side-light, the creation of a qualified national disposal site for commercial nuclear power plants will help utilities decide to order new advanced nuclear power electrical generating stations).

I am also convinced after studying the Environmental Impact Statement and its Supplement that DOE has considered all potential, probable events and that the planned Emergency Response procedures are excellent and would truly handle any emergency.

In conclusion, not only do I support the alternative to proceed with the phased approach, I as a tax payer do not want to see any further delays in this program. If Congress cannot get it done so hard to cause the Speaker of the House of Representatives to resign, then there can be no reason for them not to enact the appropriate legislation for (and withdraw).

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7:12:97

1-1

Can waste be shipped to the U.S. or to the U.S. by China? 350 d. Hager, Docatolls, Idaho 53204 on June 1<sup>st</sup>, 1989.

1. How much of DOE's radioactive waste will be shipped to WIPP?

During the 5 year test phase, will all of the DOE waste be shipped to WIPP? If not, what will it be shipped to? How much will it cost to ship? If you can find a way to ship DOE's waste to WIPP, will DOE's alternate storage plan?

After the test phase, will DOE's waste be shipped to WIPP or will it be shipped to Idaho? What happens when WIPP is full? What are DOE's plans then?

2. How many waste shipments will you attempt to do on their way to WIPP?

Why are these shipments by truck if train transportation is superior? DOE studies indicate?

What agencies or departments will be involved in emergency? If it is local, regional, or how they have been trained? If it is INEL, how long will it take INEL to respond?

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7:10:2

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3:1-1  
3:3-1

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5:1-1-1

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7:12:81  
7:12:93  
7:12:97

3. Since the process experimental Salt Plant (PREP) at INEL will prove waste to be shipped to INEL, the SEIS should include an assessment of the environmental impact of PREP operation.

4. One of the solutions to the water problem with the plant is to stop producing it from the plant. A good building should be built and the plant should be moved there.

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PUBLIC COMMENT ON WIPP-SEIS DOCUMENT

Our nation is faced with many decisions today, some of them tough decisions; but nonetheless, ones that must be made. Radioactive Waste is not an Idaho problem, nor is it a New Mexico problem; rather it is a national problem that requires a national decision.

Whether contaminated waste results from a Pro-life activity such as medical technology, or as a by-product of a Department of Defense program, it represents a significant, potential danger to all of us. It would be nice if the only radioactive waste with which we have to deal, was from nuclear activities. Unfortunately, it is not a perfect world. The fact is, as we were today, of our own choice, sharing differing viewpoints. I am sure that as a result of our defense technology, the opportunity exists in the "controlled" country to voice openly the positive and negative positions being stated. When I live in a free country, however, the cost has been great. Many tests have been given to make and keep this country free. Hand-in-hand with these tests is our defense program; and yes, the radioactive wastes that this program creates. To think we can "live freely," without creating these wastes is to kid ourselves. More appropriately, a proactive effort is required to responsibly manage these "by-products" of our freedom.

After studying the history of the Waste Isolation Pilot Project, and becoming familiar with the technology involved, it's my opinion that we "Get On With It." This opinion is based upon the following: The Waste Isolation Pilot Project was initiated in 1974. Prior to that, in the mid-1950's, a selection process was begun to find an acceptable site that would conform to the National Academy of Science's statement, recommending "suitable deposits as a storage medium for nuclear wastes. During the early '70's, the salt deposits in eastern New Mexico were identified as best sites, the site selection criteria. Since that time, our country has invested the larger part of \$1 billion dollars in site preparation, construction and programmatic activities. The point is, the investment of both time and money is tremendous. This is NOT a rapid fire project being force-fed through the "system."

I'm confident alternatives will continue to be evaluated in regards to the ultimate storage facility for transuranic wastes (remember, it's not a perfect world). The WIPP represents an alternative which has matured to the test phase. The first five years of operation are intended to demonstrate the safe and efficient handling, transport and placement of waste in an actual facility. After five years, the performance of WIPP as a storage facility will be reviewed, and if necessary, all waste can be retrieved at that time.

During those first five years, WIPP personnel will also perform scientific investigations into the behavior of Rock Salt and into the interactions between the rock and radioactive wastes in a variety of forms.

In conclusion, the WIPP is designed to be, as its name identifies, a Pilot Test. Yet, one that has been 30+ years in the planning, and one desperately needed if we're to move the technology forward. For anyone, with even cursory knowledge of the present storage methods, the WIPP represents a significant, yet reversible (if necessary) step in the right direction.

C. Douglas Cabral  
(208) 775-4935

WASTE ISOLATION PILOT PLANT  
SUPPLEMENTARY ENVIRONMENTAL IMPACT STATEMENT  
PUBLIC HEARINGS

I support continued development of the Waste Isolation Pilot Plant (WIPP) as a repository for the disposal of transuranic (TRU) waste. I believe that the best way to test the WIPP facility is by placing actual TRU waste underground as opposed to conducting above-ground tests only or taking no action. Enough studies have already been done to show that the WIPP is a very good site for radioactive waste disposal. The time has come to make a test with actual waste.

The salt deposits at the WIPP location are geologically stable and have many properties that would make them suitable for a waste repository. The New Mexico community would benefit from increased employment. The sparse population of the area makes it an ideal site.

I believe that the WIPP will provide valuable information on disposal of waste contaminated with radioactivity. Although the TRU waste primarily comes from processing plutonium in defense facilities, the information about underground repositories would apply to commercial waste disposal.

Much of the TRU waste that is currently stored at the INEL would be sent to the WIPP. Underground waste in a repository is much better than above-ground or near-surface storage at a temporary facility. Sending this waste to WIPP would do much to restore confidence in the waste disposal plans.

A successful demonstration of safe permanent disposal of TRU waste at the WIPP would be a positive first step toward disposal of all nuclear wastes. Perhaps this would also be a step toward more public acceptance of nuclear power and less dependence on foreign oil.

So I suggest that we get the WIPP in operation and get on with solving the nuclear waste problem.

*Robert L. Donovan*  
Robert L. Donovan  
1445 Vega Circle, #2  
Idaho Falls, ID 83402

My name is George Pomak and I live in Pocatello at 1598 Juniper Dr. Thank you for the opportunity of allowing me to speak at this hearing regarding the Draft for the Supplement to the EIS.

Let me begin by describing my background. I am a person with deep convictions, especially those of environmental concerns. I, along with my family enjoy quiet activities such as backpacking, hiking, skiing, and sailing. I also work at the INEL.

I support the WIPP project wholeheartedly for a number of reasons.

1) The WIPP concept of centralizing wastes, in this case transuranics, ultimately focuses any concerns at a single location. Otherwise, the experts will be dividing their time trying to solve a myriad of unrelated problems (One here, one there). What if WIPP is not implemented? Even though a site specific problem may occur at a specific location, resolutions might be applied to all areas. It would be too confusing.

2) It is very prudent to separate the WIPP program into two parts as discussed in the Supplement Draft of the EIS. The two phases being a demonstration with an assessment follow-up and a full scale operation. This shows a strong desire for a safer, long-term waste disposal.

3) A successful program will provide confidence and lay the groundwork for future storage projects, such as those for immobilized high level waste.

4) The casks that are used for transportation are designed to stay intact if an accident occurs. I believe there would be a lot less chemical spills on the highways or railways if such regulations were imposed on chemicals.

I support the WIPP project as proposed by DOE.  
Thank you very much.

June 1, 1989



*MIKE WJADE 63201  
4127 SAWTOOTH 870565*

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The cold war of years past has motivated the U.S. government to manufacture weapons with a religious passion. Our national wealth, environment and well-being were considered reasonable sacrifices to the idol of national security. World events now signal the end to the cold war allowing the national security bureaucracy to refocus its efforts, hopefully some of which could go towards cleaning up of the environmental mess it created.

The national attitude toward our deterrent force needs changing. The number of nuclear weapons must be made public and then a public debate on the need for more. Keeping our nuclear deterrent strength secret won't make it more effective.

I can see how the opening of WIPP and PHEP could benefit our country but only if they served in a clean up effort. If used as an excuse by the D.O.E. to redouble weapons manufacturing it would do us great harm.

I say it's time for the D.O.E. to abandon its neglect of public health and safety and with these new facilities try to regain public confidence. The new facilities must be divorced from the old ways of the D.O.E.. I mean the L.O.E. that dumped some 16 billion gallons of liquid wastes into wells that feed directly into the Snake River aquifer and in 1978 because of an operator watching the world series on T.V. allowed the release of 8 thousand curies of radioactive iodine

Krypton, and Xenon into the atmosphere, more than enough to threaten the health of anyone down wind. These incidents and numerous others were always concealed if possible from the public. This is not how these new facilities should be operated.

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1-JUN-89; EX-00055, PAGE 2 OF 3

The ruling elite must profit from having nuclear weapons and that makes weapons manufacturing a profit making business. Like all such businesses the cheapest means of production will be used and this calls for a strong oversight agency to protect the environment, workers, and the people living near this activity. At present the E.P.A. is not effective in this role since began in 1981 drastically cut the E.P.A.'s radiation monitoring program well below the levels cited as adequate by the general accounting office of the federal government. To protect the public these new facilities have to allow independent scientists and state agencies to act as oversight and they must comply with all federal and state health safety laws.

The S.E.I.S. neglects many important safety issues. For instance why should hazardous waste be placed if the safety of doing so is not known. What is the plan if it is so misplaced and later turns out to be unsafe. Would we just have to live with the contamination or would other facilities be ready to take it then. What is the rationale for putting off the clean-up of the dangerous buried waste and instead play shell games with the stored waste. Wouldn't moving this stuff around the country on trucks in unproven containers increase its mismanoeuvring. Why isn't clean up given priority over the opening of WIPP. Why isn't the public included in the debate on transportation alternatives and the acceptability of the effects and damages to the environment. I think something this important should have a well thought out plan, one that the public could have confidence in.

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In summary I'd like to say that without strict oversight by citizens protection agencies I find WIPP and ERPP to be a source of insecurity to me and my neighbors. I think that ERPP at the I.N.E.L. should operate only so long as an effective outside agency has controls of monitoring the environmental impact. It should be shut down for modification if there is any danger to the environment in any way. I will continue to protest against this abuse of my environment by the I.N.E.L. until a satisfactory resolution is reached.

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Katherine R. Daly  
1135 E. Bonneville  
Pocatello, Id. 83201

Testimony at D.O.E. public hearing concerning the Draft S.E.I.S. for the Waste Isolation Pilot Project, Pocatello, Idaho Thursday, June 1, 1989.

I'd like to start by thanking Department of Energy officials for holding this hearing in Pocatello, and for considering the testimony of Idaho residents.

The Waste Isolation Pilot Plant is a D.O.E. Project established under public law to demonstrate safe permanent disposal for radioactive waste. Don't you think "safe" is the key word there? I'm concerned that the urgent need for such a repository is causing the D.O.E. to leave safety concerns unspoken. I request that the opening of the W.I.P.P. facility be postponed until E.P.A. health and safety standards can be guaranteed. We have guidelines established... let's use them.

If in fact W.I.P.P. is not ready for use this September, does the D.O.E. have other plans for waste storage? If so, where does the I.N.E.L. fit into the picture?

In keeping with the issues of health and safety, I would like to ask the D.O.E. to address the problem of buried waste. That, it seems, poses a greater health threat than stored waste. It is the buried waste that has led to the contamination of our soil and water. Let's devote our expertise and funding to the task of cleaning up that buried waste. I believe there should be a responsibility to the future to clean up the waste which has already been produced. That responsibility lies with the D.O.E.

In closing I would like to lend my support to the Bilateral Plutonium Cutoff Legislation proposed by Senators Wirth and Kennedy. Let the U.S. take the lead in creating a stronger and gentler world by offering a leadership role towards disarmament.

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TESTIMONY by A. M. Tschaeche  
1693 Claremont Lane  
Idaho Falls, Idaho

Presented at a Public Comment Hearing  
on the WIPP-SEIS Document on June 1, 1989

My name is Al Tschaeche and I live at 1693 Claremont Lane in Idaho Falls, Idaho. I am here to support fully the US Department of Energy's alternative 1) "Proceed with a phased approach to determine whether the WIPP should become a repository for the disposal of transuranic waste" as stated in the WIPP-SEIS.

An important development in the United States Supreme Court is important to note. The periodical "The Energy Daily" published on Wednesday, May 17, 1989 notes that the Supreme Court has scaled back the National Environmental Policy Act. In two Oregon cases - Marsh vs Oregon Natural Resources Council and Robertson vs Methow Valley Citizens Council the court overturned the Ninth Circuit Court of Appeals, based in San Francisco. The 9th Circuit has taken an expansive view of NEPA in recent years.

In the two cases, which the court says are to be viewed together, all nine justices ruled that the Appeals Court erred on the key issues of worst case analysis and mitigation. In Robertson, the court held that:

- "NEPA does not impose a substantive duty on agencies to mitigate adverse environmental effects or to include in each (Environmental Impact Statement) a fully developed mitigation plan." The court

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ruled that federal agencies must take "a hard look" at environmental consequences. But it is "well settled," the court said, "that NEPA itself does not impose substantive duties mandating particular results, but simply prescribes the necessary process for preventing uninformed - rather than unwise - agency action."

A "reasonably complete discussion of possible mitigation measures is an important ingredient" of an environmental statement, the court said. But "there is a fundamental distinction between a requirement that mitigation be discussed in sufficient detail to ensure that environmental consequences have been fairly evaluated, and a substantive requirement that a complete mitigation plan be actually formulated and adopted."

- "NEPA does not impose a duty on an agency to make a 'worst case analysis' in the (Environmental Impact Statement) if it cannot make a reasoned assessment of a proposed projects environmental impact."

To me this Supreme Court decision means that the DOE does not have to have a full blown environmental impact mitigation plan in place before WIPP operations are initiated. DOE merely needs to have evaluated to the best of its ability the possible impacts. I think DOE has done that and therefore WIPP should open on schedule as early this fall as practicable.

The other Supreme Court ruling in Marsh found that:

- In deciding if they need to prepare a supplemental environmental impact statement, agencies should apply a "rule of reason" test. The need for a supplemental statement, the court said, is "not expressly addressed in NEPA;" it is implied in the law and in agency regulations implementing NEPA.
  - Court review of whether a supplemental statement is required should be based on the "arbitrary and capricious" standard of the Administrative Procedures Act, and not the "reasonableness" standard of the 9th Circuit imposed. The result is to give agencies more discretion in rejecting proposals for supplemental statements.
- To me the Supreme Court's ruling implies that the supplemental environmental impact statement for WIPP which is the subject of this hearing is probably not even necessary. I believe that the DOE has done an admirable job in assessing the probable environmental impact of the operation of WIPP.
- The truth is: defense wastes exist. They won't go away. WIPP is a prototype facility to demonstrate a permanent solution. WIPP has value to the defense and nuclear industry even if waste is disposed of in a geologic medium different than bedded salt.
- The majority of scientific opinion still supports deep geologic disposal for long lived radioactive wastes.

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Nothing is 100% safe. No government regulations require absolute safety. The nuclear industry and even the Department of Energy have created a safety record that is better than any industry handling hazardous materials.

The radiation doses from transportation of materials to WIPP and from operation of WIPP even at full capacity will produce radiation exposures to individuals which are negligible. There is absolutely no proof, scientific or otherwise, that demonstrates that low levels of radiation exposure on the order of the doses that would be produced by WIPP operations cause any harm to humans whatsoever. As a Health Physicist who has been active in radiation protection for 35 years I consider the risk of radiation injury to anybody from the WIPP operations to be zero. As I just stated, there is no evidence to demonstrate that low levels of radiation produce any harm to humans at all.

For the reasons stated above I reiterate my belief that WIPP should be opened and operated as presently scheduled.

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1-Jun-89: EX-00039, PAGE 1 OF 2

W.I.P.P.

My name is Krys Sampson

I live at 726 S. 3rd in Pocatello, Idaho.

I am the mother of three sons, a homemaker, not a public speaker, but the Dept. of Energy's pushing for the Sept. '89 opening of the Waste Isolation Pilot Project at Carlsbad, has caused me great concern.

There are many unanswered questions about the W.I.P.P. that the Dept. of Energy seems to feel don't need answers, until later, after they have already begun the shipment and storage of waste. Then it will be too late!!

I would like the W.I.P.P. draft S.E.I.S. to address the issue of why W.B.P.P. should not have to meet Federal and state E.P.A. standards before it opens? This should be a top priority since E.P.A. standards are set to protect the health and safety of the public and our environment.

My second question is why does the Dept. of Energy want to move, and place into underground storage, waste that is presently being monitored and is posing no immediate threat to health, safety or the environment? I would like the Dept. of Energy to address the more real threat of contamination from already buried TRU-waste that is leaking into surrounding soil and water supplies?

Thirdly, and for me, most importantly, is why transport thousands of cubic meters of nuclear waste across so many miles and thru so much of this country's population? It is inevitable for an accident to occur. This seems acceptable to the Dept. of Energy even though there will be loss of lives and injuries. How many will be determined by how

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catastrophic the accident. I prefer not to have any of my loved ones or myself be one of these statistics!

I would ask the Dept. of Energy to seriously look at alternatives to W.I.P.P., such as a combined program of clean-up and permanent on-site storage of all nuclear waste.

The questions are many! The Dept. of Energy needs to answer each one with much consideration given to the future, not just the short-term.

Maybe the W.I.P.P. has a place in the over-all picture of nuclear waste storage, but it is not the whole answer and needs further study before it can be safely used now or in the future!

Thank-you!

David Hermal  
Bo 881  
Victor Zed PS155

I do not believe that the WZIF facility should be allowed to open prior to meeting EPA standards and regulations. If WZIF cannot demonstrate that it can meet these standards the grave danger that the OOC will simply be creating another contaminated site. I also question the SETS on the following issues:

1) What will be Idaho's role in the WZIF process. Particularly an concern about the prep indicator at the INEL. I've done a lot of the INEL and am now their special agent in charge of the indicator. Similar incident in Colorado has been shut down. Will the WZIF facility become a focal point for TRU wastes headed for WZIF. On this issue I think the waste question of how TRU wastes will be handled throughout the country need to be addressed. The waste processing plants to be built at all generating sites, if not where will these wastes be handled.

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Why if trucks are less safe than trains is the OOC being truck. The shipped OCS are not to be approved. The accident scenarios presented in the ETZ are unrealistic. The SETS does not address the issue that the equipment necessary to deal with a spill is not available to emergency personnel.

The OOC needs to come up with a comprehensive plan for all the wastes in the OOC facilities. The WZIF will only handle a small percentage of the wastes - what are the alternatives to handle these wastes.

Thank you -  
DWH

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1-Jun-89; EX-00060, PAGE 1 OF 1

Herter/Winship  
PO Box 215  
Victor, ID 83455

June 1, 1989

To Whom This Concerns,

I am writing you in lieu of being able to be at this evening's hearing on the Waste Isolation Pilot Project (WIPP). ClearWIP's Supplemental Environmental Impact Statement (SEIS) will address the viability and safety of the New Mexico site. It is my concern that the SEIS also include how the waste is handled before it reaches WIPP. Specifically, I am writing about pre-treatment and transportation of the waste.

From what I understand, to reduce its bulk, INEL's hazardous and radioactive waste will be incinerated prior to shipment. Being someone who lives downwind of INEL, this concerns me greatly. Such processing should not be able to begin until public health and environmental effects have been thoroughly reviewed. A similar facility in Colorado was recently shut down for safety reasons. Will INEL's design prevent such problems? Have alternatives to incineration been explored?

After the waste has been pre-treated, how will it be transported to WIPP? What type of scrutiny and safety regulation does the DOE have to adhere to in relation to shipment? It has been estimated that over 10,000 shipments will cross Idaho. It is my request that whatever method is chosen is part of an impact statement.

While I applaud the DOE for starting to address the clean up problem, I also feel that the above questions must be answered before any pre-treatment or shipment occurs.

Lastly, I would like to take this moment to encourage the DOE to explore hazardous and radioactive waste management methods in addition to WIPP. Even if WIPP is successful, it will handle only 1% of INEL's waste. Funding is limited. I vote to spend money to research how to manage the remaining waste rather than to fund SIS which, in addition to plutonium, will produce more unmanageable waste. I feel much more threatened by this waste problem than by not having the plutonium that SIS could produce. Thank you for your time.

Sincerely,

*Caroline Herter*  
Caroline Herter and Ben Winship

1-Jun-89; EX-00061, PAGE 1 OF 1

*Julie Robinson*  
PO Box 81  
Victor Idaho 83455

I would like to have WIPP comply with the strictest of EPA regulations to the fullest degree. At the least, I would like to have all processing of radioactive and toxic waste, all transportation and storage (by road and low beam) comply with all Federal and State regulations. This includes the burning of waste at the INEL site ~~which is~~ upwind from my home. I am more concerned with the health hazards from radioactive wastes than I am with the arms race. I do think that making more progress rather than our stars is our best defense.

*Thank you*  
*Julie Robinson*

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Testimony submitted regarding the WIPP SEIS by:

Margo Proksa  
5192 West Old Highway 91  
Pocatello, Idaho 83204

June 1, 1989

I am not opposed to the opening of the WIPP in New Mexico. I am merely concerned that the Department of Energy may be trying to hasten the opening of the facility before all of the health, safety, and environmental risk issues have been resolved. I am concerned that a premature opening of the facility may result in yet another expensive cleanup bill down the road.

The Department of Energy should demonstrate that the facility can comply with Environmental Protection Agency standards, and the EPA should certify WIPP prior to receipt of any waste.

If the WIPP facility fails to meet EPA standards, the DOE should let the public know what it intends to do for interim long and short term storage of hazardous wastes. The Supplemental Environmental Impact Statement fails to provide this information for comment.

Regarding transportation of wastes to the WIPP site, I am concerned about the maintenance of the roads, bridges and highways in Idaho particularly, but along the entire route. Will shipments be halted when the weather is nasty? We have seen and reported to the Idaho State Police, trucks carrying radioactive loads on Old Highway 91, south of Pocatello. Will drivers have special training in route finding so that they do not wander the backroads of America on their way to New Mexico? Will truck drivers and train crews have background checks for drug or alcohol abuse? If the railroad carries shipments to New Mexico, will the DOE assure us that the Union Pacific is maintaining their trains and tracks in top notch condition?

At the INEL, buried radioactive wastes have contaminated the soil and cause the most problems, yet the Department of Energy wants to accept only the retrievable wastes that are stored above ground which are less of a threat, for storage at WIPP. Why, when and how will they take care of the buried stuff? Why not give a comprehensive report on all wastes that are stored all over America, rather than just WIPP waste?

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Page 2  
Testimony of Margo Proksa, Pocatello, Idaho

Is the Department of Energy incinerating wastes at the INEL PREPP site without having to produce an Environmental Impact Statement? If there was an accident during incineration, what would the effects on health and the environment be? Are they planning to ship wastes from other parts of the country to the INEL for incineration to prepare it for storage at WIPP?

The reason everyone is so relieved about WIPP opening is because no one wants to store radioactive wastes. Why not clean up all of the DOE waste generating facilities, and call it quits on creating more wastes?

We don't need more weapons grade plutonium refineries such as the SIS scheduled to be built at the INEL, because it will generate over a ton a day of wastes that you do not know what to do with.

Congratulations on developing the first long term storage facility for the wastes generated by weapons production. Please consider the operation of WIPP as an opportunity to impress Americans with a sensitive approach to waste management. You have an enormous responsibility to do this right! Don't be in a hurry to fill WIPP until you can assure everyone that it is safe. Give us a plan to prove that all the waste that has been generated will be dealt with in a judicious manner. The record of the DOE has given us no reason to trust or have confidence in your actions.

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1-Jun-89: EX-00063, PAGE 1 OF 1

Testimony regarding the WIPP SEIS submitted by:

Jessica Proksa  
5192 West Old Highway 91  
Pocatello, Idaho 83204

June 1, 1989

I'm 14 years old and I have been keeping myself informed on issues such as the SIS and the NPR, and I have also been paying attention to the Department of Energy. I'm glad that they are finally trying to do something about, I think, the most important issue - cleaning up.

I have been informing myself on the WIPP site and I think it sounds like it would do the job. But I think in order for it to do the job, the Department of Energy must prove its safety. A good place for them to start would be to let the Environmental Protection Agency certify it before any waste is accepted at WIPP.

I know everyone, including me, is anxious to get the waste disposed of. So why not do it the right way?

My other concern is the transportation of the waste because Interstate 15 runs in the back of my house and the train tracks, in the front of my house.

Also, if the waste from building nuclear weapons is so difficult and expensive to dispose of, why should we build more projects like the SIS that will only add to our problems? The SIS will produce more than one ton of waste per day!

Don't be in a hurry to open WIPP until you can prove it is safe.

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1-Jun-89: EX-00064, PAGE 1 OF 1

WILLIAM R. CARPENTER, POCATELLO, IDAHO

I, personally, would like to see all the transuranic waste removed from Idaho. It was never intended that the IMEL be the ultimate repository for this waste, but instead, a temporary storage location until such a facility could be built. This temporary storage has lasted for too many years.

Now, a permanent repository has been built and is nearly ready to accept the nation's transuranic waste. From all indications the WIPP does offer a feasible method for the ultimate disposal of this waste. The groundwork up to this point indicates that it is now time to initiate the next phase of the WIPP development which is the 5-year test plan. I believe the time has come to enter this phase in order to accomplish my previously announced desire which is to remove all transuranic waste from Idaho in a timely manner.

1-JUN-89: EX-00065, PAGE 1 OF 1

Elaine Spang  
Box 78  
Deigo, IO 83422

I am opposed to the opening of the WIPP plant opening until all facilities meet federal state health and safety standards. I also believe that the DOE should concentrate all their energy into the cleanup of all previously contaminated DOE facilities and board the opening of WIPP.

I believe that the safe containment of nuclear & toxic wastes is a national issue, but it particularly concerns me as a citizen of Idaho and the nearness of my home to the INEL facilities living downwind in case of an emergency. Accidents do happen; take Three Mile Island and the latest disaster in Alaska.

In closing, I believe the only responsible course for the DOE can't should take is to delay the opening of WIPP until it meets all EPA standard, all federal & state health and safety standards and most importantly to concentrate on cleaning up all contaminated DOE facilities.

Elaine Spang

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Philip A. Round  
Star Route Box 352  
Wilson, WY 83014

1-JUN-89: EX-00066, PAGE 1 OF 2

May 30, 1989

Dear Secretary Watkins:

The proposed plan to incinerate radioactive wastes at the INEL has me very worried. A proposal such as this should be scrutinized through the procedure of an environmental impact statement. This is a very dangerous proposal. What is it that leads the DOE to think otherwise...

I understand that you face a very difficult problem. It's a problem that concerns a large number of responsible citizens. Let's do all we can to reach the best solution. It may be a case of choosing between the lesser evils, but I'm convinced there are better options than incineration.

Presently, the wastes in question are contained, and pose no immediate threat to public health. This is already a better situation than exists at many of the other waste sites the DOE is responsible for. Before we change this scenario, let's be sure it will be for the better.

The proposed transport of INEL's above ground wastes to New Mexico also disturbs me. It seems we have the benefit of learning from Alaska's mistakes here. The disaster in Prince Wilton Sound was not supposed to be able to happen. The important point here is

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1-JUN-89 EX-00066, PAGE 2 OF 2

That when hazardous cargo is being transported (by anyone but God), anything can happen. WIPP, even if approved, is not going to be a panacea for the radioactive waste problem. The only real cure at this point is halting production of this stuff. We've created an extraordinary situation here, and we're not living up to our responsibilities. Let's be absolutely sure that radioactive wastes will be "safer" where they're going before we commit to transporting them, in a very vulnerable state, across the country. There are many questions remaining regarding WIPP's safety as the ultimate repository for these wastes.

In closing I would like to reiterate my strong opposition to the proposed plan to incinerate radioactive wastes at the INEL. The site is directly upwind from where I live and I'm not interested in having the chemical composition of the air I breathe altered to include radioactive isotopes. It's fine the way it is, and so are the wastes in question until we come up with a better plan.

I hope the DOE will listen to citizens like myself who are genuinely concerned about radioactive wastes and want to reach a workable solution to this problem.

Sincerely,  
Philip A. Round

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PAULA JULL  
78 WILLOWOOD AVE.  
POCATOLLO, IDAHO  
83204

The Waste Isolation Pilot Plant is an important project in many ways. It signals an attempt by the Department of Energy to provide appropriate storage for the tons of radioactive waste generated by DOE nuclear weapons production facilities. This project deserves both our support and scrutiny for it to be what we all hope it can be - a safe, permanent storage site.

Hard questions must be asked and answered, for WIPP may be located in New Mexico, but it will impact communities like ours in many states.

First, all DOE facilities must comply with federal and state health and safety laws. Why is WIPP opening without complying with EPA standards? Isn't this "test phase" really an attempt to open the project prematurely? Shouldn't WIPP like INEL have to comply with health and safety standards?

Secondly, much of the TRU waste stored at INEL is going to be reclassified and exempted from storage at WIPP. There are millions of cubic feet of stored waste at INEL that have no proposed home. Shouldn't a priority of any waste disposal program be to clean up existing contaminated DOE facilities? DOE has failed to develop a plan to address the TRU wastes which are not going to New Mexico. I feel that although this project will be a start, the whole problem should be looked at as what it is, a national environmental problem.

Thirdly, the draft SEIS inadequately evaluates transportation problems. The proposed WIPP shipping routes cross 23 states. The reliability of shipping containers, use of trucks over trains, and training and equipment for emergency response personnel must be addressed. The citizens of communities such as ours deserve appropriate safeguards in this area.

Fourth, since PREPP and other waste processing facilities are part of the WIPP network, shouldn't a full discussion of PREPP and similar facilities be included in the SEIS?

Lastly, the enormity of this problem and its proposed solution points to an even bigger problem. WIPP cannot solve even our existing nuclear weapons production waste storage problem. The problem is that we keep producing weapons and waste at an alarming rate. We need to stop.

WIPP is needed badly. But it must be opened and operated properly & carefully, ~~and with the support and help of the people.~~ And we must address the cause of this whole radioactive waste nightmare, ~~the production of nuclear weapons, and the poisoning of our environment.~~

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RACHEL NEWBY  
72 Williamson Ave.  
Pasadena, Idaho 83224

TESTIMONY FOR WIPP HEARING:

It seems like, at the past few DOE workshops  
project hearings, I have consistently found myself  
up there protesting vehemently against some  
out-of-focus evil. This time is different. I stand  
here today as a concerned citizen; one who  
wishes only to make sure the government looks  
before it leaps. In fact, I consented to appear to the WIPP facility.  
I want to have an official visit to other some  
of this nation's dangerously overflowing amount of  
radioactive waste is not evil. It isn't bad  
or neglectful, but wanting to move and store  
things better in a facility somewhere that may  
or may not comply with EPA standards and regulations.  
The DOE would like to wait until after the  
fact phase of WIPP to determine whether or not  
it meets EPA standards. What steps will be  
taken if, after the test phase, WIPP does not meet  
these standards?

And since WIPP would hold only a small  
fraction of the nation's nuclear waste (as it exists  
now, not including waste produced in the future),  
what, if any, are the DOE's plans for the  
rest of the waste?

Ah, since deaths and injuries from truck  
accidents are about 3 times the number from  
train transportation, why on Earth does the  
DOE plan to ship the TRU waste to WIPP  
in trucks?

And what exactly are the "national security"  
reasons the DOE has for wanting to open  
WIPP so quickly and without sufficient  
precautions?

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If J. L. DOE wants to open WIPP as soon  
as possible, then it would do better to  
concentrate more effort on getting WIPP to comply  
with EPA standards and protecting the  
American people than comparing on people's  
perceptions over a misnomer of "national  
security" reasons and trying to find a trick  
WIPP into operation before sufficient safety  
precautions have been taken. Remember:  
in "national security", what the words really  
mean are a nation's freedom from danger,  
and that's all we're asking for. ~~WIPP~~  
~~is not a national security issue.~~  
Managed correctly and safely, the WIPP facility  
could very well give us a little more of  
that elusive national security we're looking for.

POCATELLO PUBLIC HEARING ON THE SELS  
FOR THE ZIP

Margaret Aho  
200 South 17th  
Pocatello, ID 83201

I would like to thank DOE for the opportunity to comment on this important issue.

Last week, while thinking about what to say tonight, I picked up the Idaho Statesman, May 27th issue, and read the following:

Between 1957 and 1960, there were intentional plutonium radioactive releases from the Idaho National Engineering Laboratory 400,000 times greater than the radioactive release during the three Mile Island nuclear accident. Over this seven-year period, nearly 6 million curies of iodine-131, including an estimated 2,800 curies of iodine-131, were released from the Idaho Idaho facility. The release was tied to a regular working hours when many of INEL employees had gone home and scientists counted on the 30 miles of desert separating the processing plant from those northern communities to disperse and dilute the iodine which has been linked to thyroid cancer. Though the government maintained monitoring stations in those smaller communities, the general population was not informed of the possible contamination from radioactive iodine.

I put the paper down and walked out into the garden as I often unintentionally do when I'm stunk and can't see a way out. Touring the flowers I noticed for the first time a certain spray of white blossoms. I recognized it as Star of Bethlehem which grows in my friend Jean's garden, though I myself don't remember planting any of these bulbs. I felt so happy. It seemed an unlooked-for and hopeful sign.

That night I dream I am climbing up some stairs which rise along the outside of a very large building. Arriving at a landing, I peer through the window. It's dark within. The lights don't work when I flick on the outside switch though, when I knock, I can feel and half-see figures dart to back rooms, flit from room to room, as if the building is abandoned, as if these are homeless people. I shout "who's there!" And now a small child with huge dark eyes and a whole world of unspoken sadness in them comes out and I say in anger and uncomprehended worry "What in the world's going on?" "Nothing my hands in a spreading gesture. And every 2nd (as if this building is exposed and can be seen through), all the 2nd my hands hit in their swiftness and meeting about give way, collapse

like a house of cards. I can feel everything give away beneath me and I grab at a horizontal beam and it too comes off in my hands and I begin to fall, grabbing this child, snatching him up, pulling us both onto the beam and down we glide like a feather. And now I see that the entire galaxy is there glowing and spread out beneath us, and I say in absolute awe and wonder to this child: "My God, look at all the stars!" Everything is so breathtakingly beautiful ... and then I wonder but how can we be falling into stars when stars are above us? And now, as we drift closer, I see that glowing beneath us are a trillion white blossoms: stars of Bethlehem. And we land. Safely.

And when I awoke and recorded this dream, I began to think of this collapsing structure we call western culture which once received its grace from the earth, the stars, and now would have all the elements line up and dance to our tune, the tune of our greed and fear ... and I realized that more and more we are beginning to see through this, the 2nd of this old construction exposed like the bones of some ancient beast. And we are asking it: "who's there!" like anxious and worried parents. And we are demanding to know "What in the world's going on?!" like responsible adults. And we are taking up the children whose large eyes are pools of what can't be said and pulling them onto the beam with us and we are sliding off into Beauty, a beauty so vast that we don't even care if this descent might also be death, the crash of our own construction. And we are realizing that the luminous stars toward which our rockets have been vertically rushing in so many frantic efforts to be finally rid of the earth, have also been waiting below for us, are a glowing galaxy of blossoms toward which we are now descending in hopes of our own rebirth: countless stars of Bethlehem.

In conclusion, I urge DOE to demonstrate compliance to all EPA safety standards before opening the Waste Isolation Pilot Plant, regardless of cost or delay, that they address the geological uncertainties (especially the brine seepage on the integrity of the repository), that the TRUMPET II asks proposed as shipping containers meet the Nuclear Regulatory Commission's test conditions before any emplacement consideration, that we climb onto this descending horizontal beam, everyone of us, that we land and live on the earth, our home, and plant bulbs together.

Thank you.

Margaret Aho

My name is Deborah J. Dabbe and I am here today to record my support of the Department of Energy position that a Phase decision making process continue through the test phase at WIPP.

I have determined which alternative to support through information research. I am confident that the transportation containers have been sufficiently tested to comply with NRC certification requirements before highway use. This testing program conditions certainly far exceed accident conditions that may occur during normal highway transportation. I am also confident that the some 35,000 emergency response personnel that will be trained during the States Training and Education Program will be ready in the event of a transportation mishap. 157 emergency responders in Pontotello and Idaho Falls have been trained by DOE and their existing emergency response programs have been enhanced to include transuranic waste and radiological materials capabilities. The communication network used to track each shipment will undoubtedly provide shipment information easily and quickly and that system will enhance safe and efficient transport of TRU waste to WIPP.

The integrated operations approach will allow WIPP to demonstrate that the system can safely and efficiently certify, package, transport and ~~embalance~~ <sup>emplace</sup> waste in the facility. The test-phase will also allow for a performance assessment of the WIPP process to measure the behavior against predetermined criteria and expectations. Compliance to these standards will allow WIPP to move into the Disposal Phase and be a permanent repository.

The National Academy of Sciences recommends storing wastes at WIPP because of the stability of the salt formations, I also believe that nuclear wastes can be permanently isolated from future generations in the WIPP repository.

As a taxpayer, I recognize that the "No Action" alternative would waste \$1 billion. The Alternate action would cost an additional \$19 to 121 million for delays to WIPP operation and subsequent start up costs.

As an Idahoan, I would like to support the INEL/DOE commitment to the State of Idaho that long-term storage of TRU waste at the INEL is an unacceptable long-term risk and a permanent repository will lessen the human intrusion and geological risks inherent with the "No Action" alternative.

As an INEL employee, I know that waste characterization, retrieval, and shipment to WIPP will be done safely and efficiently.

Thank you

testimony regarding the WIPP SEIS submitted by:

Dennis Proksa  
5192 West Old Highway 91  
Pocatello, Idaho 83204

June 1, 1989

I'm glad to hear that the DOE is addressing the problem of radioactive wastes. However I cannot support the opening of the WIPP facility because there are still too many unanswered questions that the Supplemental Environmental Impact Statement does not address.

Such as, what will the DOE do with the wastes stored at WIPP if problems arise in the first 5 years, and even worse, after 10 years or 20 years?

What does the DOE plan to do with high level radioactive wastes that have contaminated the soil at Hanford, INEL, and Savannah River to name a few...

Why hasn't the PREPP facility at the INEL been mentioned in the SEIS if it is going to be used to process waste that will be shipped to WIPP for storage?

Why is the DOE trying to open the WIPP facility without the approval of the Environmental Protection Agency? There are many other problems and questions that are left unanswered. In conclusion, I would like to go on the record as being opposed to opening the WIPP facility until these questions are answered.

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3.1-3

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1648 Palmer  
Tahbo Falls, Idaho 83404  
May 31, 1989

Mr. W. John Arthur  
RIS Project Manager  
WIPP-SEIS Project  
P. O. Box 5400  
Albuquerque, New Mexico 87115  
Dear Sir:

I wish to express my support for the prompt start-up of the WIPP Facility. This facility is essential for the permanent safe storage of nuclear waste that is currently stored in a temporary solution at various locations throughout the country. It is clear to me that the various logistical impacts associated with these materials is minimized by transporting and storing them in an underground repository. Removal of the waste which has been stored above ground in Idaho for almost two decades is overdue.

Sincerely,

*A. Bethune*  
A. Bethune

1-JUN-89: EX-00073, PAGE 1 OF 1

1728 Claremont  
Idaho Falls, Idaho 83404  
June 1, 1989

Mr. W. John Arthur  
DOE Project Manager  
WIPP-SEIS Project  
P. O. Box 5400  
Albuquerque, New Mexico 87115

Dear Sir:

I request that the WIPP facility be opened as soon as possible. It is time to stop the temporary storage and place the defense nuclear waste in permanent storage.

Sincerely,

*Marie D. Jackson*  
Marie D. Jackson

1-1

1-JUN-89: EX-00074, PAGE 1 OF 1

2183 South Higbee  
Idaho Falls, Idaho 83404  
June 1, 1989

Mr. W. John Arthur  
DOE Project Manager  
WIPP-SEIS Project  
P. O. Box 5400  
Albuquerque, New Mexico 87115

Dear Sir:

I request that the WIPP facility be opened as soon as possible. It is time to stop the temporary storage and place the defense nuclear waste in permanent storage.

Sincerely,

*Ray J. Sumerud*  
Ray J. Sumerud

1-1



June 1, 1989

Mr. W. John Arthur  
DOE Project Manager  
WIPP-SEIS Project  
P.O. Box 9000  
Albuquerque, New Mexico 87115

Dear Sir:

I would like to express my support for the prompt startup of the WIPP facility. I believe that it is imperative that this facility be put into use to store all of the nuclear waste that is presently being stored in temporary fashion at different locations throughout the United States. A permanent storage place for all of the above-ground waste in Idaho is long overdue.

Sincerely,

*Bessie H. Trego*  
Bessie H. Trego

1-1

THE WIPP RAP

There's a lot of people in southern Idaho who really want this waste to go, But wait a minute Put some more thought in it, There's a few more facts you need to know. It's the WIPP Rap, the WIPP Rap.

What about the PREPP-y processing plant Can it handle all the waste, or maybe it can't Will it all come here Or will you build a few more, This needs to be decided, not after, but before. It's the WIPP Rap, the WIPP Rap.

We've heard all the waste will go by truck Sounds as if we're really treating to luck. A crash or two would be no surprise Do we have to wait for this to open people's eyes (like Exxon). It's the WIPP Rap.

Why is it we will have to wait For five years to negotiate Whether WIPP is safe, And if it's not, What 'cha gonna do with the waste that's hot? It's the WIPP Rap, the WIPP Rap.

What about the waste stored in the ground At INEL, since it's been found The waste is spreading in the watershed. We want it out, before we're dead. The WIPP Rap, the WIPP Rap.

It's handy to put it in a hole in the ground. Don't be an ostrich, look around. We're part of the planet, we're all connected And leaks in the cavern have been detected.

Come on DOE, can't you see You're living in a fantasy. Saltng waste away won't save the day. So answer some questions before you say the WIPP Rap, the WIPP Rap.

Barbara Veraniem  
P.O. Box 195  
Gooding, ID 83330

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1-Jun-89; EX-00077, PAGE 1 OF 2

256 South 11th Avenue  
 Pocatello, Idaho 83201  
 30 May 1989

V. John Arthur III, Project Manager  
 WIPP S&ES Project Office  
 U. S. Department of Energy  
 6501 Indian School Road, N.E., 7th Floor  
 Albuquerque, New Mexico 87110

Dear Mr. Arthur:

As a citizen of the United States of America I am deeply concerned about the destructive power of nuclear wastes and their effects on the environment and the welfare of our people. Therefore, I respectfully urge the Department of Energy (DOE) to openly deal with the flaws in its nuclear waste management program as reported in A Citizen's Guide issued by the Southwest Research and Information Center, and to implement the mandatory improvements. DOE's intentional discharge of large amounts of radioactive and toxic materials into the environment, reported in the Guide as having been concealed from the public, is especially disturbing and totally inexcusable, and must be stopped.

As regards the opening of the Waste Isolation Pilot Plant (WIPP), cleanup of existing contaminated DOE facilities must be given top priority over that project so that they comply with federal and state health and safety laws. Such compliance must involve formal public announcement. Even if such cleanups are carried out, the possibility, if not probability, of brine seeping into the waste rooms from the large pressurized brine reservoir underlying WIPP is reason enough for questioning the wisdom of DOE's choosing the site in southeastern New Mexico. Furthermore, the projected number of deaths and injuries resulting from shipment of nuclear wastes to WIPP, by either train or truck through 25 states, is highly questionable. At the very least, the NO action alternative regarding WIPP must be completely analyzed.

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1-Jun-89; EX-00077, PAGE 2 OF 2

In keeping with the basic principles of an open society, DOE must make known all possible risks to public health and safety brought about by nuclear wastes, not only as regards WIPP, including its waste transportation routes and interim storage facilities, but also at existing production and storage facilities. In this connection, it is entirely reasonable for the people of Idaho to demand that any nuclear wastes not be shipped to their state for processing before being sent elsewhere to a permanent storage site.

If DOE sees fit to continue the WIPP project, I earnestly request that a revised and undiluted draft plan be released for evaluation by independent scientists and the public.

Sincerely,

*Edson Fichter*  
 Edson Fichter

DAVID E. SKAGGS  
2ND DISTRICT, COLORADO  
1700 LAMAR BLVD., N.W.  
WASHINGTON, DC 20031  
(202) 331-3311  
818 Baseline Street, Suite 110  
Nederland, Colorado 80460  
(303) 686-7000



UNITED STATES  
HOUSE OF REPRESENTATIVES

STATEMENT BY CONGRESSMAN DAVID SKAGGS  
ON THE WASTE ISOLATION PILOT PLANT SEIS

June 6, 1989

I want to welcome the Department of Energy to Denver for this hearing on its draft supplemental environmental impact statement (SEIS) for the Waste Isolation Pilot Plant, known as WIPP.

As a nation, we shouldn't have to poison ourselves in order to protect ourselves -- so as long as we depend on nuclear weapons for our defense, we must also find ways to deal with the wastes that are created through weapons production. Because WIPP will offer a major improvement in environmental safety over our current method of storage, it's important that we work to open WIPP as soon as we can, and I'm committed to working toward that goal.

But in opening WIPP, it's also important that we do it right the first time. Among other things, that means making sure the facility meets important public health and environmental guidelines for the hazardous and nuclear wastes that will be deposited there. That is the purpose of this hearing today.

Before I mention the serious technical criticisms that I have of the draft SEIS, I do want to say that I was very heartened that the Department did agree to undertake a supplemental environmental impact statement or SEIS for the project. Senator Wirth, myself, and many others called for a SEIS because of the significant changes that were made in the WIPP plan after the original EIS was completed. I commend the department's decision on this, because it shows DOE has recognized the need to address more adequately the public concerns that had arisen about the project, and about the DOE's credibility in general.

Having said that, I think it's a real shame that after putting many months into the preparation of this draft SEIS, the DOE did not properly finish the document. Holding this hearing on an unfinished document does not inspire public confidence in the project, and this incompleteness could well mean further delays -- delays we can ill afford.

In fact, the general failure by the DOE to complete requirements aimed at protecting the public health and environment is a significant cause for the delay in opening WIPP. Time and again, the DOE has tried to shortcut the process in ways that could shortchange the public's safety, only to find itself required, after months or years of delay, to do the job properly.

6-JUN-89; EX-00078, PAGE 1 OF 3  
PUBLIC WORKS AND  
TRANSPORTATION COMMITTEE  
SCIENCE, SPACE, AND  
TECHNOLOGY COMMITTEE  
SELECT COMMITTEE ON CHILDREN,  
YOUTH, AND FAMILIES  
WIPP AT LARGE

6-JUN-89; EX-00078, PAGE 2 OF 3

Because these delays have brought us close to a crisis involving waste generated at Rocky Flats, it is vital that DOE move forward quickly and responsibly to resolve the waste storage issue at that plant. It would be a great mistake if a perceived waste crisis were to force the opening of WIPP before critical safety tests have been passed. If that were to happen, and WIPP then proved to be unsafe, the waste brought there from the Rocky Flats plant would then have to be dug up and relocated at taxpayer expense -- and that would be a terrible eventuality.

I am working with several other members of Congress on legislation that would open WIPP and do it right. It is a high priority for me. There are certain things I will insist on in that legislation: making sure that the transport of nuclear wastes through our state is done only in approved containers, on safe routes, and with appropriate safeguards; seeing Colorado properly compensated for its costs as a throughway for transuranic weapons waste; and assuring compliance with strict environmental standards at the WIPP site itself.

At this point, let me mention some of the serious concerns I have about the draft SEIS document. First and foremost, I am very concerned that the SEIS is unfinished. In that several key points made in the SEIS are not properly backed up by documentation. In these cases, the documentation has either not been published or is otherwise unavailable to the public, or else is included in a document that is itself in draft form. For example, the DOE's Final Safety Analysis Report (FSAR) on WIPP, still incomplete, is cited in several critical places to demonstrate that WIPP will contain transuranic wastes. This situation creates a tower of uncertainty that could conceal significant flaws.

Second, and of particular importance in a transportation corridor state like Colorado, is the test status of the Department's TRUPACT-II shipping containers. The DOE has tested these containers against potential accidents involving fire, impact, puncture, and immersion in water. However, while the SEIS states that the most likely and worrisome kind of accident is one that would crush the container rather than one that would burn, impact, puncture, or immerse it, the DOE does not currently plan to submit these shipping containers to crush tests.

Third, the SEIS calculates that fewer fatalities and less radiation releases would likely occur if DOE were to maximize rail shipments. The original 1980 EIS also called for rail shipping of shipments, and DOE's plans for a related waste repository in Nevada would also rely exclusively on rail shipping. Yet, for an unexplained reason DOE calls "control", the department now intends to ship everything to WIPP by truck. This discrepancy is disturbing, in that it implies DOE may not be using the safest transportation method available.

Finally, the "worst possible accident" scenario developed by DOE for its computer models is flawed, as it is based on average shipment sizes and radioactivity, rather than on the extremes. Further, the computer model inappropriately eliminates human error as a contributing cause to certain accident scenarios. Unfortunately, if there's one thing we can probably guarantee will occur over time, it's human error.



The second fear is that TRU packaging containers are too often modified after being tested and approved. Local officials feel they are the last to learn about equipment specifications and modifications, and rumors persist at the local level that the TRUPACT containers are constantly being adjusted. This makes local officials uneasy about the current safety of the containers.

I would like the DOE to update officials on a regular basis about the equipment it intends to use and to delay any shipments until the TRUPACT container design is completely effective.

The third concern is that the DOE may not be able to respond quickly enough to accidents. The DOE has done a credible job training local personnel to handle nuclear accidents, but their commitment to safety can best be shown through the DOE's presence. Many local officials believe that the DOE may need to hire additional people to respond in the event of an accident because the DOE currently plans to locate response teams in only a few specific locations.

I would like to work with the DOE to ensure it has the personnel to meet response demands and to maintain the public's confidence in its ability to respond quickly and effectively to emergencies.

The final concern is simple. Local officials want the DOE to label all containers within truck trailers and rail cars. In the event of an accident, emergency response teams must be able to identify TRU waste that may have separated from the trailer or rail car.

All the public officials my office contacted were aware of the DOE's controversial plan. All expressed uneasiness, but realized society's overriding interest in the safe long-term storage of radioactive waste. Many have been following the DOE's strategy and have attended the informational meetings that have been held over the past several years. If the concerns I have detailed still exist, the DOE needs to work with me to address them to the satisfaction of local leaders.

Communities in Colorado located along the DOE's transportation corridor do not want to be ignored after the WIPP opens. They expect to be notified if plans are changed and to have their views incorporated as modifications are necessary. Likewise, if highway and safety improvements are necessary, Colorado communities expect to be able to talk to the DOE for technical advice as well as support in negotiations with other governmental agencies.

I will continue to follow the DOE's plans to open the WIPP. The views I have expressed today underscore the concerns of constituents in the Third Congressional District, and as such, I trust the DOE will accord them the attention they deserve.

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STATEMENT OF THE HONORABLE  
TIMOTHY E. WELKE

June 6, 1989

ON THE SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT  
FOR THE WASTE ISOLATION PILOT PLANT

The State of Colorado has a special interest in the Department of Energy's disposal program for transuranic waste (TRU-waste.) Our state is host to the Rocky Flats Plant which generates the vast majority of TRU-waste, and our highways will serve as the crossroads if TRU-waste is shipped to the Waste Isolation Pilot Plant (WIPP) in Carlsbad, New Mexico. During the past 18 months, concern about these issues has been growing in Colorado. I am very pleased that the Department of Energy (DOE) is holding this hearing in Colorado to air these issues, and I want to welcome you to our state.

First, let me commend the DOE for undertaking the difficult task of preparing a supplement to the original Environmental Impact Statement for the WIPP. In particular, I was encouraged that the DOE agreed to the request of Congressman David Staggs and myself to supplement the examination of transportation issues associated with the WIPP. Unfortunately, the draft Supplemental Environmental Impact Statement (SEIS) leaves me with a variety of concerns.

6-Jun-89; EX-00080, PAGE 2 OF 7

My overriding concern about the WIPP project today relates to the climate of crisis that surrounds the policy-making process. And I believe that the DOE owes the State of Colorado, Idaho and other states more. We in Colorado have lived up to our responsibility to serve the nation. We are host to the Rocky Flats Plant -- producing triggers for nuclear warheads and reprocessing plutonium for reuse in new weapons. It is not an enviable job for any state to be involved in the nuclear weapons production complex and to deal with the environmental problems associated with plutonium. But Colorado has taken on this job in a responsible and admirable fashion.

Currently, however, Colorado is the dubious beneficiary of a TRU-waste disposal program that has often been characterized by poor planning, failed communication and bad faith. That is why we are in the dilemma posed by what I've characterized as the "climate of crisis" that persists. If we continue to meet our responsibility as good citizens taking on the nation's defense burdens, if Rocky Flats continues to produce plutonium triggers, we may be faced with an unacceptable backlog of wastes. The State of Idaho has flexed its muscle and is drawing the line on the current program of storing TRU-waste at the Idaho National Engineering Laboratory (INEL.) Last year, this issue reached crisis proportions that have not yet abated. Idaho refused to allow further shipments of TRU-waste and five boxcars backed up near the gates at Rocky Flats.

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To resolve the crisis, we are told, the Congress must act now to pave the way to open up the WIPP at Carlsbad. As responsible citizens, I and my fellow Coloradans are naturally concerned that the people of New Mexico be assured that the WIPP facility meets federal standards for nuclear and mixed waste disposal. Are we to open a substandard facility in New Mexico because we lack the will to tackle the tough issues associated with waste disposal? Of course not. Coloradans won't do business that way.

In my opinion, our Governor, Roy Romer, has done an outstanding job in the face of this crisis atmosphere. Under his leadership the state has been asking all the right questions; asking for reasonable and responsible assistance from the DOE. But the crisis persists, and I regret to say that the DOE has largely failed to take the necessary steps to ease this crisis. In fact, the agency has at times seemed to feed it.

We are six months into 1989 -- eight months behind the scheduled opening for WIPP. The SEIS has been prepared, and Idaho Governor Cecil Andrus has agreed, temporarily, to accept TRU-waste shipments from Rocky Flats. And yet the issues of critical importance to Colorado have not been adequately addressed. Let me suggest that we get to work on these issues immediately. If we do not, the crisis will only grow, poor decisions will be made, and the people of Colorado, New Mexico

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and the other shipping "corridor" states will be foisted with an inadequate and potentially unsafe waste transport program. The Exxon Valdez incident underscores the nature of this problem. The people of Alaska understand what unsafe, poorly monitored and failed emergency response training can mean. When nuclear wastes are involved, the stakes are such, much higher.

Let me now turn to my specific comments on the SEIS and those issues we should be addressing in the weeks ahead.

The DOE should apply for a RCRA permit and immediately submit an interim storage plan for TRU-waste. Under the most favorable circumstances, the WIPP cannot possibly open on the timeline currently proposed by the DOE. Prior to sending waste to the WIPP, a shipping container must be certified by the Nuclear Regulatory Commission (NRC), a land withdrawal bill must be passed by Congress, the final experimental test plan must be analyzed, and the issue of compliance with Environmental Protection Agency (EPA) disposal standards must be resolved (and we should all start lighting a fire under the EPA's feet to get that agency to issue new standards.) These are no small tasks. Frankly, we have to be prepared for the likelihood of further delay in opening WIPP. It is an unfortunate eventuality and we must be prepared for it.

Governor Romer and I have urged the DOE to develop interim storage plans. The Final SEIS must address this problem. Even

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6-Jun-89: EX-00080, PAGE 5 OF 7

if WIPP were to open tomorrow (based on the DOE's experimental test plan), only 3% of the WIPP's capacity could be filled. Rocky Flats will still need to ship TRU-waste to INEL or some other facility during that time.

Second, the draft SEIS continues down the same road of lauding an emergency plan for the transportation of TRU-waste that is wholly inadequate. I am well aware of the State of Colorado's efforts to work with the DOE on these issues. As in the transportation of hazardous materials throughout the country, Colorado and other corridor states lack adequately trained and equipped emergency responders. Less than one third of Colorado's emergency responders were trained at the small scale, relatively modest training program provided by the DOE last year. How many of those trained have since left their jobs? And what plans are in place to train the others?

The DOE must commit itself to implementing a program of the utmost care and integrity. Again, I cannot help but harken back to the lessons of the Exxon Valdez spill. If there is an accident, we cannot afford a hesitant, poorly trained or inadequate response. That means that the DOE needs to immediately begin negotiations with corridor states to determine fully these states' emergency response training and equipment needs. Then the DOE should come back to Congress with a request for additional WIPP funding to meet these needs. Governor Romer has made an excellent suggestion urging the establishment of a

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7.12B-5  
7.12B-11

formula for considering the origin and quantity of waste shipments, shipment miles and population figures in allocating emergency response funding. Clearly, the State of Colorado, which will have as many as 1000 waste shipments a year for twenty years, needs to be put at the top of this list.

Third, the DOE needs to go back to the testing ground to address a new issue that is raised by the draft SEIS. For the first time, the DOE has acknowledged that the dominant concern in transportation accidents involves containers being crushed. Unfortunately, the DOE has not done testing to ensure that the shipping container, TRUPACT-II, can survive this type of accident. Although the NRC does not require crush tests in certifying containers, the level of public concern about the WIPP program (exacerbated by the DOE's problems at Rocky Flats), coupled with our nation's need to lead the world in nuclear waste disposal, certainly demands that these tests be undertaken immediately -- and before the SEIS is finalized.

Finally, I implore the DOE to explain to the public in the final SEIS why the modal distribution of WIPP shipments has been so dramatically altered since 1980. The original SEIS advocated a shipping program comprised of 75% rail transport and 25% truck transport. The SEIS doesn't adequately explain why the shift away from rail transport. Today, the DOE assumes that all shipments will be handled by trucks. On what basis has the agency made such a dramatic change in modal distribution -- and

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does this change make good public safety sense, or for the agency's budget?

It is time to lift the veil of fear that envelops the WIPP today. It is time to roll up our sleeves and take on these tough issues. The DOE has been slow in doing so and I urge the agency to begin now. There are encouraging signs. The new Secretary of Energy, Admiral James Watkins, is committed to doing the job -- and doing it responsibly. Coloradans, as I have mentioned, have a proud history of living up to their responsibility in this regard. Working together, local, state and federal authorities, including Congress can do the job and we can do it right. Let's get on with it.

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December 12, 1988

Dear Governor Romer,

The Rocky Flats plant currently presents an immediate urgency in determining an effective final resolve for waste disposal, storage, and treatment at the facility. Due to this waste "crisis" issue for transuranic, plutonium mixed, low-level, and high-level waste, the Governor's Committee Against Radioactive Pollution is confronting our state. The Governor's Committee Against Radioactive Pollution has issued a press release, "Committee Urges Governor to Address Following Questions," dated 12/10/88. The inquiry is prompted by the lack of guidance provided by your "Rocky Flats Monitoring Council," informing and "working with" the public in gathering data. In addition, the public needs explanation through your office of the status of events that have occurred, and not be formally informed by an uninformed media and a biased Rockwell International.

Discussion: WIPP delay

The Waste Isolation Pilot Plant was to become operational by Oct. 1988 and the Transuranic Waste Management Program Strategy Document issued by the D.O.E. 1986, should have been clear as to the destiny of the waste if WIPP was delayed. The Idaho National Engineering Lab was presented as an alternative in the foreword of the Final E.I.S. for WIPP. The preferred alternative in the foreword of the Final E.I.S. was the authorized alternative, which is to continue storing TRU waste at INEL until a high level-waste-repository is available to receive it. This is consistent with the President's message to Congress 2-12-80 establishing a comprehensive national program. The D.O.E. intention was that "new generation" waste after 1987 would be characterized, processed and been ready for delivery to WIPP by each generator of TRU waste and that past Rocky Flats waste buried and stored at I.M.E.I. would be processed at the Idaho sites' transuranic waste treatment and conditioning facility. The Idaho plant's transuranic waste treatment and conditioning facility, this treatment facility. The Rockwell's proposed plan for ash recovery of plutonium and americium by incinerating for volume reduction and recovery through chemical reprocessing.

- Questions:
1. You recently toured the WIPP site and relay to the public that it looks good. Why then has WIPP been delayed for operation?
  2. Why would the governor of Idaho not be prepared in case of the WIPP delay? Was Colorado notified of the Idaho governor's concern prior to his "aggressive" move for the State of Idaho? The governor was interviewed and stated, "if you don't know what to do with the waste, don't generate them." He supposedly is very supportive of his D.O.E.

contractor in managing I.M.E.I., which generates waste. His contractor is prepared for waste shipment to WIPP, is Rockwell? Is the governor reacting to environmental concerns for his state, or concerned that Rockwell is still unprepared for waste management?

3. The National Academy of Sciences in 1987 reported a problem at the WIPP site. What is the assessment? The E.I.S. for WIPP states that "leachability of nuclear waste could be important to the WIPP repository because leaching of the waste by water or brine would have to take place before intruding water could mobilize radionuclides. Although the intrusion of water into the WIPP storage areas is of very low probability, it is the basis for the most credible scenarios describing the release of radionuclides from the sealed repository."

4. A permit for transuranic mixed waste is necessary before waste can be received at WIPP. Has this permit been approved?

5. According to a document, "Nuclear Waste Incineration Technology" (Rockwell, 1981 D.L. Ziegler) the TRU waste management Program (TWGP) was located at Rocky Flats and it was their responsibility to provide assistance to D.O.E. in coordinating development of technology for management of TRU waste nationwide. The program began as the result of incinerator problems in the past. How can D.O.E. at Rocky Flats take a position they are uninformed as to resolving the waste storage situation with this responsibility? What does the D.O.E. claim was their contingency plan if WIPP were delayed? If plutonium and americium is recoverable and deemed most valuable from ash (recovered thru chemical separation) as Rockwell claims in their current incineration plan in building 771, why wouldn't all TRU waste be shipped to Rocky Flats for Plutonium recovery and packaged for WIPP?

7. What is the current "Waste Acceptance Criteria Plan" for the WIPP site? According to the E.I.S. for WIPP "incineration is considered the only feasible processing alternative for reducing the content of combustible and gas-producing materials. It goes on to say, "the limitation on combustible and gas-producing material is still a subject of much discussion. As the wastes age and degrade, they can produce gases through four processes: chemical interactions; radiolysis; thermal degradation (including pyrolysis), and bacterial activity. The amount of gas produced depends on the waste and the salt. It is believed that stored nuclear waste may be able to generate substantial volume gas. Because contact-handled waste sometimes contains organic and other gas-producing material, it has received closer scrutiny than remotely handled TRU waste or spent fuel."

Discussion: Waste generation at Rocky Flats

The Idaho plant has developed the means for treating and storing TRU waste and a report from a prominent journalist, Fred Shapiro, entitled "Nuclear Waste," states, "Rocky Flats puts out 2.2 million pounds of liquid and solid radioactive waste each year, and while the radioactive component of this material originally was dumped into the transuranic burial grounds, it is now being stored in a \$35-million incinerator to be built Monday at the laboratory, and then shipping the ashes to the Waste Isolation Pilot Project, an underground repository expected

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to be constructed in salt beds near Carlsbad, N.M. and now scheduled to be opened in 1987 for a cost now estimated to exceed \$1 billion. Idaho's manager of waste-management operations, Max Schletter, states "It has taken us quite a while to settle on what we're going to do with it, but that's the advantage of sorting it out here--our evaluation is that it will last for a minimum of forty years in this dry Idaho environment, and the Department of Energy requirement for retrievability is only twenty years, and since some of our waste has only been here half that, we have more time to study our alternatives." Shapiro's book continues to explain from a quote by the Albuquerque operations manager of the Department of Energy, Anibal L. Fabras, who is in charge of the site of the technology: "The technology is not as mature as more of the other technologies. It's not as well understood. It's more of the order of \$25 million in fiscal year 1980. My responsibility is to make sure we have adequate technology for getting this waste into acceptable forms for transport and disposal, and we're going at the problem from several different directions. First, we're trying to see if we can reduce generation of the form and to improve our instrumentation so we can make better assays of transuranic-suspect material. There's a huge saving if we can establish that something is less than the ten-nanocuries-per-gram limit. We estimate that it costs us two hundred fifty to two hundred seventy-five dollars to store transuranic waste as opposed to \$5 or \$6 per cubic foot to dispose of low-level wastes. Then we're looking hard at incineration, which will get rid of organic materials that build up gases, and even better, give us a volume reduction of up to a hundred to one--we'd save two ways.

The above information is verified in the E.I.S. for WIPP. Various technologies are being searched at targeted sites for being candidates for dealing with Tru waste generation.

#### Incinerators for Tru Waste:

Westinghouse/Manford/Richland Washington-acid digestion process  
 Rockwell International/ Rocky Flats-agitated hearth  
 University of California/Los Alamos Scientific Lab-controlled air  
 Monsanto/Mound Laboratory-cyclone drum  
 Rockwell International/Rocky Flats-Fluidized Bed  
 E.G.&G./Idaho National Engineering Lab-Molten Salt  
 E.I. du Pont de Nemours & Co. Inc./Savannah River-Pyrolysis, controlled air  
 Rockwell International/Rocky Flats-Rotary Klin  
 Slagging-process/CEH-SCK waste facility, Mol.Belgium

#### Various immobilization processes:

Questions:  
 1. Which technology was chosen for ultimate disposal? Manford has provided an analysis of environmental impacts and a final disposal strategy for TRU and low-level waste generated for public evaluation. The public in Colorado is very concerned by the lack of information on disposal practices at the facility where incineration of transuranic waste (Rocky Flats generates about 40% nationwide will take place in the Metro area. Could it be required for Rocky Flats? Volume generation has been challenged and never resolved for the types of waste generated at Rocky Flats. The E.I.S./1980 for Rocky Flats claims 6700 cubic yards of pu is generated annually-1200 cubic yards is packaged and shipped to INEL-approximately 5500 cubic yards per year is shipped to an offsite non-retrievable location. In 1983 the Tru waste interpretation changed from 10 nanocuries to 100 since it is difficult to measure and easier to treat suspect-waste as TRU rather than prove it not. This resulted in greater volume shipments to INEL.

The waste handled at Rocky Flats:

Low-level; Low-level mixed (CDH/EPA regulated); transuranic

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mixed (CDH/EPA regulated); transuranic; and radioactive scrap recycled for production use (solid and liquid material with recoverable radionuclides, stored for incineration and chemical processing, require no permit).

2. What happened to incinerators proposed for Rocky Flats to handle TRU waste (i.e. Rotary Klin, Agitated Hearth, Fluidized-Bed ref. WIPP E.I.S.); if not permitted, what disposal technology was Rocky Flats considering in preparing their waste for the opening of WIPP?

3. CDH/EPA has authority over low-level mixed and transuranic mixed. How can you guarantee good oversight if agencies have no regulatory authority overseeing the most critical plutonium waste and plutonium recovery processes at Rocky Flats?

#### Discussion: Storage

The Colorado Department of Health has determined that the allowable storage limit for transuranic mixed waste is 1600 cubic yards. I cannot locate this information (directed by CDH to review the Part B permit) and would like to review this information regarding regulations for storage, packaging, instrumentation for waste analysis, container and box specifications.

#### Questions:

1. What waste is currently being stored in the railroad cars temporarily at the plant? Doesn't this waste consist of TRU and TRU mixed?

2. Mr. Joe Goldfield submitted to you an evaluation of the potential radiological release for a worst case scenario for waste situated currently in railcars at the Rocky Flats plant (no interim status for railcars) per your approval. He based his calculations on D.O.E. allowable standards of 200 grams of plutonium in each drum. The E.I.S. for WIPP determines the types of waste to be stored, details characterization and concludes that 8 grams is the expected activity per drum and 13 grams is the expected activity for plywood boxed waste to be received at WIPP. Please state the basis on both of the maximum credible accident utilizing this data. Based on both of the maximum credible accident utilizing this data, what are the potential radiological releases? Please support this temporary storage in the Metro area? Please address Mr. Goldfield's conclusions and explain why you are permitting the Metro area residents to exceed the Maximum Credible Accident Emergency Preparedness Guidelines?

3. What is the status of low-level waste storage and has it been moved offsite?

#### Discussion: Transportation

According to the WIPP E.I.S., rail was the means for transporting TRU waste and non-TRU would be trucked. An economic evaluation of transport by Rockwell suggests that rail is the most cost effective mode. Impact containers were to be used for this transport and have yet to be certified.

#### Questions:

1. Your office determined that plans have changed from rail to truck. Please explain this change, and what documentation explains the new assessment for transportation, and particular routes to WIPP.



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is prepared for waste shipment to WIPP, is Rockwell? Is the governor reacting to environmental concerns for his state, or concerned that Rockwell is still unprepared for waste management?

3. The National Academy of Sciences in 1987 reported a problem at the WIPP site. What is the assessment? The E.I.S. for WIPP states that "leachability of nuclear waste could be important to the WIPP repository because leaching of the waste by water or brine would have to be prevented. Intruding water could mobilize radionuclides. Although the radionuclides would be immobilized by the low pH, the probability of water intrusion into the WIPP storage areas is of very low probability, it is the basis for the most credible scenarios describing the release of radionuclides from the sealed repository.

4. A permit for transuranic mixed waste is necessary before waste can be received at WIPP. Has this permit been approved?

5. According to a document, "Nuclear Waste Incineration Program (1950) was located at Rocky Flats and it was their responsibility to provide assistance to D.O.E. in coordinating development of technology for management of TRU waste nationwide. The program began as the result of incinerator problems in the past. As soon as the TRU waste storage situation with this responsibility was taken over by WIPP, the program was terminated. What does the D.O.E. claim was their contingency plan if WIPP were delayed?

6. If plutonium and americium is recoverable and deemed most valuable from ash (recovered thru chemical separation) as Rockwell claims in their current incineration plan in building 771, why wouldn't all TRU waste be shipped to Rocky Flats for plutonium recovery and packaged for WIPP?

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#### Discussion: Waste Generation at Rocky Flats

The Idaho plant has developed the means for treating and storing TRU waste. A report from a prominent journalist, Fred Shapiro, entitled "Nuclear Waste States," Rocky Flats puts out 2.2 million pounds of liquid and solid waste each year, and while the transuranic component of this material originally was dumped into trenches at low-level burial grounds, it is now carefully placed in \$35-million incinerator with the intention of processing it through a \$55-million incinerator to be built someday at the laboratory, and then shipping the waste to the Waste Isolation Pilot Project, an underground repository expected to be constructed in salt beds near Carlsbad, N.M. and now scheduled

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to be opened in 1987 for a cost now estimated to exceed \$1 billion. Idaho's manager of waste-management operations, Max Schletter, states "It has taken us quite a while to settle on what we're going to do with it, but that's the advantage of sorting it out here--our evaluation is that it will last for a minimum of forty years in this dry Idaho environment, and the Department of Energy requirement for retrievability is only twenty years, and since some of our waste has only been here half that, we have more time to study our alternatives." Shapiro's book continues to explain from a quote by the Albuquerque operations office of the Department of Energy, Anibal L. Taboas, who is in charge of the site's research program that were budgeted at more than \$25 million in 1986. "We have a responsibility to acceptably ensure we have adequate technology for getting this waste into acceptable forms for transport and disposal and we're going at the problem from several different directions. First, we're trying to see if we can reduce generation of the form and to improve our instrumentation so we can make better assays of transuranic-suspect material. There's a huge saving if we can establish that something is less than the ten-nanocurie-per-gram limit. We estimate that it costs us two hundred fifty to two hundred seventy-five dollars to store transuranic waste as opposed to \$5 or \$6 per cubic foot to dispose of low-level waste. Then we're looking hard at incineration, which will get rid of organic materials that build up gases, and even better, give us a volume reduction of up to a hundred to one--we'd save two ways. Various technical information is verified in the E.I.S. for WIPP. Various technical information researched at targeted sites for being candidates for dealing with TRU waste generation.

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E.G.WG./Idaho National Engineering Lab-Molten Salt  
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3. What is the status of low-level waste storage and has it been moved offsite?

Discussion: Transportation

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Questions:

1. Your office determined that plans have changed from rail to truck. Please explain this change and what documentation explains the new assessment for transportation, and particular routes to WIPP.

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2. Why have TRUPACT containers not been certified.

We look forward to your response.

Sincerely,

Joan Seeman  
Co-Chair  
Committee Against Radiotoxic Pollution  
613 Larkbunting Dr.  
Ft. Collins, Colorado 80526  
226-4658/K. Grice 466-1212

c/c  
Senator Tim Wirth  
Rep. David Shays  
Rep. Pat Schroeder  
Rep. Sam Williams  
Rep. Sam Mollo, E.P.A.  
Patti Corbett, C.D.N.  
Rocky Flats Monitoring Council



**SOUTHWEST RESEARCH AND INFORMATION CENTER**

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**Statement**

by

Caroline Fetti  
Southwest Research and Information Center

on the supplement to the Environmental Impact Statement  
for the Waste Isolation Pilot Plant

June 6, 1989 Denver, Colorado

Good morning. My name is Caroline Fetti and I am here representing the Southwest Research and Information Center, a New Mexico-based environmental organization. I appreciate this opportunity to comment.

It has become painfully clear that the U.S. Department of Energy (DOE) and its predecessor agencies have done a very poor job of managing the nation's nuclear wastes. Inattentive to safety and environmental protection have resulted in widespread environmental contamination risk to human health, and billions of dollars in clean-up costs.

DOE promises of reforms have been a welcome relief. In the case of the Waste Isolation Pilot Plant (WIPP), however, these promises are ringing hollow. The Department seems bent on business as usual by: 1) not conceding that WIPP is nowhere near ready to open safely; 2) proposing to proceed with waste emplacement regardless; and 3) taking no action to resolve the matter of interim storage of waste pending the opening of WIPP.

Since I only have ten minutes, I want to focus my comments today on the proposed action identified in the Supplement to the Environmental Impact Statement for the WIPP. DOE proposes to conduct a five year "test phase" involving underground "experiments" with up to 88,750 drums of radioactive wastes. DOE proposes to defer compliance with Environmental Protection Agency (EPA) nuclear waste standards until after the "test phase" is completed.

My organization and others concerned about safety at WIPP believe very strongly that, before WIPP opens, we should know

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whether or not it is safe. In our view, the only credible means of determining whether or not it is safe is by assuring it against the EPA standards. These standards--the Environmental Standards for the Management and Disposal of Spent Nuclear Fuel, High Level and Transuranic Radioactive Wastes--were issued specifically for this purpose. DOE should confirm WIPP's ability to comply with these standards before any waste goes underground.

DOE argues in the SEIS that underground experiments with radioactive wastes are necessary to prove the adequacy of WIPP and the ability to "safely and efficiently" manage WIPP wastes. Determining compliance with EPA standards before waste emplacement was rejected as "unreasonable" because the Department would not have sufficient data for assessing site safety. We would argue that it's DOE's position that is unreasonable and should be rejected.

According to the SEIS, underground tests are designed to demonstrate waste handling operations and provide information concerning gas generation from the WIPP wastes. There are two subparts to the proposed tests:

**Operations Demonstration**

The purpose of these tests is to demonstrate the ability of the waste management system to safely and efficiently certify, package, transport, and emplace waste at full-scale rates. In other words, DOE wants to do trial runs with radioactive cargoes. But, why needlessly expose workers and the public to the risks associated with these dangerous materials if you don't have to? Tests and training can and should be done with drums containing simulated, non-radioactive wastes.

**Performance Assessment**

The second major proposed subpart of the Test Phase involves underground tests to collect information concerning expected gas generation from the WIPP wastes. TRU wastes are expected to give off significant quantities of gases. These gases are produced as they-products of bacterial action, metal corrosion, and radiolysis (chemical decomposition by the action of radiation) and could significantly pressurize the WIPP repository. It makes sense to try to get as much information on gas generation as is possible.

But, underground experiments will not yield accurate information on gas generation. Here's why:

- 1) Underground rooms cannot be properly sealed during the Test Phase to prevent waste gases from escaping.

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2) The waste types used in the experiments may not be representative of wastes types proposed for permanent emplacement in the WIPP. They may not include mixed hazardous/radioactive (about 60% of the total WIPP-destined wastes) because WIPP is currently not permitted to receive mixed wastes. And, they may not include remote-handled (RH) wastes (about 2% of the total WIPP destined wastes) because DOE does not have a cask to ship RH waste.

3) Five years may not be long enough to collect accurate data on expected gas generation. Some gases, particularly those resulting from organic decomposition, could take years to develop.

Absent any credible scientific rationale for the proposed underground experiments, we believe the proposed "Test Phase" is a ploy for fast-tracking the opening of WIPP.

Nevertheless, DOE persists in its argument that underground tests will provide "additional confidence" in the required EPA safety analyses. The question, then, to ask ourselves is: at what cost?

What happens if it the end of five years of testing DOE finds there is no way the WIPP system can comply with the EPA standards? It seems to me what happens will be one of two things:

- 1) The 88,750 drums of rad-waste will stay right where they are in a facility we know is not adequate for long-term disposal.
- 2) Wastes will have to be retrieved and shipped back to temporary storage sites doubling the shipping risks to states along the way.

Clearly, both of these outcomes is unacceptable. The only way to avoid them is to assess and demonstrate compliance with the EPA standards before the loading begins.

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**United Mine Workers of America**



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June 6, 1989

Mr. W. John Arthur, Project Manager  
WIPP SEIS Project Office  
U.S. Department of Energy  
6301 Indian School Road, N.E., 7th Floor  
Albuquerque, NM 87110

RE: Comments-Waste Isolation  
Pilot Plant (Draft  
Supplemental Environmental  
Impact Statement)

Dear Mr. Arthur:

On April 21, 1989, the Department of Energy (DOE) released a draft Supplemental Environmental Impact Statement (SEIS) on the Waste Isolation Pilot Plant (WIPP) in southeastern New Mexico. The United Mine Workers of America (UMWA) respectfully submits the following comments on the above-stated SEIS.

I. General Comments

The United Mine Workers of America (UMWA) opposes DOE's campaign to fast-track the proposed November 1989 opening of WIPP. In addition to DOE's history of gross mismanagement of nuclear weapons facilities, and its failure of concealing evidence of radioactive and other materials into the environment, the UMWA feels that any new facility of this proposed type must be (1) Safe when opened; (2) meet all National Environmental Policy Act, Resource Conservation and Recovery Act, EPA radioactive waste disposal and (3) address, explore and discuss all policy options with the public, DOE and other federal agencies, Congress, and state and local officials prior to opening of any WIPP facility. The UMWA submits that DOE, in its fast track mode, has not adequately addressed either public safety concerns or legal requirements in the proposed draft SEIS. The UMWA would emphasize to DOE that:



- \* All DOE facilities must comply with federal and state health and safety laws; and cleanup of existing contaminated DOE facilities must be given top priority over the opening of WIPP; and
- \* Citizens must be included in the national debate over what should be done with the contaminated DOE facilities, and they must also be included in the implementation of new policies and programs.

Additionally, the UMWA adopts as part of these comments the statement of the American Public Health Association (See, Attachment A).

#### II. SEIS - SPECIFIC DETAILED COMMENTS

- A. The draft SEIS inadequately evaluates transportation and Public Safety Problems.

Transportation issues affect citizens in the 23 states along proposed WIPP shipping routes. Transportation issues not adequately addressed include reliability of the shipping containers, using trucks rather than trains, unrealistically low projected releases from accidents, and inadequate training and equipment for emergency response personnel.

In the Final Environmental Impact Statement (FEIS) dated October, 1980 DOE assumed the reliability of shipping containers, because no WIPP shipping packages existed; the draft SEIS makes a similar assumption. The draft SEIS assumes that CH-TRU wastes will be shipped in TRUPACT-II containers. (pages 3-12 to 3-14) Because the first test unit failed to meet NRC regulations, the TRUPACT-II was modified and restated. One of the two redesigned units also failed to survive the tests without leaking. The container was again redesigned and DOE now states that testing has successfully passed the tests. However, NRC has not yet issued a TRUPACT-II certification nor has NRC yet ruled that DOE's application is complete.

For shipping the RH-TRU wastes, DOE assumes that it will use a type of MUPAC 72B shipping container. The actual container does not exist, and the draft SEIS says that it will be fabricated and tested "in the early 1990s." (p.3-14)

In the WIPP FEIS DOE assumed that 75 percent of wastes would be shipped by train and that 25 percent would be shipped by truck. (FEIS, pp. 6-18 and 619) The draft SEIS says that DOE expects to ship waste by truck (p. 3-5), although shipping 50% of the waste by train is included as a possibility. (p. 3-14)

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The WIPP FEIS estimated about 3,600 train shipments and 3,700 truck shipments of CH-TRU wastes. (SEIS, p. 6-19) The draft SEIS estimates 26,191 CH-TRU truck shipments or 14,509 rail shipments. (p. D-47) Combining both CH and RH TRU wastes, the draft SEIS estimates that a total of 34,144 truck shipments or 18,467 train shipments would be required during the 25-year lifetime of WIPP. (pp. 6-15) However, the draft SEIS also calculates 34,144 truck shipments or 18,506 train shipments (pp. 5-17 and 5-18, D-47), and 34,144 truck shipments or 18,505 train shipments. (p. D90)

The draft SEIS predicts less than one excess cancer death from radiation exposures from normal (no accident) waste shipments. (p. 5-15 and D-94 to D-96, D-101) The draft SEIS estimates that in situations not involving radionuclides that in 1980s and 106 will be shipped from WIPP, 34 people would die and 84 would be injured if wastes are shipped by rail. (pp. 6-15, 5-15) DOE's only stated rationale for using trucks rather than trains is "the greater accessibility to the site and greater control of the transportation system and routes." (p. 3-14) Such a rationale has no technical or factual support.

As a result of the State of New Mexico's 1981 lawsuit, the state and DOE agreed in December 1982 that DOE would provide about \$58 million to upgrade two-lane highways in New Mexico that could be used for WIPP shipments. In 1987, DOE agreed to assist the state in asking Congress for \$200 million to build a new Los Alamos-Santa Fe highway and bypasses around Santa Fe, Roswell, Artesia, Carlsbad, and Hobbs. The draft SEIS does not analyze potential differences in the number of accidents and predicted radiation releases if the bypasses are built. In fact SEIS fails to address risks of Los Alamos shipments entirely because of the uncertain status of bypasses - thereby avoiding the very sensitive issue of an accident in metro Santa Fe. Such a failure and avoidance to address such a critical issue diminishes the veracity of entire SEIS.

The "bounding case" accident (most severe imaginable) described in the draft SEIS would be 0002 of the wastes being released from TRUPACT-II. (p. D-87) Although no basis is given for that assumed release rate. Accordingly, DOE concludes that even in the bounding case accident, there would be no detectable health effects. (p. D-86) Again, no support for this conclusion is given. DOE's rationale for the 0.02% is that TRUPACT II will be perfectly built, maintained and operated so that it will perform as intended in an accident and not split open, but

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sustain only a small puncture which would not let enough oxygen inside to sustain a fire which would roll into the P. Also, DOE assumes that there wouldn't be any oxygen available anyway because all the engulfing fire at the TRUPACT-II would eat all the oxygen and there wouldn't be any to get inside. An entirely different scenario would result if human error in container manufacture/maintenance/operation led to a non-design breach in an accident which resulted in a real spill that exposed the 55 gallon drums directly to the outside environment. Therefore, DOE's assumptions are not only without merit, but also borders on idiocy.

In addition to the unrealistically low and unsupported estimate of potential releases, DOE's bounding case involves average CH-TRU wastes from Rocky Flats. However, the average CH-TRU shipment from RFP is not representative of the average radioactivity of shipments from other major sites. Hanford, WA shipments contain more than 4 times as much radioactivity; Oak Ridge, TN shipments contain more than 2.5 times as much radioactivity, and Savannah River shipments contain more than 12 times as much radioactivity. (p. B-9) Moreover, averages do not represent the shipments with the highest amounts of radioactivity, which should be considered to analyze a "worst case" accident scenario.

Moreover, the draft SEIS does not even consider releases of RH-TRU wastes even though some shipments could contain dozens of times the amount of radioactivity as the average CH-TRU shipment. The draft SEIS also has not considered how organic materials would interact with radionuclides in a fire because of the "lack of analytical data." (p. 5-32)

Therefore, all accident release scenarios assumed by DOE are not credible and cannot be relied upon to evaluate the effects of a severe transportation accident.

While no accidents releasing a significant amount of radiation are expected, DOE has provided some assistance in planning for emergency response in case of accidents. According to the draft SEIS, in 1988 more than 2,400 emergency responders were trained in 5 states. (p. 2-18 to 2-26 and Appendix C) However, that number is small compared to the people who are potential first responders. Further, the draft SEIS assumes that the only additional training to be conducted in the future will be done by state agencies despite the fact that during the 25 years of WIPP operation, emergency training will be a major operation, and during SEIS development, the draft SEIS does not discuss equipment needed by emergency responders, nor the fact that most emergency response personnel will not have equipment necessary to clean up an

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accident scene. Further the draft SEIS assumes that the states will provide necessary funding for emergency responses. Such an assumption has no factual basis. For example, in 1988 the Colorado legislature appears to have cut most if not all funds for this type of emergency response.

B. The draft SEIS evaluation of public health and safety issues does not justify proceeding with DOE's preferred alternative

DOE has not identified any immediate health and safety or environmental problems at its existing facilities that would be alleviated by WIPP. The draft SEIS, like the WIPP FEIS, states: "no environmental reasons have been found why TRU waste could not be left at the Idaho National Engineering Laboratory (INEL) stored as it is for several decades or even a century." (pp. 5-19, 5-173) The draft SEIS offers no different assessment for any other facility.

However, DOE acknowledges that opening WIPP will create public health and safety problems. The draft SEIS calculates that there will be 8.3 deaths and 106 injuries trucking wastes to WIPP (pp. 5-15, 5-35) and that in two of the four long-term release scenarios analyzed radioactive releases would exceed the EPA repository standard. (p. 5-167)

While all of these estimates may be overly optimistic several important questions are unanswered in the draft SEIS. For instance,

- \* If wastes at INEL will not harm the public, what is the justification for proceeding with WIPP which will certainly result in deaths and injuries?
- \* Since DOE calculates that deaths and injuries from train transportation (3 deaths and 34 injuries, pp. 5-15, 5-35 - are about one-third of those from truck shipments (8.3 deaths and 106 injuries), why does DOE plan to use trucks?
- \* Has DOE determined how many deaths are acceptable? Since apparently eight deaths are acceptable, would 20 deaths be acceptable? Would 100 be acceptable? What number of deaths is unacceptable to DOE at any site, along any transportation route or at WIPP?
- \* Why has DOE failed to include analysis of another alternative - above ground storage? Isn't this failure another violation of NSPAP?

DOE must realistically discuss "acceptable" and "unacceptable" risks to public health and safety at WIPP, at the existing sites, along transportation routes, and at any interim storage facilities.

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C. The draft SEIS does not justify the validity of the 3-year test phase

According to the draft SEIS, the preferred alternative is to proceed with opening up for a five-year test phase (pages 302 to 329) during which time the facility would be based in full operation. The primary purpose of the test phase is to reduce the volumes of wastes, costs, and personnel to replace wastes at WIPP, not to conduct scientific experiments. However, there is no scientific evidence to indicate any valid gas generation experiments could be conducted underground at WIPP because an "open" facility cannot approximate a closed repository. On the contrary, normal operation of the facility could disrupt any experiments because of movement and the continual changes in atmospheric pressure.

As for the need to demonstrate operational capability - loading wastes at the generation site, shipping them to WIPP, and receiving them at WIPP -- shipments with dummy wastes could provide such experience. In fact, if extensive experience is needed, such dummy shipments would be much safer and make more sense than waste shipments.

DOE's test phase emplacement is merely a phony ploy to fast-track the WIPP operation without providing proper analysis, public safety or adequate environmental protection.

III. OTHER SPECIFIC COMMENTS

A. Additionally, the UMMA questions use of real waste in operations, tests give the unnecessary additional low levels of radiation to which workers/miners would be exposed. The draft SEIS does not justify DOE's preferred alternative of opening WIPP without complying with EPA standards.

1. DOE must require a demonstration of compliance with EPA standards for waste disposal rather than allowing wastes to be first placed to generate data in order to set performance assessments. In other words, the "cart is in front of the horse" (or "hearse" given DOE's fast-track proposal and poor record).

2. Use of computer models is suggested with review by independent scientists and the public for comment prior to actual emplacement.

B. The draft SEIS must provide the information necessary to evaluate alternatives that are required if WIPP fails to meet the EPA standards.

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C. The draft SEIS does not discuss alternative interim on long-term storage sites.

1. Revise SEIS to include consideration of storage alternative.
2. Re-issue SEIS for public comment.
3. Consider public comments before DOE or Congress implement such plans.

D. Premature rejection in SEIS of the no action alternative.

1. No basis to reject that no action alternative since its impacts on public health and safety would be less.
2. No discussion of mitigation measures, expanded storage and compaction techniques, and no comparative data of DOE's proposed action for WIPP.
3. A no action alternative should be combined with a cleanup program, an existing DOE facilities to determine the environmental impacts of such a program.

E. DOE must adopt alternative action and first demonstrate compliance with EPA standards.

1. Fast-track opening in September 1989 not cost-efficient if failure occurs.
2. No performance assessment has been developed or supported by technical or factual data.

F. DOE has not detailed or evaluated the alternatives to address adequately its claim of adverse "national security" implications if WIPP does not open.

IV. Conclusions and Recommendations

The UMMA concludes that the draft SEIS is woefully deficient and must be re-issued. WIPP, in its current fast-track November, 1989 opening mode, must be delayed until safety is assured and all safety and environmental issues are adequately proposed, discussed and analyzed prior to opening.

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Emergency response funds must be assured in case of a problem once WIPP is put on a safe and sane opening schedule and all environmental, legal, and public safety concerns are adequately analyzed, met and implemented.

Respectfully Submitted,  
*Bruce Boyena*  
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Western Region Director  
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BB/LM

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**AMERICAN FRIENDS SERVICE COMMITTEE**  
ROCKY FLATS/NUCLEAR DISARMAMENT PROJECT

COLORADO OFFICE  
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June 6, 1989

I work for the Denver office of the American Friends Service Committee, a nationwide Quaker organization. Since the 1970's, we have been very concerned about dangers posed to public health and the environment by the Department of Energy's (DOE) Rocky Flats Nuclear Weapons Facility, located just sixteen miles northwest of downtown Denver. So I appreciate the opportunity to comment on the WIPP facility, designed for the permanent storage of transuranic wastes from Rocky Flats and other nuclear weapons production facilities.

I strongly oppose the DOE's proposal, as stated in its Supplement to the Environmental Impact Statement for the Waste Isolation Pilot Plant project, to store wastes at WIPP for a five-year Test Phase before demonstrating that the WIPP site is in full compliance with all standards and regulations established by the Environmental Protection Agency (EPA) for the management and disposal of transuranic radioactive wastes and mixed hazardous/radioactive wastes. Those of us who live in the large metropolitan area surrounding the Rocky Flats Plant know well the abominably poor record of the DOE and its predecessor agencies in handling the disposal of wastes created by Rocky Flats operations. So why should we trust the DOE when it assures us that it has a safe plan for storing wastes at WIPP? The DOE should prove conclusively that it meets all applicable national and state environmental and health standards before one barrel of waste is deposited in WIPP.

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NATIONAL OFFICE 1601 CHERRY STREET, PHOENIX, ARIZONA 85006  
An Alternative Action Employer

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Nor does the credibility record of DOE give us any basis for trusting their word about the adequacy of the WIPP. The DOE's penchant for secrecy and for telling less than "the truth, the whole truth, and nothing but the truth", was illustrated most recently by the June 3rd (1989) article in "The New York Times" about the discovery of cracks in the ceilings and floors of two large waste storage rooms at WIPP. Though these cracks were known to the DOE since December of 1987, they were not disclosed in any reports about the repository, including the two-volume SEIS that is the subject of today's public hearings. Why conceal from the public the existence of these cracks if, as the DOE claims, they are of little importance? Why not tell us about them so we will have the fullest possible information about WIPP? After all, we supposedly live in a free country where government officials--elected and appointed--supposedly serve the people and the public interest.

In opposing the Test Phase use of WIPP, I am not suggesting that I feel comfortable or safe with the continued storage of transuranic--and other--wastes at Rocky Flats. Given the record of the DOE and its predecessor agencies in handling Rocky Flats wastes, none of us who live in the metropolitan Denver-Boulder area should feel comfortable or safe. So I urge that, until WIPP demonstrates that it fully meets all applicable EPA standards, the federal government establish at some site a temporary storage facility for these wastes that meets all applicable federal and state environmental and health laws and standards.

Eager as I am to see all the Rocky Flats wastes properly disposed of, I do not share the attitude that says, "Get the wastes out of my area or county or state, and I don't care what danger this poses to the people who live near the new waste site." I wonder if the DOE is using this "Not in My Backyard" attitude to win support in Idaho, Colorado and elsewhere for

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a speedy opening of WIPP and its five-year Test Phase proposal). Instead of saying "Not in My Backyard", we need to recognize that the management, transportation and final disposal of these wastes is a nationwide problem that affects many of our states and cities, and so insist on a plan and process that assures safety and environmental protection for people everywhere in our country.

Finally, I want to speak to what I consider to be the arrogant and deceitful attitude in the words of Jim Bickel, DOE's Albuquerque-based assistant manager, at the WIPP-SEIS public hearing in Pocatello, Idaho last week. I see this attitude as characteristic of the DOE and its predecessor agencies.

According to the June 1st (1989) article in "The Denver Post", Mr. Bickel said: "We're not going to allow Rocky Flats to be shut down. . . . This country is not going to allow its nuclear deterrent to be weakened, and closing Rocky Flats would allow that to happen. No one's going to close it down."

Mr. Bickel is saying, in effect, that the DOE will do whatever it wants to do, and the public be damned! The valid concerns about, and thoughtful, scientific challenges to DOE proposals mean nothing to the agency. This is no surprise, of course, because the DOE and its predecessor agencies have always put the production of nuclear warheads as their first priority, with only slight, if any, attention given to public health, environmental protection, and proper waste management and clean-up. The phrase, "arrogance of power", aptly describes this attitude. So much for the theory of government as servant of the people.

The deceit lies in Mr. Bickel's claim that closing Rocky Flats would weaken our country's nuclear deterrent. The truth is that both the U.S. and the U.S.S.R. have enough nuclear warheads to destroy each other and the rest of the world several--perhaps many--times over. We do not need more nuclear warheads for an adequate deterrent. If more plutonium is needed for some valid purpose, we can recycle plutonium from older warheads. But surely Rocky Flats and other facilities have a large stockpile of plutonium, or why would

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Secretary of Energy Harrington have told Congress in 1988 that we're "washed" in plutonium? We ask you, officials of the DOE, to tell us, the people, how much plutonium is in the U.S. stockpile so that we can help decide if the closure of Rocky Flats would threaten our nuclear deterrent.

We the people need to challenge the claim that "national security" requires the building of more and more nuclear warheads and the resultant production of more and more radioactive and chemically hazardous wastes that harm the very people the warheads are supposed to protect. For more than forty years elected and appointed federal officials have used the cry of "national security" to get whatever weapons of war they desired. But they have used that cry too often for it to have credibility any longer. For we the people know that true national security means fewer nuclear warheads, not more; and that true national security means protecting the public health and the environment, not endangering health and environment by having a place like Rocky Flats contaminate air, soil, and water with radioactive and chemically hazardous wastes. Only in George Orwell's world of "1984", which too many of our DOE and Department of Defense leaders inhabit, could national security mean more nuclear warheads and more danger for the public health and environment. In Orwell's world, remember, war is peace, lying is truth, oppression is freedom.

Thank you.

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TESTIMONY  
FOR THE EIS  
SUPPLEMENT TO THE EIS  
WASTE ISOLATION PILOT PLANT

June 6, 1989  
Denver, Colorado

I am Ken Lichtenstein, a Denver native, and as a physician in private practice in the Denver community. I currently serve as both Secretary of the Denver Medical Society and as a member of the Health Committee of the Rocky Flats Environmental Monitoring Council. I am also the Southwest Regional Director of Physicians for Social Responsibility and serve on it's Task Force on Department of Energy (DOE) Facilities. In these capacities I have had the opportunity to study the health and safety aspects of the DOE Nuclear Weapons Production Facilities with a special emphasis on Rocky Flats. While serving on the Denver Medical Society's Radiation Safety Committee, I had the opportunity to review the safety aspects of nuclear waste transport.

The DOE record on health and safety is so poor that the only feasible alternative to support in the EIS is one that assures maximal external oversight, as in Article Two. As I will explain, there are major problems with the proposal for transport of nuclear waste, with safety at the WIPP site, and with the continued production of nuclear weapons which result in additional waste.

Over the years there have been releases of radionuclides in the Columbia River and surrounding environment from the Hanford facility, uranium releases into the atmosphere from the Fernald facility, and near "melt-downs" at the Savannah River Plant. Additionally, there have been over 200 fires at the Rocky Flats Plant (RFP) with the release of anywhere from 3.1 to 6.6 Curies of plutonium into the Denver soil. There was also the release of tritium into the Great Western Reservoir, contamination of the aquifers under the RFP, and 166 sites designated by the EPA for clean-up. All this occurred when there was no oversight by the EPA or laws under which the DOE had to comply to protect the environment, public health, or even it's own workers. Health from studies by the DOE, itself, demonstrating increased deaths from leukemia and lymphoma in it's workers. Inadmissible records amounts to a federal agency that has paid little, if any, regard to the preservation of the environment, health of the public, or safety of it's workers. These facts have been well documented by the National Academy of Sciences analysis of "safety issues at the

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Defense Production Reactors", the Lamm-Wirth Task Force Report, the GAO report to Congressman Skaggs on "Nuclear Health and Safety, Summary of Major Problems at DOE's Rocky Flats Plant", and the DOE report on "Environment, Safety, and Health - Technical Safety Appraisal of Building 776/777 Rocky Flats Plant".

Now, DOE plans to transport transuranic (TRU) waste from ten nuclear production facilities to the MIPP in New Mexico for five years prior to coming into compliance with EPA regulatory requirements. Based on the DOE record on the environment, health, and safety, this plan is totally unacceptable. In essence, DOE is saying "trust me". However, we already have reasons to question WIPP. The latest is the report in the New York Times on June 3, 1989, by Keith Schneider concerning the cracks that are forming in the ceiling and floor of WIPP with movement of the salt occurring at a much faster rate than was anticipated. For the sake of New Mexico and its residents and the safety of the MIPP workers, it is imperative that the WIPP facility be in total compliance with EPA regulations prior to beginning operations and prior to accepting TRU waste.

In Colorado the plan to transport TRU waste from INEL, Hanford, and Rocky Flats through Denver, Colorado Springs, and Pueblo down I-25 by truck means that there will be an average of 990 shipments per year for 20 years traveling through major metropolitan areas with high population and traffic densities. Why was rail transport abandoned when it is clearly safer because of fewer shipments and lower risk of accidents? The SEIS suggests that it is for control of these shipments. It also does not discuss the relative costs of the two modes of transit. Do control and cost outweigh public health and safety? Compound this with shipments from Hanford and future compaction of Rocky Flats TRU waste, both of which will have a higher concentration of radioactivity for the same weight and volume. This clearly will increase the risk to the public in the event of an accident.

Also, the Emergency Response Plan in Colorado is inadequate to handle a significant radiation accident. Currently, several Denver area hospital Emergency Room Directors state that in the event of a major accident at the RFP, they do not feel that their personnel could adequately handle patients contaminated with radioactive materials. Their only drills consist of one chemical or radiation spill scenario every two years. The SEIS does not detail an adequate Emergency Response Plan or its cost in the event of a radiation release from an accident in a major Colorado metropolitan area let alone anywhere else in the state. Such a plan will require emergency responders to be well-trained in radiation accidents with frequent drills. The public has a right to be protected from the errors of its own defense industry.

Finally, WIPP is intended to handle only a small percentage of the nation's TRU waste. In spite of this, the DOE 2010 Report

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states that continued production of nuclear weapons will take place into the foreseeable future. Additionally, DOE wants to modernize its production facilities and build new ones. Delay in the opening of MIPP will interfere with this due to further accumulation of waste with no solution for the problem. This is occurring in a world where the United States already has 30,000 nuclear warheads capable of destruction of the planet several times over. This is occurring in a world where the Soviet Union has effectively lost the Cold War with its economy in shambles. This is occurring in a world where the superpowers appear to be entering a "disarmament race". The major problem that WIPP epitomizes is the continued production of weapons of mass destruction independent of outside interests. The national security of the United States would not be jeopardized if we halted production of nuclear weapons for a few years while assessing our need to re-initiate these activities. During that time we could concentrate on our nuclear waste problem without adding to it. The only reason for continued production of these weapons, in my opinion, is bureaucratic inertia and a massive industry that can do little else.

For the purpose of this comment period, I would recommend alternative number 2. This would ensure the development of an adequate Emergency Response Plan for transport of TRU waste through Colorado. It would also ensure as well as possible the protection of the New Mexico environment, the public health of Colorado and New Mexico residents, and the safety of the workers at WIPP. In addition, I would recommend that DOE re-evaluate its current commitment to continued production in order to solve its nuclear waste problem. International events have given us this window of opportunity, and it would be a major error to let it pass us by.

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Rocky Flats Environmental  
Monitoring Council  
Southwest Regional Director,  
Physicians for Social  
Responsibility

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6/6/89

MY NAME IS PHIL BAILEY. I WAS APPOINTED TO THE ROCKY FLATS MONITORING COUNCIL IN 1988 AND HAVE SERVED 18 MONTHS ON THE COUNCIL. I CHAIR THE SUB-COMMITTEE ON PLANT OPERATIONS. MY REMARKS TODAY ARE AS AN INDIVIDUAL COUNCIL MEMBER AND DO NOT REPRESENT A COUNCIL POSITION. WE HAVE NOT DEALT WITH WIPP AS A COUNCIL ISSUE. IN ADDITION, I SERVE AS PRESIDENT OF THE BOARD OF THE COLORADO PEACENETWORK. I APPRECIATE THE COMMITTEES' PRESENCE IN COLORADO AND THANK YOU FOR THE OPPORTUNITY.

MY BASIC POSITION IS THAT IT IS INCUMBENT ON EVERYONE TO FIND SOLUTIONS. MY PURPOSE IS TO OFFER CONSTRUCTIVE COMMENTS TO THAT END.

THERE IS MUCH CONCERN IN COLORADO CONCERNING ENVIRONMENTAL ISSUES AND ROCKY FLATS IN PARTICULAR. ANY PUBLIC POLL OR FOCUS GROUP SHOWS THIS AS A GENERATOR AND CORRIDOR STATE FOR THE WIPP PROGRAM WE ARE A STATE WITH HIGHER RISKS THAN MOST.

I AM GOING TO ADDRESS TRANSPORTATION CONCERNS AND NOT THE WIPP FACILITY ITSELF AS I FEEL THAT SOONER OR LATER A FACILITY WILL EXIST. I URGE THAT INDEPENDENT SCIENTIFIC TESTIMONY BE USED IN EVALUATING SITE SUITABILITY AND SAFETY.

AS REGARDS TRANSPORTATION I HAVE THE FOLLOWING OBSERVATIONS:

- 1) AN UPGRADED RAIL SYSTEM WOULD BE A SAFER AND MORE MANAGEABLE TRANSPORT SYSTEM.
- 2) THERE ARE NO DOE FUNDS ALLOCATED FOR EMERGENCY TRAINING IN COLORADO. "IN KIND" TRAINING IS GROSSLY INADEQUATE. THE STATE OF COLORADO IS ASKING FOR THE FUNDS TO CONDUCT AND MANAGE THE TRAININGS. IT IS IMPERATIVE THAT DOE COOPERATE WITH THE AFFECTED STATES IF WE ARE TO HAVE EFFECTIVE TRAINING OF WHAT ARE LARGELY VOLUNTEER EMERGENCY RESPONSE TEAMS.
- 3) THERE ARE NO TIME OF DAY RESTRICTIONS, LIGHTS ON AT ALL TIMES, OR EVEN ESCORTS REQUIRED FOR THE TRUCKS. AS FAR AS I KNOW THESE SIMPLE SAFETY PRECAUTIONS ARE NOT EVEN BEING CONSIDERED. IN OTHER WORDS, A MOBILE HOME IN TRANSIT IS REQUIRED TO HAVE AN ESCORT AND LIGHTS BUT NOT NUCLEAR WASTE.

IN THE CASE OF AN ACCIDENT ON OUR HIGHWAYS THERE WOULD

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NOT HAVE TO BE A RADIOACTIVE RELEASE TO AFFECT US. A REPEAT OF THE INFAMOUS 'TORPEDO SPILL' COULD CRIPPLE THE STATES' ECONOMIC DEVELOPMENT EFFORTS.

JUST THE THOUGHT OF A JACKKNIFE TRUCK ON HWY 36 OR I-25 AT RUSH HOUR IS BAD ENOUGH (AND THAT HAPPENS) BUT A NUCLEAR WASTE TRUCK IN AN ACCIDENT WILL GIVE US NATIONWIDE HEADLINES WE'D RATHER AVOID.

4) COLORADO WEATHER IS TRICKY AT BEST. IT CAN BE CLEAR IN DENVER AND BLIZZARD CONDITIONS ON MONUMENT HILL OR GALE WINDS IN TRINIDAD. AGAIN, RAIL IS THE PREFERRED TRANSPORT SYSTEM BUT IF THE DOE INSISTS ON TRUCKS THEY SHOULD PROVIDE THE STATE WITH FACILITIES TO ASSURE IMMEDIATE COMMUNICATION WITH ALL VEHICLES.

5) THE DOE MUST BE REQUIRED TO COMPLY WITH STATE LAWS AND REGULATIONS. THIS, TO ME, IS NOT A NEGOTIABLE SITUATION. FOR YEARS THE DOE HAS, AT BEST, IGNORED STATE LAWS. THERE IS A REAL LACK OF TRUST IN THE DOE IN WESTERN STATES AND FOR GOOD REASON. NOW IS THE TIME FOR THE DOE TO COMPLY AND STOP THE STALLING.

IN SUMMARY, I THINK COMMON SENSE IS PART OF THE ANSWER. I HOPE THIS COMMITTEE TAKES SUGGESTIONS SERIOUSLY AND WILL MOVE TO SUPPORT THE FEW I HAVE MENTIONED. IT IS IMPORTANT TO THIS PART OF THE COUNTRY THAT WE HEAR FROM WASHINGTON THAT STATES RIGHTS ARE NOT A THING OF THE PAST BUT HAVE YOUR SINCERE AND UNEQUALLED SUPPORT.

THANK YOU FOR YOUR TIME.

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My name is Dale UNI. I live at 1630 Claremont Lane, Idaho Falls, Idaho 83404. I am President and Co-Founder of WASTREN, Inc., a waste management consulting firm in Idaho Falls. I have been with WASTREN for two years and prior to that I was Manager of all Waste Management Programs at the Idaho National Engineering Laboratory for five years. I have been directly involved with this nations TRU waste program for the last twelve (12) years and I currently provide consulting services to WIPP and a number of the TRU waste generating sites. I therefore believe my remarks are based upon sufficient experience, understanding and knowledge of the technical details and political realities involved in the development of the Waste Isolation Pilot Plant to allow me to voice unequivocal support for the proposed action as stated in the Draft Supplement to the EIS for WIPP.

The phased approach to operations beginning with the Performance Assessment testing and the Integrated Operations Demonstration is both a logical and technically sound manner to proceed. To pursue either of the other two alternatives at this juncture would be an inappropriate departure from credible and democratic decision-making.

Clearly, this nation, as with most nations of the world, has a host of critical, present-day waste management problems. As a so-called "developed nation", our problems begin with the municipal waste which is strangling our major cities and continues to the header and ostensibly riskier management of national defense-generated radioactive and hazardous wastes. Taken collectively, America's waste management is and should be considered "Crisis Management". However, WIPP represents our nations first and very best attempt to effectively deal with one critical component of the waste management problem.

I believe the Department of Energy should be strongly commended for its efforts to implement Public Law 96-164 by establishing the nations first disposal site for defense generated transuranic waste. The DOE is also to be commended for its simultaneous efforts to establish a high-level radioactive waste repository at the YUCCA Mountain site in Nevada. I believe that both of these sites, one in salt and one in TUFF, afford the nation the best possible geological and demographic locations combined with the best technologies currently available to effectively deal with these wastes. These two options offer the highest possible level of long-term protection to the U.S. population that we can presently achieve.

I am thoroughly familiar with the current methods for storing, retrieving, and certifying the TRU waste inventory at the INEL and other waste generating sites. I believe the scientific methods used to non-destructively examine and assay this waste for certification to ship to WIPP will ensure that only known and acceptable materials will be placed in the salt media. The present day storage methods at the DOE sites have and continue to assure the integrity of the stored TRU waste. However, WIPP provides a significantly safer alternative for the TRU waste than does the no action alternative. The no action alternative would also require considerable cost to the U. S. taxpayer to upgrade the current storage facilities to meet RCRA requirements. This could potentially amount to hundreds of millions of dollars spent needlessly and with no real safety enhancement for the public.

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I further believe DOE should be commended for its exceptional efforts to assure safety in transporting the TRU waste from generating and storage sites to the WIPP facility. Clearly the efforts DOE has chosen to undertake to develop a safe and reliable shipping container and to request certification by the NRC demonstrates DOE's desire to be a conscientious member of the community and to protect the health and safety of all personnel.

The next step in this process must be to develop the site specific technical data needed to assure that the long-term performance of WIPP will meet 40 CFR 191 requirements. Clearly, the five (5) year Technical Program Plan, which has been developed jointly with Westinghouse and Sandia and has been extensively overviewed by both the New Mexico Environmental Evaluation Group and the National Academy of Science, is a technically sound, politically acceptable, and conservative approach to opening WIPP.

In summary, I believe the Supplemental EIS preferred alternative offers us all a sound and logical next step in the effective management of a portion of this nations accumulating waste problem. What is proposed in this supplement is a reasoned, defensible, scientific approach which is obviously open to public involvement and scrutiny. We all want this waste properly managed. The proposed phased approach will allow this to happen at a prudent and deliberate pace. Delaying the process further should be unacceptable to all reasonable public sectors.

Thank you.

3:1-1

1-1

October 29, 1988

Governor Romer's Office  
 attention Mr. Tim Holman  
 136 State Capitol  
 Denver, CO 80203 - 1792

Dear Tim,

I am attaching a calculation that shows the maximum permissible quantity of plutonium that can be contained in the 1600 cubic yards of medium level storage that is permitted at Rocky Flats. As I discussed with you the figures are astronomical—*1,200 Kilograms of plutonium—73,500 Curies*

I strongly recommend that you call those numbers to Governor Romer's attention. I doubt that the Governor realized the danger of the plutonium levels in medium level storage. In case of fire, flood, or a plane crash into the stored drums, we have the stage setting for a major disaster that could irretrievably contaminate the city and people of Denver. It makes a mockery of the claims that I have heard that the maximum credible accident at Rocky Flats can only release 100 grams of plutonium (one-half of one barrel load of waste).

If Rocky Flats officials claim that less is stored in each drum, the numbers they have issued contradicts that. The burden of proof would be on them. What fraction of well over a ton of plutonium would constitute an acceptable amount?

I believe the danger of waste storage is far, far more serious than we have been led to assume. Incidentally, compaction or incineration will not change that picture. Reducing the volume of the waste will only make it possible to store still more plutonium.

If there is any other information that I can supply, please call on me.

Sincerely,

Joe Goldfield

**Quantity of Plutonium to be Stored in 1600 Cubic Yards of Waste**

Assumptions--1. 1600 cubic yards of medium level waste can be stored at the Rocky Flats plant in 55 gallon drums.

2. According to Mr. Earl Whiteman--each 55 gallon drum of medium level waste can contain up to 200 grams of plutonium.

$$\frac{55 \text{ gals/bbl} \times 1}{7.5 \text{ gals/cu ft}} = 0.272 \text{ cu yds/bbl}$$

$$\frac{1600 \text{ cu yds}}{0.272 \text{ cu yds/bbl}} = 5882 \text{ bbls}$$

$$5882 \text{ bbls} \times 200 \text{ g Pu/bbl} = 1,176,400 \text{ grams Pu} = 1,200 \text{ kg}$$

$$\frac{1,176,400 \text{ grams}}{16 \text{ grams/Cu}} = 73,500 \text{ Curies}$$

$$1,200 \text{ kg} = 2640 \text{ lbs} = 1.32 \text{ tons III}$$

$$1,176,400 \text{ grams} = 73,500 \text{ Curies}$$

$$16 \text{ grams/Cu}$$

$$73,500 \text{ Curies}$$

## EXECUTIVE SUMMARY

## ROCKY FLATS FLUID BED INCINERATOR

## EXPOSURE OF CITIZENS DUE TO NORMAL OPERATIONS AND EXPLOSIONS

J. Goldfield, P. E., Niels Schonbeck, Ph. D., Gale Biggs, Ph. D.

September 1, 1987

This paper explores the exposure of residents in the vicinity of the Rocky Flats plant to plutonium emissions caused by explosions and by the "normal" operation of the installation.

## Explosion Hazard

Explosions can be caused by vaporized, inflammable liquids that are present in concentrations that are between the lower and upper explosive limits. A source of ignition must be available and the oxygen content of the mixture must be above about 12%. In the FBI three of the four required conditions for explosion are frequently present. Only the oxygen content is marginally insufficient to permit explosions. The oxygen content can be raised by a surge in the supply air, a drop or failure of the nitrogen supply, air leakage through the solids feed screw or some combination of these.

If the explosion occurs after six months of operation, when as much as 112 grams of plutonium-239 (Curies), had been charged into the FBI, 38 grams or 2.8 Ci of plutonium could be blown outdoors. That amount is 2.8x10<sup>13</sup> times as great as the Rocky Flats prediction of the yearly emission rate of 1x10<sup>-11</sup> Ci/year.

## Normal Emissions

Rocky Flats estimates of the exposure of residents at the property line to breathing plutonium is 7x10<sup>-13</sup> rems/year whereas 0.1 rems per year is acceptable. Their calculations are based on the assumption of four parameters that are subject to question:

Five HEPA filters in series reduces the 18 Ci/year of plutonium charged into the FBI by a factor of 8x10<sup>-15</sup>. For many reasons, but principally

undetected leakage, our estimate for the HEPA reduction factor is 3x10<sup>-8</sup>. A person breathes at a rate of 16 liters per minute. This figure is for a person at rest. We believe it should be estimated at three times as great.

The meteorological conditions cause a reduction in plutonium concentration by dilution between the stack and the property line of 3.5x10<sup>-5</sup>s/m<sup>2</sup>. This result is based on assumptions that are not sufficiently conservative. The number should be 37 times as large.

The health effect of plutonium is translated by the factor of 0.0005 rem/pCi. Due to considerations of nonuniform distribution of plutonium in relatively small amounts of body tissue, we believe that this health effect is understated by a factor of between 370 and 370,000.

The understatement of health risks is between 1.6x10<sup>11</sup> and 1.6x10<sup>14</sup>, changing the estimated exposure of people at the property line to between 0.1 to 100 rems/year, or 1 to 1,000 times the allowable.

Our estimates are, admittedly, based on more conservative assumptions than those of Rocky Flats. Nevertheless, when the health, safety, and well-being of over 1,000,000 residents of the Denver metropolitan area are involved, conservative estimates are the only prudent and responsible choice.

Incidentally, the conclusion of the remote possibility of disease by the Center of Disease Control (one in 68 quadrillion) due to the test burn is based on an insufficiently critical acceptance of the Rocky Flats reduction factors of plutonium concentration.

ROCKY FLATS FLUID BED INCINERATOR

Two Important Issues

EXPOSURE OF CITIZENS DUE TO NORMAL OPERATIONS AND EXPLOSIONS

J. Goldfield, P. E., Consulting Engineer

Niels Schonbeck, Ph. D., College Professor

Gale Biggs, Ph. D., Consultant

September 1, 1987

I. INTRODUCTION

This paper has been prepared by three members of an independent group called "The Boulder Scientists". They are highly qualified technically and can present their credentials to anyone interested.

In this presentation, attention is focused on two issues: (1) plutonium emissions caused by an explosion after 1,000 hours of incinerator operation; and (2) plutonium emissions during "normal" operation.

Although not publicly considered by either Rocky Flats personnel, nor by any of the reviewing panels and authorities, explosion is far from being a remote possibility. Worst case scenarios have not been properly evaluated.

Estimates of plutonium emissions are based on the use of four factors that are estimates themselves. The factors used by Rocky Flats personnel and repeated by others are far from being conservatively estimated - considering that over 1,000,000 people, who may be adversely affected, reside in the area adjacent to the incinerator emissions. This paper critically reviews those factors and proposes new values that place new and more frightening insight into the exposure of citizens due to incinerator operation.

II. EXPOSURE DUE TO EXPLOSIONS

Rocky Flats Estimate of Plutonium Emissions

In attachment 2 of the answers to technical comments made by citizens and several governmental agencies (1), calculations made by Rocky Flats personnel are presented that purport to show the relatively small danger of exposure to residents of the Denver metropolitan area, of operations of the Fluid Bed Incinerator (hereinafter called FBI) proposed for burning low level radioactive wastes. Several of those calculations are reproduced in Appendix I, attached to this paper.

One of those calculations concludes that the emission of plutonium to the atmosphere in the course of a year will be  $1 \times 10^{-7}$   $\mu$ CI. Since a  $\mu$ CI is  $10^{-6}$  Ci, the Rocky Flats estimate, is a truly small level of emissions.

Emissions During an Explosion

What would the emissions possibly be if an explosion occurred in the FBI?

Calculations are presented in Appendix I to show the amount of plutonium that would accumulate in the incinerator in 1,000 hours of operation, based on several assumptions. Rocky Flats documents (2) state that the incinerator will burn 180 lb/hr of solid waste containing 100 nCi of plutonium per gram of waste. In 1,000 hours of operation, the total amount of plutonium charged into the incinerator will be 112 grams, or 8.2 Ci (curies).

To analyze the dimensions of the problem, let us assume that one-third leaves with the ash, and two-thirds, 75 grams (5.5 Ci), will be retained in the beds and the HEPA filters. In case of an explosion it has been assumed that half of the contents of the incinerator will be blown to outdoors, releasing 38 grams or 2.8 Ci of plutonium.

Compare this amount of 2.8 Ci with the predicted emission of  $1 \times 10^{-7}$   $\mu$ CI per year. The discharge, due to explosion, is  $2.8 \times 10^{13}$  times as great as the Rocky Flats prediction for the yearly emission rate. That event must be analyzed for citizen exposure and resulting health hazards before the FBI is operated.

#### Explosion Hazards

The danger of explosion has been presented to the Skaggs panel of scientists, the Colorado Department of Health, the EPA, and Governor Romer's staff. The risk of explosion has not been publicly acknowledged nor addressed by anyone.

Vapors of organic materials and dusts can explode under the right conditions. It is, of course, well known that gasoline, household gas, oil used for home heating, grain and flour stored in silos can all explode with disastrous consequences causing loss of life and property. Many of the organic liquids to be charged into the incinerator have the same characteristics as gasoline and home heating oils. In fact, Rocky Flats recognizes some of the hazards and describes the tanks for holding the liquids to be charged into the FBI as supplied with "A nitrogen gas pad system automatically maintains an inert atmosphere in the tank head space by adding nitrogen as the tank empties and venting nitrogen during the tank filling process" (2). Isn't this item installed in order to minimize the danger of fires and explosions? If the hazard is present at normal temperatures, why is it so difficult to foresee a hazard when these same materials are charged into reactors at elevated temperatures (exceeding 1,000° F) and where air is introduced?

The explosion hazard must be addressed before the FBI operates. For some reason this hazard is ignored in the papers prepared by Rockwell and all the pertinent authorities who have looked at the operation.

#### Conditions for Explosion

The following conditions must be met for explosions to occur:

1. The material being handled must be inflammable (there are exceptions to this, e. g. aluminum dust can explode).
2. The material must be in a form and concentration that is within the explosive range (above the lower explosive limit but under the upper explosive limit).
3. The oxygen level must be sufficient. (Normal oxygen level is about 20%.

Explosions can occur in the presence of nitrogen down to about 12% oxygen.)

4. A source of ignition such as a flame, spark or temperature in excess of the ignition temperature must be present.

In the incinerator description (2) a series of liquids to be burned includes styrene, xylene, toluene, benzene, and ethyl alcohol. All of these liquids are inflammable and therefore potentially explosive.

Calculations in the appendix show that 40 to 53 pounds per hour of each of these materials, vaporized in 320 SCFM (the volume of gas in the first reactor) generates a concentration that is at the lower explosive limit. Since it is proposed to charge as much as 88 pounds per hour into the equipment, the concentration can build up to well above the lower explosive limit in each case. That does not mean that the installation would be safe if concentrations were slightly below the lower explosive limit. It is common industrial practice to use a factor of safety of four and allow no more material than enough to form a concentration of one-quarter of the lower explosive limit to form.

The oxygen content of the first reactor will be limited by the addition of nitrogen so that only 25% of the combustibles will be consumed in the first reactor. There is no monitoring of the oxygen content nor any attempt to insure that there is an inert atmosphere with an acceptable safety factor to insure against explosion. Indeed if enough nitrogen were introduced to insure safety against explosion, no combustion would take place in the first reactor. Thus, 75% of the combustibles will fill the first reactor and be prevented from exploding only because the concentration of oxygen is just barely below the amount required.

The normal operating temperature of the reactor is well above the ignition temperature of most organic materials.

All conditions are present for explosion except for sufficient oxygen. That deficiency can easily be remedied by a surge in the air supply to the first reactor, a failure of the nitrogen supply, a leak through the solids feed screw or some combination of those circumstances. Similar upset conditions can be postulated for the second reactor vessel or afterburner.

**Conclusion**—An explosion is a possible occurrence. Ways of reducing its likelihood and limiting the resulting exposure of the citizens to plutonium emissions must be installed before the FBI can be tested. Even with changes to minimize the explosion hazard, it is prudent and safer to move the operation to a remote, unpopulated area.

### III. PLUTONIUM EXPOSURE DUE TO NORMAL OPERATION

#### Rocky Flats Estimate of Normal Exposure

In the same attachment 2 discussed before (1), there is a calculation of the yearly dose of a person breathing air at the Rocky Flats property line. It is concluded that such a person will receive a dose of  $7 \times 10^{-13}$  rem/year of plutonium whereas 0.1 rem per year is acceptable. The calculations are presented in Appendix I.

Those calculations rest on the following assumptions:

There are five HEPA filter banks in series—reducing the extremely high potential plutonium contamination (18 curies/year) by a factor of  $8 \times 10^{-15}$ .

A person breathes at a rate of  $2.66 \times 10^2$  mls or 16 liters per minute.

The meteorological conditions cause a reduction in plutonium concentration between the stack and the property line of  $3.5 \times 10^{-5}$   $S_g/m^3$ .

The exposure to plutonium is translated by the factor  $5.1 \times 10^{-4}$  rem/pCi.

The discussion below will show that the exposure is understated by a factor as high as  $1.6 \times 10^{11}$  to  $1.6 \times 10^{14}$ , changing the dose due to breathing from what appears to be a very low one to one that is 1 to 1000 times what is acceptable.

#### HEPA Reduction Factor— $8 \times 10^{-15}$

The HEPA reduction factor is based on five filters in series—the first one with an efficiency of 99.95% and 99.8% efficiency for each of the next four. The calculation, arriving at the reduction factor is shown in the appendix.

HEPA filters are quite efficient. However, using exact numbers to define the efficiency in systems of this type is not reasonable. The efficiency of the HEPA filter material is tested by means of a DOP (di-octyl phthalate) test. The essential nature of this test is to generate a smoke by condensing DOP vapor to a particulate, with a particle size as close to 0.3 micron in size as possible. This smoke, at a concentration of about 100  $\mu g/l$  is blown through the filter paper and the penetration is measured with a forward-light scattering photometer. Readings obtained by this method are good relative readings but can they be translated to the efficiency of five HEPA filters in series?

They cannot for the following reasons:

1. The concentration of particulate in the FBI before the first HEPA filter is estimated to be 0.686  $\mu g$  per liter instead of 100  $\mu g$  per liter recalled as the concentration in the DOP test. The concentration at the second HEPA filter will be three or four orders of magnitude lower. (Three or four orders of magnitude correspond to reductions of 1,000 to 10,000-fold.) As we proceed with the analysis for each subsequent HEPA filter the concentration will be reduced by orders of magnitude from one to the other. Not only will such reduced concentrations change the filter efficiency (undoubtedly reducing it) but make any numerical estimate of efficiency subject to grave doubt. Such fact is particularly true of each stage of filtration of the bank of five.

No test method is available to check the efficiency of even the first stage of HEPA filtration given by Rocky Flats as 99.95% when filtering particles in an air stream where the concentration is 0.686  $\mu g/l$ . This problem becomes worse as we analyze two, three, four and five filters in series. Thus, the efficiency figures used by Rocky Flats cannot be verified.

2. Leakage can make a mockery of the claimed efficiencies. A leak of

500CFM out of a total of 5,000CFM will increase the filter penetration by 1% of the total particulate, changing a claimed filter efficiency of 99.95% to 99%, an increased penetration of twenty-fold. Similarly, a leak of 500CFM will reduce the filter efficiency to 90%, an increase of particulate penetration of two hundred-fold over the stated 99.95%.

Leaks of that order of magnitude are difficult to detect by the methods of detection outlined by Rocky Flats. The only method of monitoring the integrity of the filters is to check pressure drop across them and take action at levels <0.1 and >6.0 inches of water. Since the normal pressure drop across a filter is about one or two inches of water, it would take a catastrophic filter failure to record readings of <0.1 inch of water (see page 31 of (1)). A leak of 1% of the contaminated air around a filter will change the filter pressure drop of a filter at 2 inches of water by 0.02 inches of water, an almost undetectable change. A leak of 10% of the air around a similar filter will change the reading by 0.2 of an inch of water--well within pressure drop changes caused by normal, expected changes in system flow and dust buildup on the filter. (Temperature changes from 475°C to 650°C may be expected (page 71 of (1)). If the actual volume is kept constant, volumes through the filters will vary by  $923^{\circ}\text{K} \times 748^{\circ}\text{K} = 1.23$  or 23% change. Filter pressure drop will change in direct proportion.)

Leaks of 50 CFM will require a hole of about 1.5 square inches--a relatively small opening or series of openings totalling that amount of area. Similarly a leak of 500CFM will require an opening of 15 square inches. Where the flue gas flow from the FBI is only 600 SCFM, a leak of one per cent of the flow would require a leakage area of only 0.15 sq. ins. and a leak of 10% of the air flow requires a leakage area of 1.5 sq. ins. (approximately).

If it is thought that leakage is uncommon, see page 7.1 of (8).  
 "... Initial in-place tests of 50 HEPA filter banks at one AEC installation revealed 31 banks (62%) that would not meet the specified efficiency of 99.95%." On the same page appears the following "... Although test results are expressed as "percent efficiency," all of the in-place tests are basically leak tests. When the tests are made of components of known efficiency, the numbers give an indication of system efficiency." (Italics added.) The reason that tests in place are only an indication of system efficiency is because of many uncontrolled and uncontrollable variables, not the least of which is the DOP smoke particle size -- generally about

0.7 microns in diameter instead of the laboratory smoke particle size which is 0.3 microns in diameter.

Periodic testing (at least after any filter change or every few months) is considered extremely important: "A basic principle of exhaust air-cleaning systems is that no credit can be taken for safety if the HEPA filters and adsorbers are not tested regularly" (page 7.1 of (6)). Rocky Flats is obligated to describe in detail the methods of construction that are used to insure leaktightness and to allow frequent, in place testing of the HEPA filter system banks--each one individually.

The paper filter material, of which HEPA filters are made is relatively fragile. It can be readily damaged. A filter bank contains many square feet of area and damage is difficult to detect. The pleated filter material is mounted in a frame and the material is sealed to the frame by means of a mastic seal due to rough handling, temperature excursions, or poor application. The filter and its frame are mounted in turn on a rigid steel frame. It is extremely difficult to obtain leaktight sealing between the filter frame and the permanent frame. Leaks will appear at installation or develop over time as a result of expansion and contraction and due to gasket failure. (Witness the failure of gaskets on the Challenger rocket.)

Condensation of water in the cooled gases before the HEPA filters can cause them to blind and rupture. Temperature excursions in the gases leaving the FBI can damage the HEPA filters, the mastic sealants, or the gaskets between filter frames and permanent frames.

When so many guesses are being made and when so many inadequately monitored parameters can impinge on the emissions of a facility to which over a million people can be exposed, it would be well to err on the side of caution. My own guesses are that the first filter of the HEPA bank will have an efficiency of 99.5% and subsequent banks will have efficiencies of 90-99%--estimated at 95%. With these estimated efficiencies the reduction factor of the five HEPA banks will be  $3 \times 10^{-8}$  instead of  $8 \times 10^{-15}$ .

#### Breathing Rates

The lowest resting ventilation volume (breathing rate) for an adult is

approximately 5 liters/min. Normal ventilation volumes range from 8 to 15 l/min, depending upon body size. Casual exercise such as jogging raises the rate to 60-110 l/min and hard exercise to 135-155 l/min, with 200 l/min having been recorded for a large, athletic man. (7)

The Rocky Flats choice of 16 l/min is the upper limit for normal, non-exercising adults. However, a more conservative choice should account to some extent for exercise conditions. We feel that the Rocky Flats figure should be increased by a factor of three at least to 48 l/min, which still is below casual exercise ventilation volumes.

#### Wind Dispersion

In the Rocky Flats presentation, a wind speed of 3 mps and an E stability were assumed for the diffusion calculation of the plume effluents. These assumptions are optimum and not conservative. No data has been presented by Rockwell International to support these values and common practice is to assume worst case scenarios unless less conservative scenarios can be supported by on-site data.

The location of Rocky Flats next to the front range places it in unique meteorological conditions with both high winds in the winter and persistent west winds during the nighttime hours. These nighttime winds are highly channelled by topography and can provide for concentrated effluents travelling off the plant site. A worst case scenario would be as presented in the letter of March 4, 1987 (8) to Mr. Peter Bierbaum. A stability category of G for atmospheric dispersion and a wind speed of 0.5 mps would better represent a worst case scenario (9). Using these input values to the equation used by Rockwell International in their analyses yields a value for X/Q of  $1.3 \times 10^{-5}$  s/m<sup>3</sup>. This value is 37 times larger than the  $3.5 \times 10^{-5}$  s/m<sup>3</sup> used in the analysis by Rockwell International.

#### Biological Effects

##### Discussion:

Human cancer risk resulting from exposure to plutonium is extreme: 1 μg (82 nCi) in the lung will give a very high risk of cancer. However, scientists do not yet know the minimum amount of plutonium that causes

upward health effects in humans. A recent study of workers at Rocky Flats has shown that a 2 nCi plutonium body burden, which is equivalent to 0.03 μg, is correlated with increased cancer incidence (10). Because of the short induction period (5 years) used in this study, the 2 nCi value, in all likelihood, is still not the lower limit. For induction periods of 20-40 years, the time it takes most cancers to show up, it is likely that one-tenth of 2 nCi or even less, ultimately will be correlated with increased cancer incidence. It is noteworthy that the current limit of detection of plutonium using a chest monitor is roughly 2 nCi. Thus, it may be that plutonium is hazardous at levels well below what we can detect without autopsy tissue analysis.

In light of this uncertainty about plutonium hazard, it is very difficult to assess occupational and public health effects of operations at Rocky Flats. It would only seem prudent that responsible officials would choose conservative risk factors for plutonium. The proximity of Colorado's major urban area to Rocky Flats underscores this admonition.

Exposure factors for radioactive substances are used to quantify health risks, and these factors are based on our understanding of specific toxicity. Documents from Rocky Flats state simply that the exposure factor for plutonium is 512 rem/μCi (1), which is equivalent to 0.0005 rem/pCi. Two related criticisms are in order. First, several assumptions must be made to calculate such a value, and these assumptions are not given. Second, a single number, rather than a range of values, implies a degree of certainty about plutonium risk that is unwarranted. Furthermore, without the assumptions and a range of values, there is no way public health officials can exercise their responsibility to choose a conservative estimate.

To assign a range of values for the plutonium exposure factor, two other factors must be assumed first: (1) plutonium's biological effect relative to other forms of radiation (RBE); and (2) plutonium's distribution in the body. The form plutonium takes in the environment influences these assumptions. Primary sources of plutonium from Rocky Flats are ongoing plant stack emissions and wind resuspension of particles from contaminated areas on the ground. The major route into the body is inhalation of these airborne particles with deposition in the lung. The International Commission on Radiological Protection discusses RBE values for various forms of plutonium (11). General lack of good data at low dose levels makes extrapolation necessary. However, the ICRP states a



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RBE range of 23-85 for plutonium, where the high end of the range refers to insoluble particles (11). Rocky Flats emits plutonium as highly insoluble PuO<sub>2</sub> particles of respirable (submicron) size.

The animal experiments on which these ICRP RBE values are based, are, however, inadequate. It is questionable that the available animal data can be extrapolated to humans and the factors involved (wasted radiation in high-dose experiments, multiple cancers in test animals, high metabolic and mitotic rates of animal tissue compared to humans, high rate of cell killing by high specific alpha activity) - all indicate that human risk is seriously underestimated (12).

The second, and related, issue is tissue distribution of plutonium particles. Plutonium is not uniformly distributed in affected tissues under any known circumstance (13). The effect which nonuniformity has on dose levels is to increase exposure profoundly, as illustrated in Table 1 (Appendix II). It should be noted that it is not valid to choose extreme values for both RBE and nonuniform distribution, since high RBE values themselves reflect a degree of nonuniformity in particle distribution.

Occupational standards in use today were set by antiquated guidelines which assumed uniform distribution by averaging the plutonium burden and the alpha dose over the whole affected organ. Many radiation research scientists today understand that this dose averaging assumption is wrong for insoluble actinide particles such as plutonium. Yet officials in the Department of Energy at Rocky Flats and other federal agencies and their contractors, persist in using this dose averaging method which minimizes the plutonium hazard.

Much evidence exists in the scientific literature to support the discarding of dose averaging for insoluble, internal alpha emitters such as plutonium. First, it is a matter of logic that a single malignant tumor can be as deadly as multiple tumors, and, therefore, insult to a single tissue site could be sufficient to cause cancer. Second, cancer development is a multistage process which requires a long latency (20-40 years) before the disease manifests (14). Third, the minimum volume of tissue required to support this multistage process has been estimated as 0.1 to 1 mg of tissue for radiation-induced cancer (15). Four, on the average a single alpha particle passing through the nucleus of a cell delivers close to 100 rad to the nucleus (16). (As a point of comparison, 2 nCi Pu generates about 60 alpha particles per second.) Five, among the alpha emitters

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themselves, plutonium is very potent; compared to radium-226, once thought to be the most carcinogenic substance known, plutonium-239 is 9.0 times as effective and plutonium-238 is 15.5 times as effective at causing cancer because the plutonium alpha doses are much more highly localized (17). Taken together, these five points illustrate that deposition of small amounts of plutonium in very small tissue volumes generates significant potential for carcinogenesis, and that organ dose averaging severely underestimates cancer risks for inhaled plutonium.

#### Assessment and Calculations:

The Rocky Flats value of 0.0005 rem/pCi is anything but conservative. In Table 1 (Appendix II), 0.0005 rem/pCi corresponds most closely to an RBE of 10 and uniform distribution in the lung; neither of these assumptions are appropriate for the form of plutonium at hand.

Nonuniform plutonium distribution is the most important correction to the Rocky Flats factor. An RBE of 20 (rather than 85) is chosen here so that nonuniformity is not counted twice. The range of nonuniformity in Table 1 (Appendix II) is 10,000 tissue sites of 1 mg each to 10 such sites, giving an exposure factor range of 0.19 to 190 rem/pCi Pu. This range is 370 to 370,000 times the exposure factor cited by Rocky Flats.

**Conclusion**

The plutonium dose received by a resident at the Rocky Flats boundary line is off by the following amount:

$3 \times 10^{-8} + 8 \times 10^{-15} = 4 \times 10^6$  times because of the HEPA reduction factor

3 times because of the breathing rate

37 because of the meteorological reduction factor

Between 370 and  $3.7 \times 10^5$  because of the biological factor

$4 \times 10^6 \times 3 \times 37 \times 370 = 1.6 \times 10^{11}$

$4 \times 10^6 \times 3 \times 37 \times 3.7 \times 10^5 = 1.6 \times 10^{14}$

$1.6 \times 10^{11} \times 7 \times 10^{-13}$  rem/year (Rocky Flats calculation) = 0.1 rem/year

$1.6 \times 10^{14} \times 7 \times 10^{-13}$  rem/year = 100 rem/year

Since the allowable limit for public protection is 0.1 rem per year, the recalculation showing the exposure to be as much as 0.1 to 100 rem/year means that the exposure can easily be 1 to 1,000 times the allowable.

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## APPENDIX L

## Yearly Emission Rate of Plutonium from EB1 (1)

## Plutonium Incinerated per year

(200 tons waste/year) (2000 lbs/ton) (454 g/lb) (100 nCi Pu/g waste) x  
 $(1 \times 10^{-3} \mu\text{Ci/nCi}) = 1.8 \times 10^7 \mu\text{Ci maximum Pu incinerated per year}$

## Emission Rate of Plutonium (per Rockwell)

$(1.8 \times 10^7 \mu\text{Ci Pu/year}) (8 \times 10^{-15}) = 1 \times 10^{-7} \mu\text{Ci Pu/year}$

## 1,000 Hours Plutonium Accumulation (L.G. Estimate)

180 lbs/hr (454 g/lb) (100nCi/g)  $(1 \times 10^{-9} \text{Ci/nCi})$  (1000 hrs) = 8.2Ci Pu

8.2 Ci Pu + 0.0732 Cu Pu/g Pu = 112 g Pu

## Compare 1/3 Blow-out to Rocky Flats Estimate

2.8 Ci +  $(1 \times 10^{-7} \mu\text{Ci Pu/year} \times 1 \times 10^{-6} \text{Ci}/\mu\text{Ci}) = 2.8 \times 10^{13}$

One discharge due to explosion is equal to Rocky Flats estimate of  
 $2.8 \times 10^{13}$  years of discharge

## Quantities of Solvents to Produce Explosive Concentrations (3-5).

Styrene—60 min/hr x 320SCFM x 0.011 (0.70) = 148 cu. ft/hr of styrene  
 needed to form an explosive concentration in 320 SCFM.

(Note: 0.011 = 1.1 %, the lower explosive limit of Styrene. (C.70) is a  
 factor of 70% used to reduce the LEL at 600°C (3).)

Xylene—60 min/hr x 320SCFM x 0.011 (0.70) = 148 cu ft/hr

Toluene—60 min/hr x 320SCFM x 0.013 (0.70) = 175 cu ft/hr

Benzene—60 min/hr x 320SCFM x 0.013 (0.70) = 175 cu ft/hr

Ethyl Alcohol—60 min/hr x 320 SCFM x 0.033 (0.70) = 443.5 cu ft/hr

## Weight Required for Each Material at Lower Explosive Limit (LEL)

Styrene—148 cu ft/hr + 382 cu ft/mol x 104 lbs/mol = 40 lbs/hr

Xylene—148 cu ft/hr + 382 cu ft/mol x 106 lbs/mol = 41 lbs/hr

Toluene—175 cu ft/hr + 382 cu ft/mol x 92 lbs/mol = 42 lbs/hr

Benzene—175 cu ft/hr + 382 cu ft/mol x 78 lbs/mol = 36 lbs/hr

Ethyl Alcohol—443.5 cu ft/hr + 382 cu ft/mol x 46 lbs/mol = 53 lbs/hr

## Breathing Dosage of Plutonium at Property Line

## Air Concentration at Property Line (per Rockwell)

$(150 \text{ lbs waste/hr}) (454 \text{ g/lb}) (100 \text{ nCi Pu/g waste}) (1 \times 10^{-3} \text{ pCi/nCi}) \times$   
 $(8 \times 10^{-15})$  (see Note 1)  $\times (3.5 \times 10^{-5} \text{ g/m}^3)$  (see Note 2)  $\times (60 \text{ min/hr}) (60 \text{ s/min})$   
 $= 5 \times 10^{-13} \text{ pCi/m}^3$  at Plant boundary

Note 1:  $8 \times 10^{-15}$  = HEPA reduction factor, penetration of 5 HEPA filters in  
 series (per Rockwell)—first filter 99.95% eff., next four are 99.8% eff.  
 Penetration =  $5 \times 10^{-4} \times (2 \times 10^{-3})^4 = 5 \times 10^{-4} \times (16 \times 10^{-12}) = 80 \times 10^{-16}$   
 $= 8 \times 10^{-15}$

Note 2:  $3.5 \times 10^{-5} \text{ s/m}^3$  is a factor based on meteorological dilution  
 between stack and property line

## Dose from Plutonium

$(5.3 \times 10^{-13} \text{ pCi/m}^3) (2667 \text{ hrs/year}) (60 \text{ mins/hr}) (60 \text{ s/min})$   
 $\times (2.66 \times 10^2 \text{ m/sec})$  (see Note 3)  $\times (1 \times 10^{-6} \mu\text{Ci/pCi})$   
 $\times (5.1 \times 10^2 \text{ rem}/\mu\text{Ci})$  (see Note 4)  $\times (1 \times 10^6 \text{ ml/m}^3) = 7 \times 10^{-13} \text{ rem/year}$ ,  
 dosage of Plutonium at Plant boundary, per Rockwell.

Note 3:  $2.68 \times 10^2$  ml/sec = 16 liters/min—reputed to be breathing rate of person at Plant boundary

Note 4:  $(5.1 \times 10^2 \text{ rem}/\mu\text{Ci})$  is the factor used by Rockwell to equate biologically significant exposure level to  $\mu\text{Ci}$  of Plutonium in the air

J.G. Estimate of HEPA Filter Penetration

First filter efficiency = 99.5% Next four filters = 95% efficiency

Penetration of five banks of HEPA filters :

$$(5 \times 10^{-3}) (5 \times 10^{-2})^4 = (5 \times 10^{-3}) (625 \times 10^{-8}) = 3.125 \times 10^{-11}$$

$$= 3.125 \times 10^{-8} \text{ round off to } 3 \times 10^{-8}$$

APPENDIX B

Table 1

RBE	rem/pCi Pu					per year
	Whole Body (70 kg)	Uniformly Distributed	Lung (1 kg)			
			Nonuniformly Distrib. in Tissue (10 g tissue)	1,000 sites (1 g tissue)	100 sites (0.1 g tissue)	
1	0.0000014	0.000096	0.0096	0.96	9.6	
10	0.000014	0.00096	0.096	9.6	96	
20	0.000028	0.0019	1.9	19	190	
85	0.00012	0.0082	8.2	82	820	

How Table 1 is Calculated.

Plutonium exposure factors in Table 1 are calculated from the plutonium dose constant expressed in rad per curie (Ci) of plutonium:

$$9.63 \times 10^{10} \text{ rad-g per yr-Ci of Pu,}$$

which is equivalent to

$$9.63 \times 10^7 \text{ rad-kg per yr-Ci of Pu.}$$

This number means that 1 curie of Pu delivers, in 1 year,  $9.63 \times 10^{10}$  (96 billion) rad to 1 gram (g) of tissue, or  $9.63 \times 10^7$  (96 million) rad to 1 kilogram (1,000 g) of tissue. Radiation emissions differ in their damage

to biological material. To reflect these differences, the rad value is multiplied by a factor (RBE) to give rem.

In order to calculate the plutonium exposure factors of Table 1, the dose constant above is divided by the tissue mass containing Pu, and multiplied by the RBE. Since plutonium is nonuniformly distributed, the tissue mass containing plutonium is much smaller than what one would see if plutonium were uniformly distributed throughout the tissue.

Calculation of Dose Constant for Plutonium.

(See section below for definitions and relevant conversion factors.)

$$\begin{aligned} & \{ (3.700 \times 10^{10} \text{ d sec}^{-1}) / \text{Ci} \} \times \{ (3.1536 \times 10^7 \text{ sec/yr}) \} \dots \\ & \dots \times \{ 5.15 \text{ MeV/d of Pu} \} \times \{ (1.602 \times 10^{-8} \text{ erg/MeV}) \} \dots \\ & \dots \times \{ 1 \text{ rad} / (100 \text{ erg/g}) \} = 9.63 \times 10^{10} \text{ rad-g/yr-Ci of Pu} \end{aligned}$$

Definitions and Relevant Conversion Factors for Calculating Dose Constant for Plutonium.

- (micro):  $\mu\text{Ci} = 0.000001 \text{ Ci} = 1 \times 10^{-6} \text{ Ci}$
- (nano):  $\text{nCi} = 1 \times 10^{-9} \text{ Ci}$
- (pico):  $\text{pCi} = 1 \times 10^{-12} \text{ Ci}$
- (femto):  $\text{fCi} = 1 \times 10^{-15} \text{ Ci}$
- (atto):  $\text{aCi} = 1 \times 10^{-18} \text{ Ci}$
- 1 Ci of Radium (Ra) = 1.00 g Ra (definition of a curie (Ci))
- 1 Ci of Pu = 16.1 g Pu (more Pu is needed to make up 1 Ci than Ra since the half-life of Pu (24,360 yr) is much longer than that of Ra (1,600 yr))

1 Ci of any radioactive substance = exactly  $3.7 \times 10^{10}$  disintegrations per second (d sec<sup>-1</sup>)

1 electron volt (eV) =  $1.602 \times 10^{-19}$  joules (J)  
1 erg =  $1 \times 10^{-7}$  J

Thus,

$$1 \text{ eV} = 1.602 \times 10^{-12} \text{ erg}$$

$$1 \text{ MeV} = 1 \times 10^6 \text{ eV} = 1.602 \times 10^{-6} \text{ erg}$$

Energy of most common alpha particle from Pu-239 = 5.15 MeV

1 rad (radiation absorbed dose) = 100 ergs absorbed by 1 g of tissue (100 erg/g)

1 rem (radiation equivalent man) = RBE x rad,  
where RBE = relative biological effect

**HIGH EFFICIENCY PARTICULATE ARRESTORS  
(HEPA FILTERS)**

in the

**NUCLEAR INDUSTRY**

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**DENVER, COLORADO**  
September, 1988

**SUMMARY**

HEPA filters evolved from filter materials developed for gas mask canisters during the second world war. Their extremely high efficiency made them excellent candidates for use in the large-scale filters required for the nuclear industry. The small and large hot DOP tests and the cold DOP test had to be invented to develop the filter materials and to test completed small and large scale filters and filter installations. Great care must be exercised to ensure that personnel and equipment are equal to the exacting requirements of these tests. After installation, filter banks must be tested as frequently as monthly with cold DOP test methods. Inability to test, due to deficiencies in installations, casts grave doubt on the integrity of the filter bank and its reputed efficiency. The cold DOP test is the only test that can be applied to installed HEPA filters. It is not an efficiency test. It is purely a leak test. Once a HEPA filter is installed, there is no test method available for ascertaining its efficiency.

HEPA filters are subject to damage during and after installation. When made of fiberglass materials, electrostatic effects, that can leak off, in actual use, will cause them to test excessively high in efficiency. Before testing, air of high relative humidity must be run through filters made of glass fibers, until the tester is satisfied that any charges have leaked off. HEPA filters are subject to catastrophic failure due to fire and/or explosion. Leakage in filters and filter bank components are an ever-present hazard that is difficult to detect. It reduces the effectiveness of installations to levels below those assumed from laboratory, hot DOP test results. Work that has been done to correlate the penetration of multiple HEPA filter installations by DOP test smokes and plutonium aerosols and to confirm ERDA guidelines for HEPA penetration draws excessively optimistic conclusions. The work described uses ball-milled plutonium to simulate sub-micron smokes probably thermally generated in the field. It tested 25 CFM filters instead of the large, field installations that may total hundreds of thousands of CFM. Aerosol concentrations were  $2 \times 10^5$  to  $1.6 \times 10^6$  times as great as those found in field tests. The exceedingly high concentrations caused plugging and consequent rapidly rising efficiencies. Only three filters in series were tested. As many as six banks in series are now used in practice. Of the three filters in series, the third filter, in one set of tests, gave penetrations that were 60 times as high as the penetration of the first filter. The third filter was the first of the three that was presented with a plutonium aerosol concentration that was in the range of those found in field tests. Its penetration exceeded ERDA guidelines. Alpha recoil effects and filter bank leakage will increase field, filter penetrations to levels that may be well above ERDA guidelines for all stages of filtration after the first one.

## HIGH EFFICIENCY PARTICULATE ARRESTORS (HEPA FILTERS)

### In the NUCLEAR INDUSTRY

Joseph Goldfield, Consulting Engineer

#### Introduction

The High Efficiency Particulate Arrestor (HEPA filter) is widely used in the nuclear and high technology industries. When used in nuclear power and weapons plants, it may be the primary protection of entire communities from the effects of dangerous and even lethal discharges of radioactive materials. Where does the HEPA filter come from? What is it? How is it tested? Can we rely upon it? What are its weaknesses? This paper attempts to answer these questions?

#### Genesis of the HEPA Filter.

The birth of the HEPA filter may be found in the development of protective devices used in chemical warfare. Modern chemical warfare dawned in the first world war at Ypres, Belgium, April 22, 1915. On that infamous day German troops emptied 15,000 - 40 pound tanks of chlorine gas on a 5 km front against British and French colonial troops. 5,000 deaths and 15,000 hospitalized casualties resulted. (1)

To defend against poison gases, gas masks, including canisters that contained various adsorbents, but principally activated charcoal impregnated with chemicals were developed and issued to troops. Activated charcoal is very effective against many organic gases. However, granular beds of activated charcoal are quite useless for filtering small size particulates from air streams. The Germans developed various smokes that were not lethal in themselves, but were very irritating and caused nausea and vomiting in relatively low concentrations. These smokes, passing thru charcoal beds, caused soldiers to remove their masks, making them subject to the lethal effects of the "poison" gases dispersed simultaneously.

Thus, for relatively complete protection, particulate filters had to be developed and installed in gas mask canisters. Because the irritating smokes were effective in extraordinarily low concentrations, the

(1)

efficiency of filters needed was very high--far higher than any commercially available.

After Pearl Harbor, when the United States entered the second world war, the particulate filter that was in use, consisted of a relatively low pressure drop cellulose paper impregnated with carbon black particles. The carbon black was generated by burning acetylene in an oxygen deficient atmosphere. The resulting gases, rich in small carbon particles were sucked thru the base, porous, cellulose paper. The impregnated paper was wrapped on a cylindrical case into which activated charcoal had been charged. Six or seven layers of the paper were wrapped around the canister. Air breathed thru a face piece was drawn radially thru the canister and successively purified of smokes and gases.

The filter described above was quite effective. Nevertheless, shortly before United States entry into World War II, the discovery had been made that the gas mask filter--paper impregnated with carbon--had a fatal flaw. If liquid particulates such as oil smokes, used for screening purposes, were drawn through the filter, it rapidly lost efficiency. This defect caused a frantic effort to develop a different filter material.

Emulating a German gas mask canister, a pleated filter was developed that used a single layer of material. The filter material that resulted was a paper about 1/16 inch thick, made of cellulose fibers, cotton or wood, through which blue asbestos fibers had been dispersed. This material was exceedingly efficient. At the low pressure drop required to limit interference with breathing efforts, poison smokes could be removed with the required efficiencies to render them relatively innocuous. This filter was ready in time so that large numbers of canisters could be supplied to troops involved in the Normandy Invasion--the second front of World War II.

Towards the end of World War II, the Atomic Energy Commission developed a requirement for a highly efficient, large scale, particulate filter for use in the emerging atomic industry. Very quickly, the Chemical Warfare Service developed a large scale design and a relatively large number of filters were manufactured and shipped. The design utilized the high-efficiency, asbestos-bearing paper manufactured for gas mask canisters. A roll of paper, about two feet wide, was mounted on a pleating

(2)

machine that folded the paper into pleats that were six inches wide. Spacers, about 3/8 inches thick were inserted into each pleat to separate the paper when air was sucked thru. Assemblies, approximately 24 inches long, consisting of the pleated paper and spacers, were slipped into wooden frames that were 24 inches square. A bituminous mastic was poured into the space between the filter material assembly and the walls of the wooden frame. This was born the HEPA filter.

The papers now used are generally made of glass microfibers. The filter frame dimensions may vary. The depth of the filter is commonly 1 1/2 inches instead of six. The mastic is often a polyurethane foam. Spacers are corrugated instead of flat. Nevertheless, in essential concept the filter remains as it was originally conceived well over 40 years ago.

Figure 1 shows a sketch of the HEPA filter.

(NOTE--Insert sketch or picture of HEPA filter)

FIGURE 1  
HEPA FILTER

The purpose of this paper is not to depreciate the efficiency nor the utility of the HEPA filter but to call attention to some of its weaknesses and the remarkable and complicated efforts that are required to insure the safety of the communities that are protected from dangerous and potentially lethal, radioactive discharges by the walls of fragile, paper assemblies--not the concrete and steel enclosures normally associated in the public mind with containment of atomic energy plants and manufacturing operations.

#### Testing of HEPA Filters

The development of a single layer of filter material that was equal in efficiency to 6 or 7 wraps of the less efficient, carbon-impregnated paper, created a requirement for a highly sensitive, reproducible, sophisticated test method for use both in the development of the filter material and for

(3)

production testing of gas mask canisters. The hot DOP test was the result.

#### Hot DOP Test

Diethylphtalate (DOP) was chosen as the material for generating smokes because of its high refractive index and because of its supposed non-toxicity. The latter quality is now in doubt because in recent years DOP has been accused of mutagenic and carcinogenic properties. The high refractive index was important because the intensity of the scattered light in light scattering photometers is increased with increasing refractive indices.

Figure II shows a sketch of the DOP test.

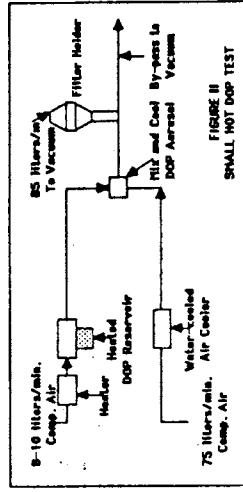


FIGURE II  
SMALL HOT DOP TEST

A small reservoir of DOP is heated to a relatively high temperature (about 390°F). A relatively small stream of heated air (at about 365°F) is blown across the surface of the reservoir. A larger volume of air, held at a constant temperature of about 72°F, is mixed with the hot air stream and DOP vapor. The cooled mixture causes the DOP to condense as a very finely divided smoke. The smoke consists of a relatively uniform size of liquid DOP particles that are round in shape. The smoke concentration can be raised by raising DOP temperature and the temperature of the hot, vaporizing air. The particle size can be controlled by reducing or raising the temperature of the cooling air stream.

The particle size of the resultant smoke was thought to be 0.3 micrometers in diameter for a great many years. Doubt has been thrown on that particle size in recent years. One article (2) claims that the particle

(4)



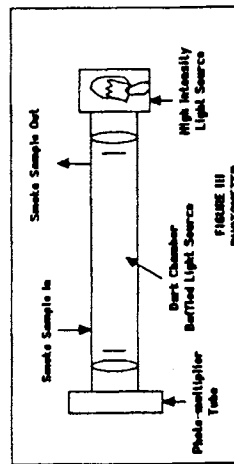
size of the hot DOP smoke is 0.19 micrometers. Whatever the true particle size, it is believed that the particle size distribution lies in quite narrow limits.

The particle size of the hot DOP test was chosen as the standard because it was believed to be the optimum, penetrating particle size. There is no question that deviating from the normally produced particle size causes penetration readings to be reduced.

The smoke concentration in the hot DOP test is about 100 micrograms per liter. This relatively high concentration increases the sensitivity of the test method, permitting very low penetrations to be measured.

The penetration of a filter is measured with a forward-light scattering photometer. The photometer is constructed so that a high intensity light source is focused into the interior of an optically dark cylinder. The direct rays of the light are baffled so that a phototube, mounted on the opposite end of the tube cannot see the baffled light rays. When a sample of the DOP smoke, that is being generated, is drawn into the optically dark cylinder, the light scattered by the smoke particles, fills the cylinder and sends a beam of scattered light rays to the phototube. The signal from the phototube is amplified by electrical circuits and read by means of electrical meters. The meter is set to read 100% when a sample of the unfiltered smoke is drawn into the photometer. A sample of smoke after the filter is then drawn into the instrument. The amplified signal gives a reading of the percentage of scattered light compared to the signal from the unfiltered smoke. That percentage is the penetration of the filter being tested.  $100 - \text{penetration} = \text{filter efficiency}$ .

Figure III shows a rough sketch of the photometer.



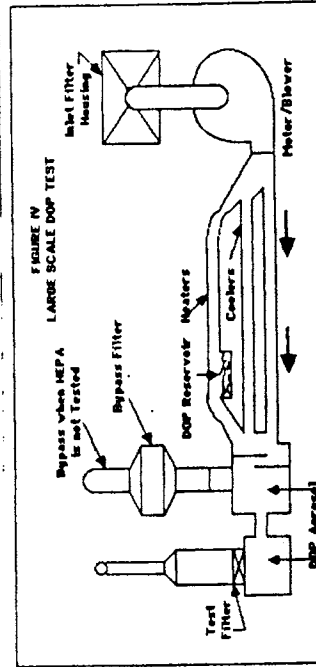
(3)

Whatever drawbacks there are to this test it has been in constant use for over 45 years. There is an enormous accumulation of data. Development of an alternative test method would face a great uphill battle. For example, the particle size being generated has been called into question. Nevertheless, by maintaining constant geometric configurations and constant operating conditions, the smoke particle size can be duplicated quite well. Any other test method that relied on instrument readings to duplicate the DOP particle size would immediately be subject to question.

Using the laboratory scale DOP tester, filter materials were developed that could filter DOP smoke with efficiencies of 99.995% (penetration of 0.005%). These materials were later incorporated into HEPA filters.

#### Large Scale DOP Test

The laboratory DOP test described above had a flow capacity of 85 liters per minute or about 3 cubic feet per minute. Figure IV shows a test that has a capacity of 1,000 CFM and can test full size HEPA filters. (3)  
The apparatus in the sketch is 40 feet long. Room air is drawn through an inlet filter housing that cleans the air with HEPA filters. A motor-blower blows 1,200 CFM of the air through three alternate paths. 85 CFM is heated to 365°F in the topmost duct of the figure. The heated air passes over a reservoir of DOP that is held at 390°F. The air mixes with and entrains DOP vapor.



(6)

265 CFM of the original air stream passes through the center duct where cooling coils hold the temperature of the air constant at 72°F. The air from the hot, topmost duct and the cooled air of the center duct mix and the quenched mixture causes the DOP vapor to condense to a rather uniform particulate reputed to be 0.3 micrometers in size. The remainder of the 1,200 CFM--850 CFM, flows through the lowest of the three ducts and mixes with the particulate laden air of the mixture previously described. The resultant diluted aerosol is exhausted through a filter housing when no test is in progress. 1,000 CFM of the mixture can be directed to a HEPA filter to be tested. 200 CFM can be exhausted to the alternate path while a test is in progress. This arrangement permits equilibrium conditions to be established and maintained in the apparatus at all times.

For use in the nuclear industry, each filter must be tested on the described system. Its efficiency must be greater than 99.97% and its pressure drop must be less than 1 inch of water at 1,000 CFM. The filter efficiency is determined by means of a forward-light scattering photometer that is similar to the one described for the small scale test.

As mentioned previously, filter materials with an efficiency of 99.995% could be made over forty years ago. One of the references (2) cites filter materials available with an efficiency of 99.997%. Why does a HEPA filter only require an efficiency of 99.97%? In order to avoid the rejection of unreasonable numbers of filters, a ten-fold increase in penetration must be accepted because of manufacturing difficulties.

#### Testing by Cold DOP

The "hot" DOP tests described are essentially laboratory tests. Only the efficiency results obtained by their use can be used to designate the efficiency of HEPA filters. As we will see later, those efficiency results can only be used for relative purposes to compare HEPA filters. The efficiency numbers cannot be applied to the filtration of aerosols in other systems. The "cold" DOP test described in this section is essentially a leak test. Although the results of the use of this test may use numbers similar to those obtained from hot DOP tests, they must not be confused with filter efficiencies. *There is no standard procedure for determining the efficiency of HEPA filters using polydispersed DOP or any other cold aerosol used for leak testing.*

(7)

The cold DOP test was developed as a much simpler test than the hot DOP test and is applied both on the manufacturers' premises and in the field as a leak test. The cold DOP aerosol is generated by means of Leak nozzles. One nozzle per 500 CFM produces a concentration of 10-20 µg/liter. The Leak nozzle atomizes the DOP by means of compressed air at 20-25 psig. The resulting aerosol has quite a different particle size distribution than that obtained in hot DOP generators. The following distribution is typical:

- 99% less than 3.0 micrometers
- 95% less than 1.5 micrometers
- 92% less than 1.0 micrometers
- 50% less than 0.72 micrometers
- 25% less than 0.45 micrometers
- 10% less than 0.35 micrometers (3)

The resultant aerosol is blown through a single filter or a bank of filters in the field. Whether the smoke is blown through one filter or many, great care must be taken to uniformly disperse the smoke in the air stream. The uniform dispersal of the smoke is key to obtaining reliable results. If a bank of filters are installed so that uniform smoke dispersal ahead of and after the HEPA filters cannot be maintained then the leak tests are not valid.

The leak test is performed with a forward-light scattering photometer such as the ones used in the hot DOP test. About one CFM is drawn through a probe and into the photometer casing. The unfiltered smoke sample is drawn into the photometer and used to set the 100% reading. The probe is used to scan the clean side of the HEPA filter--searching for leaks that would show up as surges in the photometer reading. Especial care would be used to sample at the joints of the filter casing and all around the mastic seal at the periphery of the filter assembly. Searching for leaks is a long, drawn out procedure. Even the entire filter surface must be probed, searching for damage that may have resulted from shipping and handling.

#### Leak-Flow Testing

Another method of searching for leaks uses two flow testing. In this method a completed HEPA filter is tested at rated flow and at 20% of rated flow. At 20% of rated flow the proportion of flow through a leak increases with respect to the total. The penetration through the filter material decreases with reduced velocity further increasing the proportion of the total penetration that is due to leaks.

(8)

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The velocity of air flow through HEPA filter material is about 5 to 10 feet per minute, depending on the number of filter material pleats in the assembled filter. At this velocity the flow is in the laminar region where the pressure drop across the filter material varies directly with the flow. Thus, at 20% of rated flow the pressure drop across the filter will fall by a factor of five.

In the range of 1 inch pressure drop across the filter and across pinhole leaks, the flow through the pinholes is in the turbulent region and varies as the square root of the pressure drop. With a five-fold reduction in pressure drop, the flow through pinholes decreases by  $(5)^{1/2}$  or 2.24. Assuming the flow through a HEPA filter is 1,000 CFM at rated conditions, it will be 200 CFM at 20% of rated flow. If a leak through a pinhole passes 1 CFM at 1 inch of pressure drop (rated condition), it will pass 0.45 CFM at 0.2 inches of water. The proportion of leakage to total flow will increase from 1/1,000 to 0.45/200 or 2.2 fold.

In addition the penetration of the filter material will fall with reduced velocity. If it is assumed that at 20% of rated flow the penetration falls by a factor of three, then the effect of the pinhole leak with respect to filter material penetration will increase by a factor of 6.6. In any event it is much easier to discriminate between filters with leaks at reduced flow than at rated flow. Filters with significant amounts of leakage may actually show higher penetrations at reduced flows. Any filter that has a tendency to not show significant reductions in penetration at reduced flow will have pinhole leaks.

#### Errors of Testing

The tests described above will only produce valid results when the tests are run with equipment that is in good condition and by personnel that are expert in their use. Results obtained by personnel that are inadequately trained using equipment that is in poor condition will yield results that are not correct. Even under the best of conditions, a constant program of checking results, both within individual laboratories and amongst laboratories is required to ferret out errors and insure the validity of data that is developed. The discussion below deals with only some of the errors that can creep into the testing of HEPA filters.

#### Hot DOP

The control of particle size is essential to obtaining valid results from

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the hot DOP test. Instrumentation for determining particle size must be available and used frequently enough so that the operator is sure that the particle size has not strayed from the distribution required. Adjustments to the temperatures of the hot DOP, the vaporizing air or the cooling air quantity or temperature may be needed to keep on track. Special care will have to be taken if different methods of measuring particle size are introduced. The results obtained by new particle size measuring techniques will have to be carefully correlated with the old methods before they are put into use.

All laboratories that use either small laboratory, hot DOP or large systems for testing full-scale filters must be equipped with flow measuring equipment for checking the calibration of flow measuring instruments. Where gas meters are used, meter provers that use water displacement techniques (gasometers) to insure calibration of the instruments must be available. Pitot tubes must be used for calibrating larger flows. The personnel dealing with the test installations must be expert in correcting for changing conditions of temperature, atmospheric pressure, and relative humidity, insofar as they affect readings of flow measuring instrumentation. Errors in flow measurement will change the particle size of DOP smokes and the velocity of air through the filters giving false readings for the filter pressure drop and penetration.

Temperature measuring instruments and controls must be carefully calibrated before use and periodically checked thereafter to insure that they are reading correctly. Even sophisticated controllers like thermocouple activated controllers can be in error by significant percentages and must be constantly checked against calibrated, mercury-in-glass thermometers and laboratory thermocouple instruments. Temperature readings that are incorrect will affect the DOP smoke particle size, the concentration of the DOP, and the volume of gases read by flow instruments.

The forward-light scattering photometer used in both the hot and cold DOP test is an especially tricky instrument to use correctly. Only a knowledgeable and experienced operator can tell when he is obtaining valid results.

The concentration of DOP in the test system will affect readings. The effect will be particularly significant if the concentration of DOP in the system is allowed to change after the 100% point has been set on the photometer. If the concentration falls after that time, penetration

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readings will be low possibly passing defective filter materials and filters. Conversely, if the concentration rises, penetration readings will rise, causing acceptable filters to be failed. Only frequent checking of the 100% setting can avoid these errors.

Filters made of glass fibers are prone to build-up of electrostatic charges. These charges can significantly reduce the penetration results obtained during test. In service the electrostatic charge can leak off, especially in the presence of high relative humidity, and permit increased and possibly excessive penetration of dangerous materials. Special efforts must be made when testing fiber glass filters to ensure that electrostatic charges are not giving false, high efficiency readings. High humidity air should be drawn through glass fiber filters until the test operator is satisfied that electrostatic charges have leaked off. Electrostatic effects can be quite large. For example, a filter used in an Italian gas mask canister consisted of a resin carded into wool. On initial test this filter tested very high on the DOP test. After the electrostatic charge leaked off it tested only about 50% efficient, an almost incredible drop.

#### Cold DOP

The Laskin nozzles, used for generating the DOP aerosol must be in good condition. The holes for the compressed air and for the DOP must be correctly sized. One nozzle is required for each 500CFM increment in the system to be tested. If these precautions are not followed, the particle size distribution or the system concentration will be off from what is required to get reproducible results.

The smoke before and after the filter must be mixed well enough so that uniformity is ensured. Results of the test will not be valid if such is not the case. Uniformity ahead of a filter bank or of a filter requires adequate space for mixing the smoke and the air stream. If the installation is built with too little space between prefilters and filter banks or between multiple filter banks, no valid tests can be made. A piping system may be required to introduce the DOP smoke at various points in the system. The photometer can be used to determine the uniformity of the test smoke ahead of the filter or filter bank. Considerable ingenuity is required to solve these problems when dealing with contaminated systems where it would be inadvisable for men to enter.

If readings that are representative are to be taken after filters and filter banks, then space and/or baffles are required to be sure the air stream is

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mixed with the penetrating smoke. In contaminated systems, where men can't enter, or where there is insufficient space, adequate testing cannot be performed. Methods of probing the downstream side of the filter and the filter bank will have to be provided to allow adequate leak testing.

The forward-light scattering photometer is used for the cold DOP test in a similar matter to that for the hot DOP test. The same precautions and possible errors can result as were noted in the description of errors of the hot DOP test.

As mentioned previously, once filters are installed in the field, whether individually or in filter banks, only cold DOP tests can be performed. These tests cannot be regarded as efficiency tests--only leak tests.

Burstead and Fuller<sup>(5)</sup> say "In-place tests of HEPA filters are made with a polydispersed aerosol of dioctyl phthalate (DOP) droplets having a light-scattering mean diameter of 0.7µ (as opposed to quality assurance tests of these filters, which are made with a monodispersed DOP aerosol having a mean particle size of 0.3µ). . . . Although test results are expressed as percent efficiency, all of the in-place tests are basically leak tests. When the tests are made of components of known efficiency, the numbers give an indication of system efficiency."

#### Emergency of Testing

Even after installation and initial testing no relaxation of vigilance is justified. A basic principle of exhaust air-cleaning systems is that no credit can be taken for safety if the HEPA filters and absorbers are not tested regularly. (5) It is not sufficient to test only when changes are made. Some systems, where environment is especially severe, may require monthly testing to ensure the integrity of the installation. It must be remembered that, after installation, only leak tests are possible and then only if the installation has been designed with that in mind. No efficiency tests are possible for installed HEPA filters.

#### Filter and Installation Leakage

##### Goetzl

The most important factor that threatens the integrity of any HEPA filter

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Installation is leakage. Leakage can make a mockery of claimed efficiencies. A leak of 50 CFM out of a total of 5,000 CFM (a bank of five filters) will increase the filter penetration by 1% of the total particulate, changing a claimed filter efficiency of 99.95% to 99%, an increase of twenty-fold in penetration. Similarly a leak of 500 CFM will reduce the filter efficiency to 90%, an increase of particulate penetration of two hundred-fold over the stated 99.95%. Leaks of that order of magnitude cannot be detected by simply monitoring the pressure drop across the filters. A 1% leak will change filter bank pressure drop by 1%—i.e. a filter pressure drop of 2 inches of water will fall by 0.02 inches of water. A 10% leak will cause that same filter to fall in pressure drop by only 0.2 inches of water.

A leak of 50 CFM will require a hole of about 1.5 square inches—one or several openings providing that leakage area.

Leakage is such an everpresent danger and so important that much of the ANSI/ASME standard<sup>(6)</sup> is devoted to finding and eliminating it from nuclear air cleaning installations. Burstead and Fuller<sup>(5)</sup> say "Initial in-place tests of 50 HEPA filter banks at one AEC installation revealed 31 banks (62%) that would not meet the specified efficiency of 99.95%." (Significant leakage was indicated.)

With leakage so important and so prevalent in the nuclear industry, additional thought and effort should be devoted to finding alternative methods to those now used for reducing leakage. For example, the present configuration of HEPA filter may encompass 50-100 running feet of filter material in the pleats that are inserted into the filter frame. That means that double that length (counting both sides) of filter material edge, must be sealed by the mastic used, to the filter frame. There are other possible filter configurations that will require much less edge sealing.

The edge of the filter frame is flat. It may be one inch wide. If the filter frame edge were tapered to 3/8 inches, it would press into the gasket seals with almost three times the pressure as at present.

Systems can be devised to minimize the effect of leakage at the sealing point of the mastic seals and between the filter edge and the filter frame.

#### Alpha Recoil Effect

McDowell, et al<sup>(7)</sup>, discuss a phenomenon that has been inadequately

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Investigated Materials (such as plutonium) that emit alpha particles do not rest quietly on the surface of HEPA filters after they are collected. Instead movement of particles, caused by the recoil produced by the emission of the alpha particles, will cause penetration of the filters with time. The recoil is especially important when analyzing penetrations of multiple filter installations. For example, decontamination factors (DF—the reciprocal of the filter penetration; the penetration of a HEPA filter being 0.03% or 0.0003, the reciprocal or DF is 3333) of 2-10 have been found across the third and fourth filters in a 3-4 filter system instead of the  $3 \times 10^3$  decontamination factor found across the first filter, when observations are made over short periods of time.<sup>(7)</sup>

The only way to deal with the alpha recoil effect is to replace filters when they have retained quantities of plutonium or other radioactive, alpha-emitting materials sufficient to increase penetration over time to undesirable levels.

The added effects of alpha recoil raise into question the overall penetration predicted for multiple HEPA filter installations.

#### Filter Paper Leakage

The greatest danger of high HEPA filter penetration may be due to electrostatic effects. If the filter materials and assembled filters pass penetration tests due to electrostatic effects, then the loss of the electrostatic charge will cause unacceptable levels of filter penetration. Since there is no way of detecting such deterioration of efficiency after the filter is installed in the field, great care must be exercised in the test of filter materials and of assembled filters by means of the hot DOP test to insure that electrostatic charges are not affecting the results. Discharging electrostatic effects with high humidity air has been discussed.

Cracking of filter papers at folds may prove to be a source of filter leakage. Great care must be exercised to insure that papers are manufactured that are soft and pliable—not brittle.

Damage, during packaging, shipment, unpacking, or installation, can cause holes to be poked through the filter material.

#### Leakage of Filter Assembly

The leakage of the assembled filter is proven by the fact, as recorded

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before, that the paper, of which the assembled filter is made, has lower penetration, by a factor of 10 (0.005 to 0.003% compared to 0.05 to 0.03%), than the assembled filter.

The difficulty of sealing the many running feet of filter material edge to the filter casing has already been discussed.

The corners of the filter frame are a weak point of the assembly design. Leakage can occur at the corners where the sides of the frame may be joined.

Distortion of the filter, due to stresses introduced in shipment or more probably when clamping the filter to the filter mounting frame, can cause leaks to develop. Temperature changes can set up similar stresses and cause filter assembly leakage.

Installing filters so that spacers are horizontal will cause sagging and failure of the filter.

Defects or damage to the edge of the filter frame that seals to the steel mounting frames will cause leakage.

#### Filter Mounting Frames

Filter mounting frames must be designed so that they are rigid, can take the forces required due to air flow and filter clamping bolts with minimum deflection. They must have a minimum of welded joints. Each welded joint introduces a chance for leakage and a rough surface that can cause a leak when the filter is installed.

Leakage between the walls of the air flow plenum and the filter mounting frame can easily develop. If the plenum is made of concrete, eliminating leakage is especially difficult. Cracking of concrete would cause a continuing concern with the integrity of the filter assembly.

Even where the air plenum is made of steel, welding of the filter mounting frames to the walls of the plenum is an area where leaks can easily appear due to improper welds, or breaks in the continuity of the welds. Only after the most careful testing can unacceptable leakage be ruled out.

It is interesting to note that the ANSI/ASHRAE standard (6) regards 0.1% of the system design air flow as acceptable leakage (see 7.5.2, 9). That

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means that the maximum efficiency of an acceptable filter bank must be assumed to be 99.9%. Later we will see that ERDA assumes an efficiency of 99.95% for a testable stage of HEPA filtration. How can it be higher than 99.87%--0.1% subtracted for frame leakage and 0.03% subtracted for acceptable penetration of HEPA filters?

#### Mounting Filter Frame on Filter Mounting Frame

Some of the sources of leakage when mounting filters have already been covered. Nevertheless, it would be well to stress the great care that must be taken when bolting filters to the mounting frame. As much as 80% compression of the rubber gasket between the filter mounting frame and the filter is needed to effect a satisfactory seal. That compression requires a loading of 20 psi on the gasket or about 1400 lbs. loading for the entire 24" x 24" filter. The loading is caused by tightening the bolts and lugs (normally about eight per filter). As mentioned previously, distortion of the filter must be carefully watched. Corrosion of the tightening bolts are a continuing hazard. Relaxation of bolt pressure due to temperature changes is an ongoing possibility.

#### Cast/Concrete Filter Failure

Normally it is thought that radioactive processes are fully contained by walls of steel and concrete. Frequently that is true. However, all radioactive processes that have gas emissions have chinks in the armor surrounding the process. Those chinks take the form of banks of HEPA filters. The HEPA filter material is a relatively weak paper. An assembled filter will fail at pressure differentials of 10 inches of water gauge or 50 lbs/sq ft. Explosions can build up pressures of 50 psi or 144 times as great.

The mastics, gaskets, frames and filter materials have temperature limitations. Sustained temperatures, exceeding the temperature limitations of the HEPA filter materials can cause massive failures.

Wetting the filters will cause pressure differentials to develop that exceed the capabilities of the filter and it will fail.

Fires and explosions will cause filters to fail with possibly very serious consequences. On September 11, 1957 a fire and explosion, at the Rocky

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Flats plant in Colorado damaged or destroyed all of the HEPA filters in one of the prefiltering systems and in the main filter plenum which contained about 620 HEPA filters. (8) The event was caused by spontaneous combustion in plutonium "skullis" (casting residues) from 10 PPH on September 11 till dawn black smoke billowed from the stack of the exhaust air system. For an added six days no measurement is available to estimate the discharge of dangerous, radioactive plutonium, due to electrical failures associated with the test equipment. On September 19, 1957, 8 days following the accident, average readings of radioactivity taken for the day were 16,000 times higher than allowable.

It is estimated that 14 to 20 kilograms of plutonium burned in the fire. In addition, plutonium that had accumulated on the banks of prefilters and on the 620 main plenum filters (which had not been changed for four years) was emitted to the outside atmosphere. (9) The main plenum filters still had plutonium deposits from catastrophic events that occurred in July 1954, September, 1955, and June 1957. (6) No estimates are available of the quantity of plutonium retained on the main plenum filters. About 1.5 kilograms of plutonium were estimated to have accumulated on the prefilters. Several kilograms of plutonium may have accumulated on the main filter.

The seriousness of this event may be judged from the fact that 1 µg (one one millionth of a gram) of plutonium can be a fatal dose. One kilogram is one billion µg. At least 20 kilograms of plutonium were emitted to the surrounding community.

#### Multiple HEPA Filters Against Plutonium Aerosols

Gonzales, et al<sup>(4)</sup> made an effort to correlate HEPA filter efficiency, when filtering plutonium smokes, with hot DOP test results and to determine the efficiency of three HEPA filters in series. To the author's knowledge it is the only such attempt that has been made.

The Energy Research and Development Administration (ERDA) had assumed penetrations of 0.0005 for stages of HEPA filters that could be tested and 0.002 for HEPA filters in testable stages. One of the purposes of the investigation described in that article was to confirm these penetrations when filtering plutonium aerosols.

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The concentration and particle size of plutonium aerosols was determined for five operations that generate such aerosols. The concentration in the five systems ranged from an average of  $2.0 \times 10^2$  to  $1.5 \times 10^5$  dis/s-m<sup>3</sup> (disintegrations per second per cubic meter). The particle size ranged from an aramid (activity mean aerodynamic diameter) of 4.1 to 0.5 µm. The lowest particle size coincides with the highest concentration.

For various reasons the decision was made to reproduce the effluents in the laboratory instead of testing in the field. Whatever the validity of the reasons for this conclusion, duplicating field smoke characteristics in the laboratory is fraught with difficulties and errors.

Two of the reasons given are as follows:

1. The possibility of obtaining adequate information by means of a field test program was discarded because existing multiple-HEPA filter systems handling large quantities of plutonium did not permit testing of each individual stage. (4) If so, doubt is cast on the claimed efficiencies of existing HEPA filter installations. (5)

2. Field testing could not distinguish between plutonium aerosol penetration through filter media and penetration around improperly installed filters. (4) Leakage around filters is so prevalent that it could not be ruled out in any field test.

#### Concentration Problems

In order to obtain readings after two and three HEPA filters in series, concentrations of plutonium particles of  $3.3 \times 10^{10}$  dis/s-m<sup>3</sup> were generated in the test equipment. They were  $2 \times 10^5$  to  $1.6 \times 10^6$  (5 to 8 orders of magnitude) greater than the concentrations measured in the field. Such deviations from normal concentrations introduce doubt about the results. Difficulties were caused by such high concentrations. Sampling times before the first HEPA filter could only be 0.5 or 1.0 minute while sampling times after the second HEPA filter were up to 2 hours. No information on the sampling times after the third HEPA filter is given. However, it had to be much longer. Such widely varying conditions of test raise questions about the uniformity of test conditions and about the reliability of concentration and penetration checks during a test.

First stage HEPA filters could only be used for one test. The reason is not

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their penetration would be  $7400 \times 10^{-6}$  which also exceeds the ERDA guideline of  $2000 \times 10^{-6}$ ; it must be recalled that these penetrations do not account for leakage effects.

#### Leakage Effects

In order to minimize the effects of leakage, very small HEPA filters were used in these experiments<sup>(4)</sup>. A normal filter size used in systems is 24" x 24" and has a capacity of 1,000 CFM (cubic feet per minute). The filters used in these experiments had a capacity of only 25 CFM. Their size is not given. Great care was exercised to ensure that filter leakage was reduced to a minimum or eliminated.

The summary qualifies, "However, as this study was done under ideal conditions to ensure that only aerosol penetration (not leakage around the filter) was monitored, proper installation of quality-control-tested HEPA filters is of prime importance to achieve the decontamination factors determined here." In line with this conclusion it is fair to ask--what leakage criteria should be allowed for multiple filter installations that have hundreds of thousands of CFM capacity instead of 25 CFM?

#### Particle Size Effects

The aerosol, generated for the tests described in the report under discussion, was produced by a nebulizer into which high concentrations of milled plutonium oxide particles in water suspension was charged. We have already discussed some of the reservations about conclusions produced by the enormous discrepancy between concentrations measured in field installations that generate plutonium aerosols and those that had to be generated in the laboratory test apparatus. The particle size and shape of the plutonium particles used in these experiments must also be questioned.

The particles of plutonium oxide were milled, both in dry ball milling systems and in a wet, centrifugal, ball mill. Great difficulty was experienced in achieving the particle size distribution found in a recovery facility. In fact, the lower end of the particle size spectrum found in that installation was never quite duplicated. A recovery facility had a submicron aerosol of plutonium that was 0.3-0.5  $\mu$ m amad (activity median aerodynamic diameter). Aerosols as small as 0.1  $\mu$ m amad were produced

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discussed but the inference is that plugging of the first stage HEPA filter must have caused problems. What was the buildup of pressure drop with time? Such rapid plugging certainly increased the efficiency of the first stage filter rapidly. This constantly changing efficiency cast doubt not only on the readings of the first stage filter but of the two subsequent stages as well.

There is a great deal of discussion of the effect of particle size on efficiency but none at all about the effect of concentration on filter efficiency. It may be that the effects attributed to particle size are more likely due to enormous deviations from ranges of concentration found in the field. In any event much experimental work remains to be done to prove that concentrations, many orders of magnitude greater than those found in the field have no effect on HEPA efficiency.

The concentrations were so high that, assuming a DF (decontamination factor) of  $2 \times 10^3$  the concentration after the first HEPA filter was 50 times higher than the highest concentration measured in the field. Isn't it possible that concentration effects cause the filters to have higher efficiency? According to data developed in this article<sup>(4)</sup>, the penetration of the second stage HEPA filter is 2 to 3 times as great as the penetration of the first stage HEPA filter. The penetration of the third stage HEPA filter is 8 to 9 times that of HEPA 1. Conclusions about the efficiency of three HEPA filters in series is based on the recorded efficiencies of each of the stages as measured.

If concentration is the effect causing higher efficiencies for the first two stages then those results must be eliminated because the first HEPA filter that is in the concentration range found in the field is the third stage filter. The third stage filter is one order of magnitude lower in efficiency than the first stage filter. Indeed, in one set of tests (one-half normal flow) the third stage filter shows a penetration that is over 60 times as high as that of the first stage filter.

If it is assumed that the penetration result of the third stage filter applies to the first stage filter in an actual case, due to the concentration effects, ERDA guidelines would be exceeded. The penetration of the third stage filter (in the one-half normal flow test) was  $740 \times 10^{-6}$ . That result would exceed the ERDA guideline of  $500 \times 10^{-6}$  for the first stage filter. If the second and third stages fell off by an order of magnitude then

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by the recovery facility. The smallest particle size aerosol generated in the laboratory had a range of 0.22-0.66µm amad.

Particle size distribution was determined by means of eight-stage Andersen impactors. No work is described that shows that plutonium-oxide smokes show similar filtration properties when filtered by HEPA filters independently of how they are generated. For example, are smokes generated by ball-milled materials as penetrating as smokes produced by thermal methods, as is probably the case for plutonium recovery operations? Milled particles are probably angular and irregularly shaped. Thermally generated particles may be spherical. It is quite possible that both will behave differently in both the Andersen sampler and in HEPA filters. It is questionable that only the particle size distribution determined by an Andersen sampler is important in studying the penetration of HEPA filters by plutonium oxide aerosols.

Studies to determine the most penetrating particle size (MPPS) produce some interesting results. At this point it must be explained that in order to reduce anomalies in observed plutonium penetration data of HEPA filters, the HEPA filters were separated into two categories—high penetration on the DOP test and low penetration filters. The low penetration filters had results of 20 to 150 x 10<sup>-6</sup> by 0.3 µm DOP test.

The high penetration filters had penetrations of 151 to 300 x 10<sup>-6</sup> by 0.3 µm DOP test. Table III of the article (4) shows no measurable penetration of the second, low DOP penetration HEPA filter (in a set of three in series), for particle sizes between 2.1 and >11.0 µm. Similarly, Table V shows no measurable penetration of the second, low DOP penetration HEPA filter, for particle sizes between 1.5 and >5.4 µm. Table V shows relatively high penetration results for the second, higher penetration HEPA filter, in the size range from 1.5 to >5.4 µm. Isn't it logical to ask the question as to whether filter leakage is producing such results?

If filter leakage is influencing results, then the surprising conclusion that 0.44-0.96 µm particle size range is the most penetrating one is subject to question. Leaks would allow much larger particles than can be readily filtered to pass through the HEPA units. It would cause the SPP to be pushed to larger size ranges.

In at least two instances test methods have been changed so as to obtain readings within range of the test methods. Two different instruments

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were used to measure the radiation found on the samples after the first HEPA filter as opposed to the instrument used to test the samples taken after the second and third HEPA filter. Changing test methods always introduces the concern as to whether the two produce comparable results.

Similarly the sample flow for the Andersen sampler was changed from 0.47 x 10<sup>-3</sup> m<sup>3</sup>/s to 1.42 x 10<sup>-3</sup> m<sup>3</sup>/s—three times as much—in order to read smaller particle sizes. The following table shows penetrations of first stage HEPA filters that were in a low range of DOP penetrations (20-150 x 10<sup>-6</sup>) compared to first stage HEPA filters that were in a high range of DOP penetrations (151-300 x 10<sup>-6</sup>) where the Andersen sampler flow was 0.47 x 10<sup>-3</sup> m<sup>3</sup>/s and where the Andersen sampler flow rate was 1.42 x 10<sup>-3</sup> m<sup>3</sup>/s.

Andersen Sampler Flow 0.47 x 10 <sup>-3</sup> m <sup>3</sup> /s				Andersen Sampler Flow 1.42 x 10 <sup>-3</sup> m <sup>3</sup> /s			
Part. Size µm	Mean Pen. x 10 <sup>-6</sup>		Ratio High/Low	Part. Size µm	Mean Pen. x 10 <sup>-6</sup>		Ratio High/Low
	Low DOP	High DOP			Low DOP	High DOP	
>11.0	2.1	3.0	1.4	>5.4	0.44	13	29.5
7-11	1.7	1.9	1.1	3.4-5.4	0.36	13	36.1
4.7-7	1.0	1.7	1.7	2.3-3.4	0.23	14	60.9
3.3-4.7	1.2	1.5	1.3	1.5-2.3	0.20	30	150
2.1-3.3	1.8	3.7	2.0	0.96-1.5	0.74	39	52.7
1.1-2.1	6.8	11	1.6	0.44-0.96	5.8	64	11.0
0.65-1.1	20	27	1.4	0.22-0.44	2.8	71	25.4
0.43-0.65	28	26	0.9	0.12-0.22	2.7	54	20
0.43	18	13	0.8	<0.12	1.0	36	46.8
Average Ratio			1.4				

Comparing ratios of penetrations captured on each stage of the Andersen sampler for the high versus the low DOP penetration filters, a resultant, average ratio of 1.4 is obtained where the sample flow rate is low. At the higher sampling rate that same ratio increases to 46.8. Did changing the sample flow rate cause such a dramatic change, or is there some other mechanism at work that produces far higher ratios of penetration, comparing high versus low DOP penetrations than that found on the DOP test (where the highest possible ratio is 15)?

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*Radon and Thoron Daughters*

One of the errors corrected in the work described by Gonzales et al is as follows: "Some preliminary data were rejected because of sample contamination by radon and thoron daughters. This problem was eliminated by waiting several weeks between sample collection and counting, to permit radioactive decay of these short-half-life materials."

No explanation is given. How was the problem first recognized? How was it determined that only radiation due to radon daughters and thoron daughters was escaping? Could plutonium particles have been escaping during the several week waiting period due to alpha recoil effects? Is the penetration of the HEPA filters being understated? Are radon and thoron daughters always associated with plutonium oxide particles? If so, must adsorption filtration always be used in plutonium oxide filtration systems? There are airborne plutonium filtration systems that have no adsorption equipment.

*Filters in Series*

The conclusion reached by Gonzales et al<sup>(4)</sup> that three HEPA filters in series show penetrations, when filtering plutonium aerosols, in line with ERDA guidelines is certainly premature. Testing aerosols at concentrations that are  $2 \times 10^5$  to  $1.6 \times 10^6$  as great as those found in the field neglects what must be serious effects of concentration on penetration. Indications are that penetrations of HEPA filters are increased at lower concentrations—as witness the 60-fold increase in penetration of a third stage HEPA filter as compared to a first stage filter.

The effects of particle size distribution and particle shape have not been adequately ruled out as contributing to lower penetration readings than will be found in field installations. The plutonium aerosols generated in the laboratory to test filters in series had larger particle size distributions and more irregularly shaped particles than existed in the effluent from the plutonium recovery facility.

The tests described in the report<sup>(4)</sup> studied penetrations of three HEPA filters in series. It is common practice to use five and even six HEPA filters in series. The finding that the filter penetration increases in each

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subsequent filter stage after the first one and that the third stage penetration was borderline with respect to ERDA guidelines, certainly ensures that the penetration of stages of filtration, after the third HEPA filter in a series, will certainly exceed ERDA guidelines.

None of this discussion includes leakage effects. Since, even the 25 CFM filters tested show signs of leakage, full-scale, field installations with multiple filters in each bank and multiple banks, will have significant leakage that will increase penetrations even further. For example, the ANSI guidelines<sup>(6)</sup> allow 0.1% air leakage of the filter frame assembly. As previously shown that means that the minimum penetration that can be expected in a filter bank is  $1 \times 10^{-3}$  plus  $3 \times 10^{-4}$  (allowable HEPA filter penetration), without taking into account all the multiple other leakage possibilities.

*Conclusions*

1. The HEPA filter evolved from filters developed for gas masks needed to protect against chemical warfare smokes.
2. More sensitive test methods than previously required led to the development of the small, hot DOP (dioctylphthalate) test used for filter material development.
3. The hot, DOP test, large enough to obtain penetration results on full-scale (1,000 CFM) filters is used to control quality of filters used in the nuclear industry.
4. The cold, DOP test is available for leakage testing of both individual filters and of assembled filter banks. It is not an efficiency test.
5. Two flow testing accentuates the difference between assembled filters that have pinhole leaks and those that do not.
6. Only constant cross-checking and the use of experienced operators can maintain the accuracy of all tests.
7. Filters and filter materials made of glass fibers are subject to buildup of electrostatic charges that raise apparent efficiency. In use, at high relative humidity, these charges will leak off. Air at high relative

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- humidity must be passed through such filters (III) the operator is certain that the electrostatic charge has leaked off.
8. Tests of installed filters are essential to ensure the maintenance of the HEPA filter efficiency. The frequency of testing required depends on many factors but may be as much as monthly.
  9. Leakage of filter materials, assembled filters, the gaskets between assembled filters and filter frames, filter frames, and the point of connection between filter frames and plenums must be meticulously eliminated if the efficiency of the HEPA filter is to be relied upon.
  10. In spite of all precautions, HEPA filters are basically fragile and are subject to catastrophic failure due to fire and explosion, allowing unacceptable emission of radioactive materials.
  11. Inadequate attention has been paid to the alpha recoil effect which can increase the emission over time of radioactive, alpha-emitting materials such as plutonium.
  12. Gonzales et al.<sup>(4)</sup> describes an attempt to correlate individual filter, hot, DOP test results of three HEPA filters in series with laboratory tests against artificially generated plutonium aerosols. The article raises the following questions in the mind of a reader:
    - a. Only 25 CFM filters have been tested. The scale-up factor between these filters and installations that may have hundreds of filters with capacities of 1,000 CFM each is so large that the applicability of the results (especially with regards leakage) is doubtful.
    - b. The particle size of the artificially generated plutonium aerosol, even as measured during the tests, never included the lower ranges of the particle size found in one of the process discharges of plutonium aerosol that the tests attempted to duplicate.
    - c. The particle shape of the artificially milled plutonium particles could not duplicate the shape of thermally generated particles.
    - d. The article raises the disturbing problem that samples had to be held for weeks in order to allow radon and thoron daughters to decay. The

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- assumption is that adsorbed gases on penetrating particles was causing high results and yet there are installations that make no attempt to capture radon and thoron daughters.
- e. In order to obtain penetration results of three filters in series, plutonium concentrations  $2 \times 10^5$  to  $1.6 \times 10^6$  times concentrations found in field installations had to be used.
  - f. The enormous concentrations caused exceedingly rapid plugging of the first HEPA filter and such rapid changing of test conditions that the penetration results are subject to grave doubt, probably being overstated.
  - g. Only at the third stage filter was the concentration in the range of that found in field tests. The third stage filter had a penetration that was 9 times as high and in one series of tests 60 times as great as the first stage filter.
  - h. Installation leakage, concentration effects during the tests, particle size differences between tests and field aerosols cast doubt on the conclusion that EROA guidelines of filter penetration of  $500 \times 10^{-6}$  for filters in testable stages and  $2000 \times 10^{-6}$  for filters in untestable stages have been met. On the contrary indications are that filter penetrations for plutonium aerosols may easily exceed EROA guidelines.

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8. Owen, J. B., *Review of the Exhaust Air Filtering and Air-Sampling, Building 71, Rocky Flats Plant, Golden, Colorado*, March 14, 1983, unpublished
9. Carl J. Johnson, *Comments on the 1987 Fire of the Rocky Flats Plant in Jefferson County, Colorado*, reported to the Conference on the Relation of Environmental Pollution to the Cancer Problem in Colorado of the American Cancer Research Center and Hospital, Lakewood, Colorado, September 26, 1980
10. Carl J. Johnson, *Evolution of the Hazard to Residents of Arsenic Chloride Inhaled in the Plutonium, International Radiation Protection Association*, 11th International Congress, Paris, 24-30 April, 1977

(27)

CITY AND COUNTY OF DENVER



DEBORAH L. ORTEGA  
CONCERNED CITIZEN DISTRICT #16E

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June 6, 1989

Mr. W. John Arthur, III, Project Manager  
MFP - SEIS Project  
P.O. Box 5400  
Albuquerque, New Mexico 87115

RE: SEIS Comments

Dear Mr. Arthur:

As a member of the Denver City Council representing several neighborhoods along the I-25 corridor, I wish to register my strong objections to the proposed alignment of nuclear waste to the Waste Isolation Pilot Plant through or near Denver's core neighborhoods and Central Business district.

I believe that the transportation of such materials along I-25 creates a danger that is much too great for residents and workers in surrounding areas. Therefore, I would encourage you to seek out an alternative route that would divert this traffic away from the city.

I would also urge that the Department of Energy conduct additional tests on the CH TRU container, the TRUPACT-II. Obviously, there is a significant potential that the containers could be crushed in the event of an accident. Such a failure would result in the release of the contents. The containers be tested exhaustively to determine whether they will withstand such impacts.

Finally, it does not appear that there has been any training of emergency response teams and rescue squads in many areas along the transportation corridor. Without such training, the potential for a major accident is increased. The Department of Energy must be committed to providing a sufficient revenue stream throughout the 20-year course of the project to allow for local emergency response training, as well as for the clean-up of any accidents that may occur.

7.3.3.1-6

7.3.1.1-9  
7.3.4-2

7.3.2.1-2  
7.1.2.8-1  
7.1.2.8-6  
7.1.2.8-7  
7.1.2.8-11

On behalf of my constituents and all the citizens of Denver, I am sure that you address these very serious concerns before endangering the lives of our neighborhood people.

Sincerely,

*Martha L. Ortega*  
Martha L. Ortega  
City Councilwoman  
District #3

Oregon Comments On The  
DRAFT MIPP SEIS:  
Focus on Transportation

I am William Schroeder. I am chair of the Oregon Hanford Waste Board. I am here to present the State of Oregon's formal comments on the Supplemental Environmental Impact Statement for the U.S. Department of Energy's Waste Isolation Pilot Project in New Mexico.

Oregon's response also includes technical comments in separate documents.

My appearance here today is on behalf of Governor Neil Goldschmidt, the Waste Board and its Advisory Committee, and the people of Oregon.

I will put our conclusion first. We believe the MIPP should open as planned for a five year test period. Emplacement of TRU waste, including waste from Hanford, should proceed as planned.

The 1987 Oregon legislature created the Hanford Waste Board and the Hanford Advisory Committee (HAC). The Board recommends policy to Governor Goldschmidt and the Legislature on Hanford nuclear weapons waste issues.

Governor Goldschmidt asked the Committee to "advise the Hanford Waste Board on grassroots opinions, attitudes and ideas about nuclear weapons waste transport." Specifically, the Governor wanted the Committee to focus on the transport of transuranic waste on I-84 across four Oregon counties. From May to October last year, the HAC thoroughly studied the transport of TRU wastes out of Hanford. They met with USDOE officials. They conducted eight public meetings and met with local officials along I-84 to gather public comments and learn of concerns. In October they presented their findings and recommendations to the Hanford Waste Board.

The HAC found that:

"The risks of TRU waste transport are far less severe than the risks of leaving these wastes in temporary storage at Hanford. TRU waste transport through Oregon can be done with a high level of safety and at minimal risk."

They further concluded that:

"An accident-free program cannot be guaranteed."

And that:

"USDOE and Oregon agencies should take further reasonable actions to enhance transport safety and public confidence in the safety of these shipments."

The MAC made specific recommendations for preventing accidents and preparing for a possible emergency.

I must say I was disappointed with the SEIS when I first read it several weeks ago. From the outset, I was under the impression that USDOE had, at least by inference, assured Oregon that our transport safety concerns would be addressed in the Draft Supplement Environmental Impact Statement.

USDOE's representatives attended all of our meetings and hearings in the route communities. Nearly 200 local officials and citizens voiced legitimate concerns about transport safety. Citizens helped the Advisory committee draft more than 50 recommendations on accident prevention and emergency response.

The Committee delivered the recommendations to the Board in October. The Board and Governor Goldschmidt endorsed them as Oregon's position on the transport of nuclear weapons waste through our state.

Our primary concerns, which are covered in detail in our technical comments, are accident prevention and emergency response to an accident.

This SEIS addresses only two of Oregon's 50 transport safety recommendations. However, it's reassuring to know that Oregon's transport safety concerns are being addressed in another forum -- namely, the Western Governors Association.

Gov. Goldschmidt chairs the Association's Nuclear Waste Task Force. The Governor's representative, Mr. Bill Dixon, helped craft a report signed by the governors of Washington, Oregon, Idaho, Utah, Colorado, Wyoming and New Mexico.

The report identifies what those governors believe should be USDOE's Transport Safety Plan for TRU wastes. The MCA report will be presented to Secretary of Energy Watkins and to Congress. Mr. Dixon assures me that the MCA agreement effectively addresses the priority safety concerns of Oregonians along the transport route.

I know I speak on behalf of the Board and Advisory Committee when I say that without USDOE's attention to the MCA report, we would find this impact statement unacceptable. We are not particular about who secures a

firm and reliable commitment from USDOE on transport safety -- so long as that commitment is forthcoming.

The ball is now in USDOE Secretary Watkins' court. He is on the record as wanting to work with the states on nuclear weapons waste cleanup issues. He has publicly stated that he wants to be out in front of the Congress on these issues. This is a splendid opportunity for the Secretary to demonstrate his willingness to move quickly and surely on issues that are critical to an effective program to clean up this nation's nuclear weapons wastes.

For the record, I am submitting the full text of the Advisory Committee's and the Board's transport safety recommendations. I hope that we will see clear evidence that USDOE takes these issues seriously. I further hope that occurs sooner rather than later.

In the interest of brevity, I have not discussed our specific transport safety recommendations. I am compelled, however, to mention one point that is pivotal to the success of safe transport of nuclear weapons waste in Oregon.

That is how the State of Oregon is to pay for its part in the safety program.

Clean-up of U.S. defense wastes is a national problem. The USDOE is responsible for the cleanup. The risks of TRU waste accidents are being imposed on local, state and tribal governments by USDOE. Therefore, the costs of accident prevention, emergency preparedness and response, and public information must be borne by USDOE.

Governor Goldschmidt feels strongly that the grassroots concerns identified by the MAC must be considered. He has directed the Oregon Department of Energy (ODOE) to see that is done.

Senator Hatfield was able to secure seed-money from Congress. The funds are being channeled through the Western Governor's Association to Oregon, Washington and five other states en route between Hanford and NTPP.

The seven states are working together to build a safety program that is consistent along the entire route. They will do what they can with the seed money that is available. They will also work to secure ongoing funds to assure ongoing safety.

Another vehicle through which we are addressing concerns is the Pacific States Committee on Radioactive Materials Transportation Management. This group was created by the 1987 Oregon State Legislature, and the law was signed by Governor Goldschmidt. State Senator Jane Chase represents Governor Goldschmidt on that group. The Pacific States Committee is setting up ways to assure States inspect the TRU waste shipment to high standards. It has also drafted an agreement to assure the three

northwest states are able to help one another with an accident near their state borders.

That concludes my testimony. I have ODOE staff here with me. We will be happy to try to answer any questions you may have.

Thank you.

BR:csk/2436L (d4)  
6/2/89

OREGON COMMENTS

DRAFT SUPPLEMENT  
ENVIRONMENTAL IMPACT STATEMENT  
WASTE ISOLATION PILOT PLANT

JUNE 1989

Oregon Comments On The  
DRAFT WASTE ISOLATION PILOT PROJECT SEIS:

Introduction

The Final Environmental Impact Statement (FEIS) was published in 1980. The FEIS looks at environmental impacts of various alternatives for the safe disposal of transuranic (TRU) radioactive wastes at the Waste Isolation Pilot Plant (WIPP) near Carlsbad, New Mexico. The April 1989 Draft Supplement Environmental Impact Statement (DSEIS) adds new data and changes to the FEIS.

The proposed action is to operate the WIPP under a "Test Phase" for five years. Results of the tests would be used to assess the ability of the WIPP to meet Federal standards. The aim is the long term protection of the public and the environment.

This proposed action would place TRU waste in the facility. The waste could be removed after the five year "test phase" if studies show that standards cannot be met. Beyond five years the natural closure of the waste rooms by salt "creep" would make safe removal of the waste containers difficult. In time, the natural closing of the rooms by this salt creep would preclude safe retrieval. Such closing is one of the advantages of the facility. The rooms are expected to be sealed about 80 years from the time they are mined.

Oregon Efforts

These are Oregon's comments on the U.S. Department of Energy's DSEIS for WIPP.

The comments reflect Oregon's chief concerns about transuranic waste shipment to and storage at the WIPP. Two issues comprise the theme of most of our comments: transportation and public information/involvement. Hydrology comments are in a separate document (attached).

Oregon comments were written by the Oregon Department of Energy with help from Oregon State University, the Oregon Department of Environmental Quality, and the Oregon Water Resource Department.

The Hanford Waste Board presents these comments for the State of Oregon.

\*\*\*\*\*

The 1987 Oregon legislature created the Hanford Waste Board and the Hanford Advisory Committee (HAC). The Board recommends policy to Governor Goldschmidt and the Legislature on Hanford Waste issues.

Governor Goldschmidt asked the HAC to "advise the Hanford Waste Board on grassroots opinions, attitudes and ideas about nuclear weapons waste transport."

From May to October, 1988 the HAC thoroughly studied the transport of TRU Wastes out of Hanford. They met with USDOE Officials. They held eight public meetings and met with local officials along I-84 to gather public comments and learn of concerns. In October they presented their findings and recommendations to the Hanford Waste Board.



The HAC found that:

"The risks of TRU waste transport are far less severe than the risks of leaving these wastes in temporary storage at Hanford. TRU waste transport through Oregon can be done with a high level of safety and at minimal risk."

They further concluded that:

"An accident-free program cannot be guaranteed."

And that:

"USDOE and Oregon agencies should take further reasonable actions to enhance transport safety and public confidence in the safety of these shipments."

The HAC made specific recommendations for preventing accidents and preparing for a possible emergency.

Attached is the full text of the Advisory Committee's recommendations.

The Board agrees with the need for the supplement to the Environmental Impact Statement. Our comments focus on these areas: 1) waste transport; 2) public information; 3) The waste radionuclide inventory; 4) hazardous chemical constituents of transuranic mixed waste; and 5) hydrogeology.

The cleanup of Hanford is overdue. Shipping TRU wastes to MIPP is an important beginning. The Board appreciates the opportunity to comment on the Draft SEIS.

COMMENTS

Transportation

USDOE has acted consistently with the HAC recommendations in two areas.

1. The HAC requested that radiation detection equipment be carried with each shipment. The SEIS indicates that will be done.
2. The HAC recommended that transport casks be built to Nuclear Regulatory Commission standards, and that the casks be thoroughly tested. We understand that the cask tests showed small problems during the tests. We understand that USDOE has fixed those problems to meet the NRC standards and re-tested the casks.

These HAC recommendations are not thoroughly covered in the SEIS.

In the area of accident prevention:

1. USDOE should encourage independent state inspection of the shipments. Oregon will work with the State of Washington to see that all shipments are inspected before leaving Hanford.
2. Drivers should be familiar with the route through Oregon. Drivers should have several years driving experience without preventable accidents. Drivers' experience should be with large vehicles on mountainous roads subject to bad winter weather. These are the conditions they will find in Oregon, Washington, Idaho and other corridor states.
3. Shipments should not be made when severe weather or road conditions threaten a safe trip.
4. Safe parking areas should be designated for use during severe winter weather and unsafe road conditions.

7.3.2.1-1

7.3.2.1-6

7.3.3.1-5

10. The USDOE has done a good job of attempting to quantify transportation risks. The results of their analysis show that the risks for all of the options are very small. And, the assumptions behind the calculations appear to be reasonable. But, a key factor that strongly influences the final results is the total respirable radionuclide fraction that could result from an accident and spill. The SEIS states release fractions that are much smaller than those used in other work. The fraction is influenced by the assumption of a small puncture in the TRUPACT II. The result would be low combustion due to limited air intake.

7.3.5.1-34

The FEIS should describe a range of respirable release fractions that are based on a range of assumptions. At the least, USDOE should justify the "small puncture" assumption.

When using the unit "person rem" it is vital to know how many persons were used in the calculation. This is not obvious in the report. And, it is difficult to determine. It makes a big difference if 10,000 person-rem is spread over 100 people or 1,000,000 people. None of the calculated person-rem doses in this work is significant. But, this information should be available in the FSEIS.

11. The DSEIS describes the NUPAC 72B for the transport of RH TRU waste. The carbon steel canister will contain drums or similar containers of TRU waste.

Manford double shell tank wastes contain high concentrations of TRU. This material is now destined for the High Level Waste Vitrification Plant. It appears that the vitrified waste may be classified as high curie content, RH TRU waste. The DSEIS does not address this possibility. Of specific interest to Oregon is the safe transport of this vitrified waste to MEPP. Waste inventory changes and appropriate transport for vitrified waste should be described in the FSEIS.

2.2-3  
7.3.1.3-1  
7.9-5

5. Oregon wants to be notified of the pending shipments. The electronic tracking system proposed by USDOE -- known as "TRANSCOM" -- will meet part of our notification needs. TRANSCOM should be backed up by telephone notice to one State official. The State will then pass the information to local officials.

In the area of Emergency Preparedness:

6. Equipment to detect radiation is now available to emergency crews along the Oregon route. More equipment will be available before the TRU waste shipments begin.

7. Some emergency crews have been trained to handle a nuclear transport accident. Special training about the TRU waste shipments should be available to all potential responders. We understand that USDOE will help provide that training. It should be built into the existing State program. Over time, the State of Oregon may choose to provide this training. This would allow easier access for those who need it. Federal funds will be needed to do this work.

8. Oregon has an emergency plan for hazardous materials (HAZMAT). The plan outlines the general roles and duties of all who respond to a HAZMAT accident. The state needs federal funds to fine-tune the plan to assure it covers the special concerns of TRU waste shipments. The fine-tuning should include detailed checklists for local emergency crews.

The SEIS states that communities along the route have been offered help in planning. We are not aware of that offer. As said earlier, any help should build upon the State's current program.

9. Emergency drills for nuclear transport accidents have been conducted along the route. A special drill involving TRU waste should be done in each county along the route: Umatilla, Union, Baker and Malheur.

7.3.2.1-6

7.12-3  
7.12-4  
7.12-5  
7.12-9-11

12. The FSEIS should describe Quality Control/Quality Assurance procedures for preshipment packaging and loading. Of particular concern is the preshipment inspection of seals on the TRUPACT II.

13. Oregon's last concern is the most important. How is the State of Oregon to pay for its part in the safety program?

Cleanup of U.S. defense wastes is a national problem. The USDOE is responsible for the cleanup. The risks of TRU waste accidents are imposed on local, state and tribal governments by USDOE. Therefore, the costs of accident prevention, emergency preparedness and response, and public information must be borne by USDOE.

Governor Goldschmidt believes strongly that the grassroots concerns identified by the HAC must be considered. He has directed the Oregon Department of Energy (ODOE) to spearhead Oregon's approach.

First, the Governor, U.S. Senator Mark Hatfield, and ODOE have been able to secure funds for FY 1989 from Congress to begin solving transportation concerns. The funds are being channeled through the Western Governor's Association to Oregon, Washington and the five other states en route from Hanford to WIPP. Governor Goldschmidt is the WGA's lead Governor for transportation.

The seven states are working together to build a safety program that is consistent along the entire route. They will do what they can with the one year's money that is available. They will also work to secure ongoing funds to assure ongoing safety.

Second, the State of Oregon is an active member of the Pacific States Committee on Radioactive Materials Transportation Management (PSC). This group was created by the 1987 Oregon State Legislative session. State Senator Jane Cease represents Governor Goldschmidt on the PSC.

7.3.1.1-25

7.3-3

The PSC is setting up ways to assure States inspect the TRU waste shipments to a high standard. The PSC is also developing a mutual aid agreement among Washington, Oregon, and Idaho for accidents near state borders.

Oregon knows that transport of the TRU wastes will involve some risks, albeit small ones. Those risks can be reduced even more by taking action to prevent accidents and to be prepared if an accident occurs.

USDOE must make the ongoing commitment to work with route states for initial set up of safety programs. It must also commit to ongoing support over the 25-year nuclear weapons waste transport campaign.

Public Information:

A range of public information activities was listed in the SEIS. These activities allowed the public to express concerns and comments to USDOE.

In 1988 the Oregon Hanford Advisory Committee (HAC) found that USDOE and Oregon agencies know the importance of public confidence in transport safety. That clear message is a result of state and federal public information efforts.

HAC concluded that some public perceptions about TRU waste transport safety are realistic and some are not. But, all are valid. And, the concern should be addressed by safety improvements or public education. The HAC recommended that USDOE continue aggressive public education and involvement programs throughout the transport campaign. The SEIS avoids any discussion of ongoing public information.

There is no question that a proactive public information effort is paramount to public acceptance of the safe transport of TRU waste.

Waste Inventory:

The USDOE Defense Waste Environmental Impact Statement did not resolve the disposition of TRU contaminated soil sites. If contaminated soil is retrieved, it is to go to the MIPP site. It is unclear that this waste has been considered. The volume impact of adding Hanford contaminated soil to the current MIPP inventory estimates is substantial.

There is no indication that vitrified TRU waste is considered in the SEIS. We understand that vitrification of high-cure content TRU waste will be done at Hanford. This would certainly change waste inventory and must be addressed.

Factors which may alter future estimates of waste volume and shipments from each site should be addressed.

Also, the discrepancy between the design capacity of MIPP for RH-TRU waste and the estimated inventory of RH waste should be explained. Additional sources and locations of RH waste proposed for disposal should be identified.

Hazardous Chemical - Mixed Waste

Waste from the Rocky Flats Plant in Colorado was used to identify hazardous chemical constituents in CH TRU mixed waste. Rocky Flat waste is about half of the total CH TRU waste to be disposed. The Oak Ridge National Laboratory has about 90 percent of the total RH TRU that will go to MIPP. No other site specific information is available in the DSEIS.

Ten defense program facilities may transport waste to MIPP. The FSEIS must include the maximum concentrations of hazardous chemical constituents at each site.

9.1-7  
7.9-28

7.3.1.9-1

5.1-1

5.1-1  
7.9-10

7.9-32

The short list of hazardous chemical constituents is a concern. It is unclear that all constituents have been identified. THE SEIS should confirm that all possible constituents are included. And, the reactivity, corrosivity, and volatility of the mixed waste should be discussed.

The final SEIS should include a discussion of USDOE's procedures to meet RCRA Part B permitting requirements.

BR:CSK  
2430L  
5/26/89

7.9.3-3

3.7-4

E-JUN-89; EX-00094, PAGE 12 OF 27

REVIEW OF HYDROLOGY SECTION OF  
FINAL ENVIRONMENTAL IMPACT STATEMENT

FOR

THE WASTE ISOLATION PILOT PLANT  
CARLSBAD, NEW MEXICO

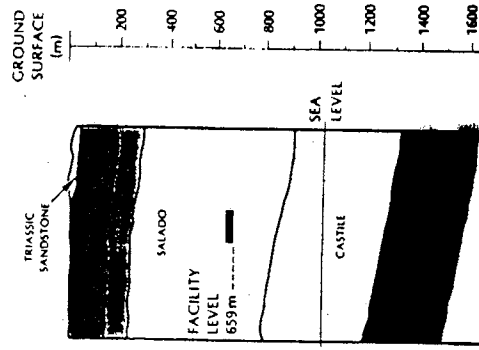
June 1989

E-JUN-89; EX-00094, PAGE 13 OF 27  
HYDROGEOLOGY

Since 1980 new geological and hydrological information has changed understandings of the hydrogeological characteristics of the WIPP site as they relate to long term performance. This review covers only the geological and hydrogeological portions of the April 1989 SEIS.

The WIPP facility is 2,150 feet underground. It is in the 3,000-foot-thick bedded halite (salt) and anhydride (calcium sulfate) Salado Formation. The middle section of the formation contains commercially valuable potash, about 1,000 feet above the waste rooms.

WIPP SITE STRATIGRAPHY





NEW GEOLOGIC AND HYDROGEOLOGIC INFORMATION

1. The permeability of the Salado Formation, the salt layer in which the TRU waste will be stored, is lower than previously believed.
2. The Salado formation has higher moisture content than was previously believed.
3. A higher transmissivity zone is present in the Rustler Formation in the southeastern portion of the WIPP site.
4. Salt "creep" occurs faster than previously believed.

These new data are the result of studies at the repository. This raises new issues about whether the WIPP can meet federal standards for the long term safety of the public and the environment. These are the most important issues:

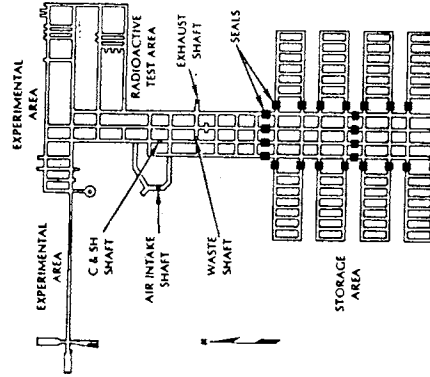
ISSUE

1. Are there hydrogeologic reasons to reject the proposed action (emplacement of TRU wastes for a five year test period)?

COMMENT

There are no irreversible conditions that would stop the proposed test phase. The hydrogeologic questions are being addressed in the test facility (experimental area). It is separate from the waste storage area.

LOCATION OF DRAFT SEALS



- 7 -

ISSUE

2. Can the WIPP bore holes, elevator shafts, and air shafts be effectively sealed from the environment?

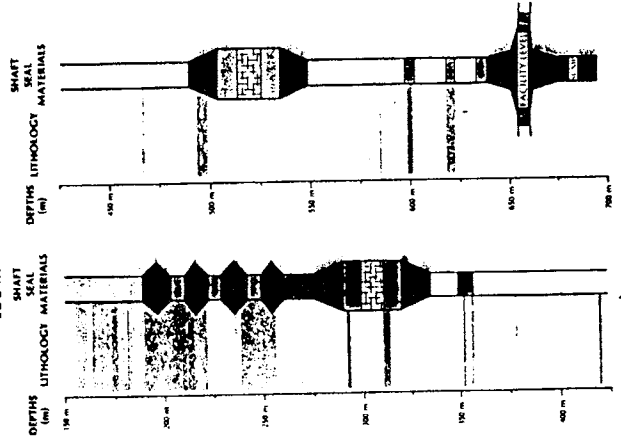
Will seals eventually deteriorate and allow TRU wastes to be moved by ground water to the environment?

COMMENT

There are no irreversible conditions that would stop the proposed plug/seal performance tests. Good progress has been made using salt, and salt bentonite-mixtures for seals. Continued studies on seals will be done in the experimental areas. Studies will evaluate materials, emplacement techniques, and performance.

- 8 -

LOCATION OF SHAFT SEALS



LEGEND

STRATIGRAPHY		SEAL MATERIALS	
[Symbol]	SALT	[Symbol]	CEMENT
[Symbol]	CLAY	[Symbol]	BITUMEN
[Symbol]	CLAY/ANIONIC	[Symbol]	BITUMEN/ANIONIC
[Symbol]	SALT/ANIONIC	[Symbol]	CLAY/ANIONIC
[Symbol]	BITUMEN	[Symbol]	CLAY/ANIONIC



- 9 -

ISSUE

3. Generated gases from the waste could cause fractures in the salt bed allowing more rapid ground water movement.

COMMENT

The relation of fracturing on ground water movement is being studied. Studies include the use of additives and compaction of the waste to reduce gas before emplacement.

ISSUE

4. Excavation for underground storage and experimental rooms has fractured the surrounding rock. This creates a "disturbed rock zone." Such rock zones may provide pathways through which fluid can bypass the tunnel and shaft seals.

COMMENT

The "disturbed rock zone" studies are being done in the experimental area. Resolution of this issue depends on the technology developed to seal the "disturbed zones".

- 10 -

ISSUE

5. Fluid movement around seals may occur within the underlying anhydride layer (Marker Bed 139). This layer is about 3.3 feet below the floor of the waste storage rooms.

COMMENT

Mining induced fractures within the Marker Bed 139 may provide a potential pathway for gas or brine migration. The marker bed may have to be removed or grouted before seal emplacement. Studies are ongoing.

Questions to be answered:

1. What makes the brine flow? Is it a local system caused by fracturing of the rock near the borehole? This would cause water to drain from the fractures. Or, is it driven by a far field hydraulic system? This means that the water molecules connect to other water molecules thousands of feet away.

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- 11 -

The drill holes generally produce less water with time. This supports the local system theory. The drill hole fractures the salt around the hole. The fracture opens up pathways toward the hole which now has reduced pressure (from 2000 psi to about 15 psi). The reduced pressure pushes brine toward the drill hole. A similar gradient will be created toward the mined out storage rooms. And interstitial water will flow toward the rooms.

2. Is the flow system a Darcy or non Darcy flow medium?

"The two to three years of underground observation have not been sufficient to distinguish between Darcy and non Darcy flow". (SEIS)

The Darcy flow model assumes a porous and elastic medium. The non Darcy flow model assumes a plastic or non-porous medium.

The question of Darcy or non-Darcy flow models has a direct bearing on the accuracy of the travel time. But, the results would be similar using either model. This will probably not lead to a "fatal flaw".

3. Will compaction of the waste within the disposal rooms be incomplete or interrupted? And will the incoming brine mix with waste in the form of a slurry?

This slurry or wetary mixture of insoluble matter could move through tunnels or other mining pathways. This effect is being studied.

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- 12 -

4. What is the potential for waste generated gas?

The combination of microbial activity, canister corrosion, brine, metal-waste corrosion and radiolysis could produce large quantities of gas.

This gas pressure could fracture the salt and allow movement of waste material to the environment. Studies are ongoing.

#### RESULTS OF GROUNDWATER TRAVEL TIME MODELING

The ground water travel time estimates were done using a computer model code called NEFFRAM. This model was developed by the Nuclear Regulatory Commission to simulate ground water transport of radionuclides. This model is used with a flow model called SWIFT-11.

Four scenarios were modeled.

1. Case IA. The repository is undisturbed by human intrusion;
2. Case IB. This case is the same as IA except the waste is treated (compacted) to change gas generation and porosity. These factors influence the travel time of the fluids that could bring radionuclides from the repository to the environment.

3. Case IIA. The repository is disturbed by human intrusion. A drill hole is inadvertently drilled into and through the repository and into the Castile Formation.

The drill crew would be exposed to transuranic waste. The brine reservoir in the Castile Formation (about 900 ft. deeper) would be breached. The brines moving up would pick up radioactive materials (TRU) from the repository and then spread out into the Culebra aquifer. A stock well was assumed to pump this water to beef cattle.

4. Case IIB. This case is the same as IIA, except the waste is treated (compacted).

Results; Cases IA and IB;

The computer model estimated travel time of the least retarded/fastest moving radionuclides (worst case scenario) was 25,000 years to the Culebra Aquifer (the closest aquifer above the storage rooms). In 10,000 years no radionuclide had traveled more than 20 meters from the repository.

Cases IIA and IIB concern exposure rates to drill crews, ranch families etc. Exposure rates are stated to be below health-based levels set by the Environmental Protection Agency, US DOE, and the International Commission on Radiological Protection. These levels are based on best available data.

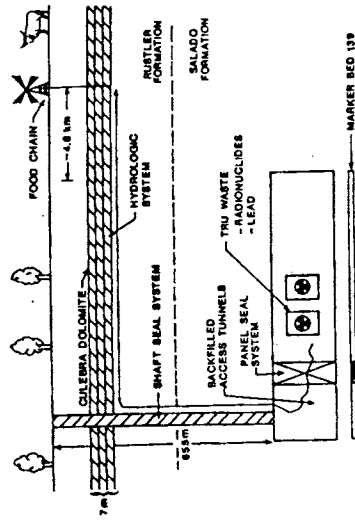


FIGURE 4.3  
SCHEMATIC OF THE REPOSITORY FOR CASE I, UNDISTURBED PERFORMANCE

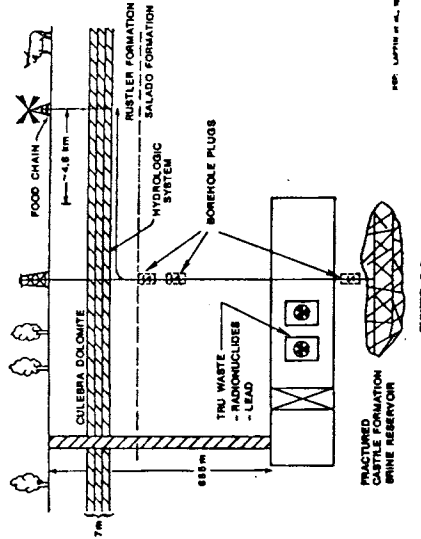


FIGURE 4.4  
SCHEMATIC OF THE REPOSITORY FOR CASE I, UNDISTURBED PERFORMANCE

SUMMARY

Based on a limited technical review, Oregon finds the proposed action to operate the WIPP under a "Test Phase" for five years reasonable. This proposal would include the emplacement of TRU wastes in the repository before final approval is obtained.

The hydrogeologic concept of the repository seems technically sound. A research and development facility is in place to address the necessary technology development for long term isolation. TRU wastes can be retrieved in the five year period if a fatal flaw develops.

Repository research and development does not take place where the TRU waste would be stored. The research and emplacement would not interfere with one another.

New geologic and hydrogeologic information does not appear to produce an obvious "fatal flaw". New technology such as sealing of tunnels, shafts and a marker bed is required. The amount of moisture in the mine is more than originally thought. But, it does not appear to be an insurmountable problem.

The modeling efforts on predictions of radionuclide travel times are state of the art. But, since there is no way to validate the long term accuracy of any model, it can only be used as a tool in the decision for safe disposal of TRU waste.

The water in the Salado formation is hundreds of thousands of years old. It has moved very little in that time. It is highly probable that the hydrology will return to original conditions after the repository seals itself.

The possible intrusion by drilling is the greatest concern for exposure to TRU stored waste. The SEIS discusses and addresses the possibility and consequences.

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REPORT TO THE 1989  
 OREGON LEGISLATIVE ASSEMBLY\*  
 ON THE  
 TRANSPORTATION OF RADIOACTIVE MATERIALS  
 BY THE  
 OREGON DEPARTMENT OF ENERGY

January 1989

\*As required by ORS 468.017



Department of Energy

625 MARION ST. NE. SALEM, OREGON 97310 PHONE 378-4040 TOLL FREE 1-800-221-8035

TO: Governor Neil Goldschmidt DATE: February 10, 1989

FROM: Dave Yaden, Director *DY*

SUBJECT: Radioactive Materials Transport: 1987-1988

As per statutory mandate, I hereby submit to you the Department of Energy's report on the Transport of Radioactive Materials in Oregon in 1987 and 1988. ORS 469. 017 requires you to transmit this report to the Legislature.

The report is fairly straightforward -- perhaps too much so. For example, it notes the extent to which the transport of radioactive material in and through Oregon has declined in recent years. There were 1,579 shipments in 1985. In 1988, there were only 590.

Let that trend have a lulling effect, I will advise you that equally dramatic increases are on the near horizon. A 30 to 50-year program to clean up nuclear weapons waste at Hanford in southeastern Washington State has enormous implications for radioactive transport in Oregon.

The start of that turnaround could be as early as 1990 or 1991.

Hanford is a temporary repository for high level, low level, and transuranic (plutonium tainted) wastes from nuclear weapons materials production. Hanford's waste has the potential to imperil our people and our environment. Our administration is committed to a timely and effective cleanup. That means some wastes must be trucked through Oregon.

Much of Hanford's radioactive waste is to find permanent disposal in federal repositories. One such repository for transuranic wastes is in New Mexico. The 1-84 transport route from Hanford will cross four Oregon counties -- Umatilla, Union, Baker, and Malheur, and the Umatilla Indian Reservation.

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Governor Neil Goldschmidt  
February 10, 1989  
Page 2

It will take 25 years and thousands of shipments to haul Hanford's transuranic wastes to New Mexico. If that transport campaign was to begin tomorrow, I would have to say that Oregon is not ready. While the likelihood of a serious transport accident will be small -- and the likelihood of a spill even smaller -- the campaign will not be without risk. Most of that risk will be borne by communities along the route: Pendleton, the Umatilla Reservation, LaGrande, Baker, and Ontario.

None of those communities and counties has the resources today to deal with a massive, long-term radioactive waste transport program. They know that and they've made their feelings clear. In May 1988 you directed Oregon's new Hanford Waste Board and Advisory Committee to work with I-84 route communities to develop safety recommendations for transuranic waste transport.

That work has been done. I have included here a copy of the Hanford Waste Board's final transport safety recommendations. I believe you will find the Board's and Advisory Committee's work complete, clear, and compelling.

The recommendations have the strong imprint of the sensible, pragmatic people of eastern Oregon. They support the Hanford Cleanup, although it means hauling nuclear waste through their communities.

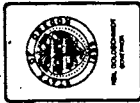
At the same time, they expect -- and they have every right to expect -- that the transport will be as safe as possible. And, if there is an accident, the communities want to be certain of a timely and effective federal, state, and local response to the emergency. They want trained, well-equipped teams on standby. These are the same kind of teams that could handle any kind of accident that involves any hazardous material.

You have responded to that expectation with legislation to create and fund regional Emergency Response Teams within local fire departments. Bills submitted by the State Fire Marshal and the Department of Environmental Quality will provide the kind of security the affected communities need if the Hanford Cleanup is to proceed and succeed.

Those measures and others will help us meet the certain reality of this nation's first attempt to clean up nuclear weapons waste. It took more than 40 years to make Hanford what it is today -- a potential scourge. It will take even longer to put it right.

Our stake in the success of that effort cannot be overstated.

DWY/MSJ:csk  
501Bm(GZ/F1)



## Department of Energy

625 MARION ST. NE, SALEM, OREGON 97310 PHONE 376-4040 TOLL FREE 1-800-221-8035

### REPORT TO THE 1989 OREGON LEGISLATURE

#### Radioactive Materials Shipments in Oregon

1987-1988

This report explains Oregon's radioactive materials transport safety programs.

The Oregon Department of Energy (ODEE) coordinates those programs. The State Health Division, Radiation Control Section, provides training and maintains detection equipment. The Public Utility Commissioner's Motor Enforcement Division inspects shipments. The Oregon State Fire Marshal's Office provides training. Oregon State University's Nuclear Engineering Department provides training and technical help.

While this report notes a dramatic decline in the number of shipments in recent years, there will be an equally dramatic increase in the future. Cleanup of nuclear weapons wastes at the U.S. Department of Energy's Hanford facilities means tens of thousands of shipments of waste across north central and eastern Oregon.

The first phase of Hanford cleanup will include transport of millions of tons of transuranic (plutonium tainted) waste to New Mexico repository. That transport campaign will last 25 years or more. And, before that project ends, high level weapons waste from Hanford and spent fuel from the Trojan and MW2 nuclear power plants likely will be trucked to permanent disposal, now set for a Nevada repository.

The conclusions in this report include observations on how Oregon can meet the challenge of unprecedented volumes of nuclear waste on the Interstate system.

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### 1. Intent and Requirements of ORS 469.603 through 469.621

The 1981 Legislature passed a law to regulate the transport of radioactive materials in and through the state (statute attached). The law also mandates effective emergency response to transport mishaps. The Legislature's clear intent was the safe transport of radioactive materials.

The Legislature saw that many groups must have roles in safe transport. The Energy Facility Siting Council (EFSC) adopts rules (copy attached). The State Health Division (SHD) has tasks in emergency response and training. The Public Utility Commission (PUC) advises on rules and makes inspections.

ODOE's job is to marshal all these efforts in an orderly program. ODOE has this lead role because we have staff expertise in radioactive materials. ODOE also handles nuclear reactor safety and low-level waste disposal issues.

In radioactive material transport:

- We coordinate emergency preparedness and response.
- We assure that EFSC rules address the cause of accidents.
- We collect fees and pay for training for inspections and emergency response.
- We apply for contract and grant funds.

Our role assures that radioactive materials transport has the special attention mandated by the law.

### II. Oregon's Safety Program

#### A. Rules

The first rules and standards were adopted in 1982 and revised in 1986. The changes made the rules simpler and set fairer fees. Oregon's rules adopt and are in accord with Federal rules. The rules cover all types of transport. So far, all permitted shipments have been by truck.

All high-level shipments and a sample of low-level shipments are inspected by PUC staff. ODOE assures that PUC staff have proper training and equipment to do the work.

The rules and inspections cover:

- Permits are required for all placarded shipments. For such shipments, diamond-shaped placards that read "radioactive" are attached to the truck and/or trailer.
- Fees support part of the program. (\$70/shipment for most shipments; \$500/year for some medical and industrial shipments.)
- Advance notice is given to ODOE for high-level shipments. We relay that notice to local agencies on the transport route.
- Vehicle, driver, and equipment standards are set by PUC specialists and by federal rule.
- The package must be adequate for the amount of radioactive materials in the shipment. The package must meet federal standards.
- Shipping papers must list the cargo in detail.
- Accidents must be reported immediately to the Oregon Emergency Response System (OERS).
- Routes are set for high-level shipments. These are called "route controlled shipments."
- Insurance levels must be adequate, and meet federal standards.
- Accidents must be cleaned up. The spiller must pay for response costs.
- Trucks must have traction devices in winter weather.

Twelve route controlled shipments from Hanford moved through Oregon in 1987-88. These were inspected by the State of Washington. ODOE and PUC have a formal agreement with Washington by which we honor that state's inspections. The pact was signed in 1986 after the two states worked together on many shipments and agreed on standards. The pact is a key first step in building partner programs in the region.

#### B. Emergency Response

Many groups must help in an emergency. These can include local fire, law enforcement, ambulance, hospitals, and highway crews. Experts from state agencies also help. Many federal agencies have roles. And, the shipper has to clean up the spill.

By law, ODOE coordinates these roles. The program includes:

- Training for first responders. The state's regional experts provide this training. In 1983-84, 1,006 persons were trained. In 1985-86, 2,523 persons were trained. In 1987-88 about 1,800 were trained by local trainers, 1,200 by the Fire Marshal, and 300 by Chemeketa Community College.
  - We are now working to meld radioactive materials training with hazardous materials courses. For the past year, the Fire Marshal has included basic radioactive materials in his training. This effort will be expanded. The Health Division has a training program for specialists in radioactive materials.
  - Regional Radiological Technical Assistants (RRTAs). Eighty RRTAs have special training to back-up first responders. Some also train crews in their community. RRTAs have equipment to detect radiation.
  - RRTA's along main routes have special equipment. It is maintained by OSMD.
  - Immediate technical help to first response crews by ODOE Duty Officers. The help is through telephone and phone-to-radio patches. Duty Officers are nuclear engineers and radiation health experts.
  - State Radiation Emergency Response Field Team. The Field Team is part of the Health Division in Portland. It is specially equipped and highly trained. The team is always available to respond to an accident. It helps local crews with the emergency and oversees clean-up.
  - Federal Field Team at Hanford. The Federal Team supports local and state efforts. ODOE has a formal agreement with the Federal Team.
  - Plans and procedures tie the system together. ODOE's plan guides who does what. The plan is the basis for the State's "Hazardous Materials Master Plan." Detailed procedures describe how each group will do its job.
  - Exercises that test the plans and train people. Exercises link and evaluate all parts of the system. Realistic mock accident exercises have been conducted in Culver, Stanfield, Ontario, La Grande, Roseburg, and Lakeview.
  - Critiques of real accidents and drills, which are the best way to improve.
- In 1987-88 there were no radioactive materials transport accidents that resulted in release. There were no accidents in which people were exposed to measurable radiation.

There were two transport "incidents" that required a response to see if there was a release. Both involved trucks. There were no releases.

These incidents were good tests of the response system. Although not perfect, the plan worked well. Lessons learned are now being built into response procedures.

### III. Transport Activity

ODOE has data about the number of radioactive materials shipments that required a permit. Before December 1, 1986, most were low-level waste bound for Hanford. Permits are now needed for all placarded shipments. This includes radioactive materials used in medicine and industry.

The number of low-level waste shipments is falling sharply. In 1985 there were 1,579 shipments. In 1988 there were about 550. (See attached table, map, and list of carriers.)

The drop in shipments is due to the national policy to set up regional low-level waste compacts. In 1985, Washington State imposed a surcharge on incoming shipments to the commercial low-level site at Hanford. The intent is to convince other states and regions to reduce waste volumes and set up their own disposal sites. Washington levied a \$10 per cubic foot surcharge on wastes. The number of shipments soon dropped and have continued to drop. An additional surcharge went into effect in 1988. In 1990, the total out-of-region surcharge will be \$40/cu.ft. In 1993 only waste from Northwest compact states will be accepted at Hanford.

### IV. Outstanding Problems

#### A. Declining Revenue

Problem: Shipment fees finance the program. A drop in shipments reduces revenue. Revenue in 1985 was about \$138,000. In 1988 it was about \$40,000. By 1990, the revenue will not be enough to support ODOE's permit program.

Proposal: Continue to integrate parts of the radioactive materials transport safety program into one program for all hazardous materials.

Radioactive materials are a subset of all hazardous materials. Some parts of the emergency and safety program are unique to radioactive materials. But most aspects are the same as for other hazardous materials.

Senate Bill 38 in the 1989 Session, would transfer our authority to issue permits for radioactive shipments to the PUC in 1990. PUC began to permit hazardous waste shipments in 1985-86. Under SB 38, ODOE will maintain rule making authority and train PUC inspectors.



Other areas of radioactive materials safety are being built-in to new programs. The training programs of DEO and the State Fire Marshal are examples. ODOE participated in a task force to write a hazardous materials training plan. All of this training will include some information about radioactive materials.

Some radioactive materials will be transported regardless of reduced low-level shipments. High-level wastes will be shipped from Hanford and two nuclear reactors (Trojan and Wpp-2) in 15 to 20 years to a national repository. As early as 1990 or 1991 some transuranic wastes from Hanford will be trucked to a pilot project in New Mexico. Oregon is one of seven corridor states to receive funding through the USDOT to address shipments of transuranic wastes to New Mexico. This grant will allow us to coordinate transport state concerns in accident prevention, packaging, routing, emergency preparedness, and public information.

ODOE is accountable for the overall success of the programs.

#### B. Changing Focus of the Program

In 1981, setting up a permit, inspection and training program was top priority. Over time, many of the goals have been met. Nearly 7,000 first responders have been trained. Eighty specialists in local jurisdictions are trained and equipped. They will be the on-scene experts until the Health Division team arrives.

#### V. Major Program Activities for 1989-90

ODOE will continue to coordinate safety programs. Emergency responses will remain important. New public policy issues surrounding Hanford waste shipments will be addressed. Special initiatives are:

##### A. Permits

With legislative approval, ODOE will delegate the duty of issuing permits to the PUC. The PUC now to issues permits for hazardous wastes transport and other truck permits.

##### B. Increase the Number of Low-Level Waste Inspections

A sample of low-level wastes are inspected and all high-level shipments are inspected. Inspectors are now working at all ports-of-entry. A larger sample of low-level shipments will be inspected.

#### C. Shipment of Defense Wastes from Hanford

Oregon will be affected by any decision to "leave or retrieve" nuclear weapons wastes at Hanford. If retrieval is chosen, shipments through Oregon increase. If the wastes are left in place and stabilized storage will pose a risk to Oregon and the Columbia River. Also, Trojan and Wpp-2 spent nuclear fuel will be shipped through Oregon.

ODOE will offer special training for local crews. The training will focus on the specific type of waste to be transported first from Hanford.

#### D. Shipments of Wastes from Trojan to Hanford

Two routes lead from Trojan to the Hanford commercial low-level waste site. One is through Washington on I-5 and I-205 to I-84. The other is through Northwest Portland on U.S. 30 to I-84 and east to I-82 at Umatilla.

Washington State rules ban radioactive waste from all but two Washington ports-of-entry; The rule does not allow use of the Washington route from Trojan.

ODOE believes that the chance and consequences of an accident are lower on the I-5 route. Oregon and Washington are now discussing how to choose the safer route.

In 1987-88, 49 shipments from Trojan to Hanford were inspected.

#### CONCLUSIONS:

Oregon's radioactive materials transport safety programs have responded effectively to volumes dominated by low-level industrial and medical waste. Most low level shipments are by truck. There have been only 12 route controlled shipments (mostly commercial cesium from Hanford to Ohio and Georgia) in the past several years.

Both the nature and the volume of radioactive waste shipments will change dramatically in the next few years. The massive nuclear weapons waste cleanup program at Hanford has enormous transport safety implications for north central and eastern Oregon I-84 route counties.

Those counties and other Oregonians have expressed deep concern about local communities' state of preparedness in the event of an accident or spill. To some extent, those concerns have been addressed by the new Hanford Waste Board and Advisory Committee. The Committee helped citizens and government leaders in the four route counties develop transport safety recommendations for nuclear weapons waste shipments on I-84. A copy of the Board's final recommendations is attached to this report.

OOOE is accountable for the safe transport of radioactive materials in the state. The 1989 Session will consider measures submitted by the State Fire Marshal and the Department of Environmental Quality to create and fund improved emergency response preparedness for mishaps that involve any kind of hazardous material.

OOOE helped develop those proposals and we support them. We believe the measures are important first steps toward effective state and local preparedness for transport emergencies.

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ATTACHMENTS

1. Authorizing Legislation
  - ORS 469.603-621
2. Administrative Rules
  - OAR 345-60-001 to 050
3. Map of Primary Routes used by Radioactive Waste Carriers
4. Table 1: Radioactive Materials Shipments by Route
5. Graph of shipments through Oregon 1982-88.
6. Table 2: Oregon Radioactive Materials Transport Permits
7. Oregon Manford Advisory Committee - Findings, Conclusions and Recommendations on the Transport of Plutonium-Contaminated Nuclear Weapons Wastes through Oregon

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ENERGY CONSERVATION

(Transportation of Radioactive Material)

469.603 Intent to regulate transportation of radioactive material. It is the intention of the Legislative Assembly that the state shall regulate the transportation of radioactive material to the full extent allowed by law and consistent with federal laws and regulations. [1981 c.771 § 1]

469.605 Permit to transport required; application. (1) No person shall ship or transport radioactive material identified by the council pursuant to ORS 469.530 (2) into or within the State of Oregon without first obtaining a permit from the department.

(2) Such permits shall be issued for a period not to exceed one year and shall be valid for all shipments within that period of time unless specifically limited by permit conditions.

(3) Application for a permit under this section shall be made in a form and manner prescribed by the director and may include:

(a) A description of the kind, quantity and radioactivity of the material to be transported;

(b) A description of the route or routes proposed to be taken and the transport schedule;

(c) A description of any mode of transportation; and

(d) Other information required by the director to evaluate the application.

(4) The director shall collect a fee from all applicants for permits under this section in an amount reasonably calculated to provide for the costs of the department of performing the duties of the department under this section and ORS 469.606, and for investigation and prosecution of ORS 469.603. The fee shall be deposited in the Energy Department Account established under ORS 469.611 if federal funds are available to provide for that training. Fees collected under this subsection shall be deposited in the Energy Department Account established under ORS 469.610.

(5) The application demonstrates that the proposed route is safe with all applicable rules observed. 469.603 to 469.611 and 469.592. Note: Section 8, chapter 106, Oregon Laws 1981, provides:

Sec. 8. Notwithstanding any other law, the Department of Energy is authorized to use permit fees collected pursuant to ORS 469.603 (4) for the transportation of radioactive material associated with the Laboratory uranium mill site located on the east side of the site. Such fees may be expended directly for the site. The amount of the General Fund or reimbursement in an amount equal to the amount collected by the Energy Board from the application under subsection (1) of section 7 of this Act.

469.611 Emergency response planning; Health Division as coordinator. Notwithstanding ORS chapter 401:

(1) The director shall coordinate emergency response planning with appropriate agencies of government at the local, state and national levels to assure that the response to a radioactive material transportation accident is swift and appropriate and that damage to the public health, safety and welfare is minimized. This planning shall include the preparation of local, state and national response responsibilities for on-scene response.

(2) The director shall:

(a) Apply for federal funds as available to train, equip and maintain an appropriate response capability at the state and local level;

(b) Request all available training and planning materials;

(3) The Health Division shall be designated by the director as on-scene coordinator for any radiological accident occurring within the State of Oregon. The Health Division shall contact the governing body of each county in which the accident occurs on the route or routes of the proposed shipment to be transported to inform the emergency response training. The Health Division shall insure that all emergency services personnel that receive training and develop proper procedures for identifying and dealing with radiological accidents pending the arrival of the Health Division staff. The Health Division shall certify to the director when training of local agency personnel has been completed. [1981 c.771 § 183.046 (14)]

469.613 Records; inspections. (1) Any person obtaining a permit under ORS 469.605 shall establish and maintain any records, make any reports and provide any information as the compliance with the conditions of the permit or other rules affecting the transportation of radioactive materials and submit the records and information available at the request of the director.

(2) The director may authorize any employee or agent of the director to enter upon, inspect and examine, at reasonable times and in a reasonable manner for the purposes of administration or enforcement of the provisions of ORS 469.605, 469.610, 469.603, 469.592 or rules adopted thereunder, the records and property of persons within this state who have applied for permits under ORS 469.605.

(3) The director shall provide for:

(a) The inspection of each permitted large quantity radioactive material shipment at the point of entry of the shipment into this state as to the quantity, radioactivity and the origin of the quantity radioactive material originating within the state; and

PUBLIC HEALTH AND SAFETY

(b) Inspection of a representative sample of shipments containing material required to bear a radioactive placard required to be displayed by federal regulations. [1981 c.771 § 10]

469.615 Indemnity for claims against state. (1) Indemnity shall be provided by ORS 469.605 to any person obtaining a permit under any claims against the State of Oregon for any release of radioactive material during the transportation for which the permit was issued, for the cost of response to an accident involving the radioactive material for which the permit was issued.

(2) With respect to radioactive materials, the director shall ascertain and certify that insurance coverage required under 42 U.S.C. 2210 is in force and effect at the time the permit is issued under ORS 469.605. [1981 c.771 § 11]

469.617 Report to Legislature; consent. The director shall prepare and submit to the Governor for transmittal to the Legislative Assembly, on or before the beginning of each regular legislative session, a comprehensive report on the transportation of radioactive material in Oregon and provide a comprehensive summary of the state's emergency response capability. The report shall include, but need not be limited to:

(1) A brief description and compilation of any accidents and casualties involving the transportation of radioactive material in Oregon;

(2) An evaluation of the effectiveness of enforcement activities and the degree of compliance with applicable rules;

(3) A summary of outstanding problems confronting the department in administering ORS 469.605, 469.610, 469.603, 469.592 and 469.592;

(4) Such recommendations for additional legislation as the council deems necessary and appropriate. [1981 c.771 § 11]

469.619 Department to make federal regulations available. The department shall maintain and make available to the public a copy of all federal regulations and code provisions referred to in ORS 469.603, 469.610, 469.603, 469.592 and 469.592. [1981 c.771 § 14]

469.621 Advisory committee. The director may establish a committee of local officials appointed citizens to advise the council on radioactive material transportation issues from a local perspective. [1981 c.771 § 17]

OREGON ADMINISTRATIVE RULES  
CHAPTER 345, DIVISION 60 -- ENERGY FACILITY SITING COUNCIL

TRANSPORTATION OF  
RADIOACTIVE MATERIAL

Definitions

- 345-60-001 (1) The definitions set out in ORS 469.300 (1985 Replacement Part) are hereby incorporated as the definitions to be used in interpreting these rules, unless the context requires otherwise or unless a term is specifically defined in this section. Terms not otherwise defined shall be defined as found in 10 CFR 71 and 73 and 49 CFR 171 through 178.
- (2) For the purpose of these rules radioactive material shall be defined as defined in 49 CFR 173.403.
- (3) "Radioactive wastes" are defined as provided by ORS 469.300 (17)
- (4) "Radioactive Material Shipment" include but are not limited to any number of rail cars, truck trailers, automobiles, vans or barges, moved by one or interconnected power sources.
- (5) "Radio pharmaceuticals" are radioactive materials used in the medical testing or treatment of animals or humans.
- (6) "Radioisotopic materials" include any sealed radioactive source fastened or contained in any instrument used for the examination of the macroscopic structure of materials by nondestructive methods using the source.
- (7) "Well-logging radioactive materials" are radioactive sources used in measuring devices or tools used to obtain information about wells or the adjacent soil or geologic formations.

Applicability and Scope

- 345-60-603 (1) These rules apply to the transportation of radioactive material in the State of Oregon.
- (2) Transport by or under the direction of an agency of the federal government in federal vehicles is exempt. This section does not exempt shipments:
- (a) because federal physical security requirements are applicable,
- (b) because they originate from or are destined for a federal facility, or
- (c) because the material is owned by the federal government.
- (3) In accordance with ORS 469.603 and 469.607, it is the purpose of these rules to be consistent with Federal Department of Transportation and Nuclear Regulatory Commission rules.

Permits and Fees

- 345-60-004 (1) Persons shall obtain an Oregon Radioactive Materials Transport permit from the Oregon Department of Energy prior to transport in the State of Oregon of the following radioactive material:
- (a) Radioactive material which requires a placard on the vehicle according to 49 CFR 172, Subpart F;
- (b) Radioactive waste of any kind originating from any nuclear power plant or nuclear installation or any person licensed by the Health Division pursuant to ORS 453.655, the Nuclear Regulatory Commission or an agreement state established pursuant to 42 U.S.C., 2021.

- (2) Applications for permits shall be made to the Oregon Department of Energy, 625 Marion NE, Salem, OR 97310 by May 1 of each year or as soon as possible prior to the date of transport. Permits submitted by May 1 will be issued by June 30 of each year.
- (3) Permit application forms will be available from the Oregon Department of Energy, 625 Marion NE, Salem, OR 97310 and shall include:
- (a) Name, address, telephone numbers of the carrier that will be answered at any time for emergencies and a statement that the carrier has a 24 hour telephone number for all shippers;
- (b) A general description of the material intended for transport which should include the type of material (see ORS 345-60-004(1)) to be transported, number of shipments and estimated radioactivity per shipment (precise information is not necessary if unavailable);
- (c) A description of the mode of transportation, route or routes to be taken and approximate schedule (precise information is unnecessary if unavailable);
- (d) A description of any violations by the applicant of any local, state or federal regulations within the past year related to radioactive material transportation. Copies of the most recent Federal and state Motor Carrier Safety and/or Hazardous Material Survey reports are sufficient to satisfy this requirement;
- (e) A commitment to comply with the rules of Chapter 345, Division 60;
- (4) Temporary permits are available at Oregon ports of entry. (Ports of entry are open all hours except from 4:00 p.m. December 24th to 12:00 a.m. December 26th and from 4:00 p.m. December 31st to 12:01 a.m. January 2nd.) Ports of entry are located on I-84 at Farewell Bend; US 97 at Klamath Falls; and I-5 at Ashland and Woodburn.
- (5) Fees:
- (a) Except as provided in b through e of this subpart, a \$70 fee shall be submitted to the Department of Energy for each placarded shipment that is anticipated in the next year. For anticipated placarded shipments in the next year, fees may be adjusted to reflect over or under payment in the prior year. Alternatively, fees may be paid each 3 months for placarded shipments actually made during the past quarter.
- (b) Placarded shipments of well logging material, radiographic material, and radio pharmaceuticals shall submit an annual fee of \$500 or \$70 per shipment whichever is less.
- (c) No additional fee will be charged for shipments which:
- (A) the cargo is transferred from a previous vehicle for which a fee has been assessed; or
- (B) the vehicle has a number of stops before unloading the radioactive cargo for which a fee has been assessed.
- (d) Radioactive materials carriers may petition for an alternative fee schedule. The Administrator, Siting and Regulation, may grant such a request based on evaluation of:
- (A) whether the carrier demonstrates that the applicable fee schedule severely impacts the cost of the product;
- (B) there is no reasonable alternative for transporting the material;
- (C) the shipment of the material involves one source and frequent movement between sites where the source is used;

(D) the carrier is a public university or research organization using the material for public benefit.

(e) There will be a \$100 fee applied to each shipment traveling under a temporary permit described under part 4 unless otherwise authorized by the Oregon Department of Energy.

(6) In accordance with ORS 469.605(5), a permit will be issued by the Administrator of Siting and Regulation of the Oregon Department of Energy only if the applicant's record of violations of Federal and state radioactive material transport requirements indicates that its practices have not created an undue risk to the public health and safety.

(7) Once issued, permits will remain valid for the remainder of the permit year (until June 15th).

(8) Copies of the carrier's permit shall accompany shipments of radioactive material transported by highway. Permits for other shipments must be available at company headquarters and readily available for reference if requested.

(9) Permits may be conditioned consistent with Federal requirements to include hours of movement, communications, routes, escorts, speed limits, checkpoints and training.

(10) Permits may be revoked or suspended for failure to comply with these rules. Reinstatement of a permit will require submission of a new application and a demonstration that corrective actions have been taken to minimize the likelihood of a recurrence of the violation(s).

#### Advance Notification

345-60-005 (1) Advance notification and information to be provided to Oregon shall be as required by 10 CFR 71.97 and 10 CFR 71.37(f).

(2) The Oregon Department of Energy (503-378-4040, 625 Marlon NE, Salem, OR 97310) is the Governor's designee to receive advance notifications.

#### Inspections

345-60-007 Shipments under these rules may be inspected by the State of Oregon, or its agents, for compliance with applicable rules and regulations. All spent nuclear reactor fuel and highway route controlled quantity shipments shall be inspected by the state, or its officers, and samplings of other shipments may be inspected.

#### Vehicles, Driver, Equipment

345-60-015 All aspects of vehicles, drivers and equipment shall be in accordance with Oregon Administrative Rules, Chapter 860, Division 65. (These Public Utility Commissioner rules reference the requirements of the Code of Federal Regulation 49 CFR 390 through 397).

#### Packaging, Labeling, and Documentation

345-60-025 Packaging, labeling, shipment documentation and all other aspects of transporting any radioactive materials shall be in accordance with the Code of Federal Regulations 10 CFR 71 and 73 and 49 CFR 171 through 179.

#### Reporting and Emergency Response

345-60-030 The carrier of any radioactive material shall immediately report, by means of the Oregon Accident Response System (within Oregon call 1-800-452-0311, outside Oregon call 1-503-378-4124):

(1) Any vehicle accidents regardless of whether radioactive material has been damaged or dispersed;

(2) Loss of any radioactive material; and

(3) Tampering with or unplanned delay of any shipments.

#### Routes

345-60-040 (1) The routing requirements in section (2) of this rule shall apply only to spent nuclear reactor fuel and highway route controlled shipments.

(2) In Oregon spent nuclear reactor fuel shall be routed in accordance with 10 CFR 73.37 and highway route controlled shipments shall be routed in accordance with 49 CFR 171.825. These materials shall be transported on Interstate highways or by railroads. Access to interstate highways shall be by the shortest, safe route.

#### Financial Assurance

345-60-045 (1) Spent nuclear reactor fuel shall be insured as required by the Price-Anderson Act.

(2) Carriers of radioactive materials shall comply with applicable Federal and Oregon insurance requirements (see Oregon Administrative Rules, Chapter 860, Division 65; Public Utility Commission rules and Title 49 Code of Federal Regulations, Part 387).

#### Weather and Road Conditions

345-60-050 Vehicles shall avoid movement during a road condition advisory of the Oregon State Highway Division unless vehicles have the required traction tires or devices specified in OAR Chapter 734, Division 17.

TU:18

0659R(06 FZ)

04/21/87

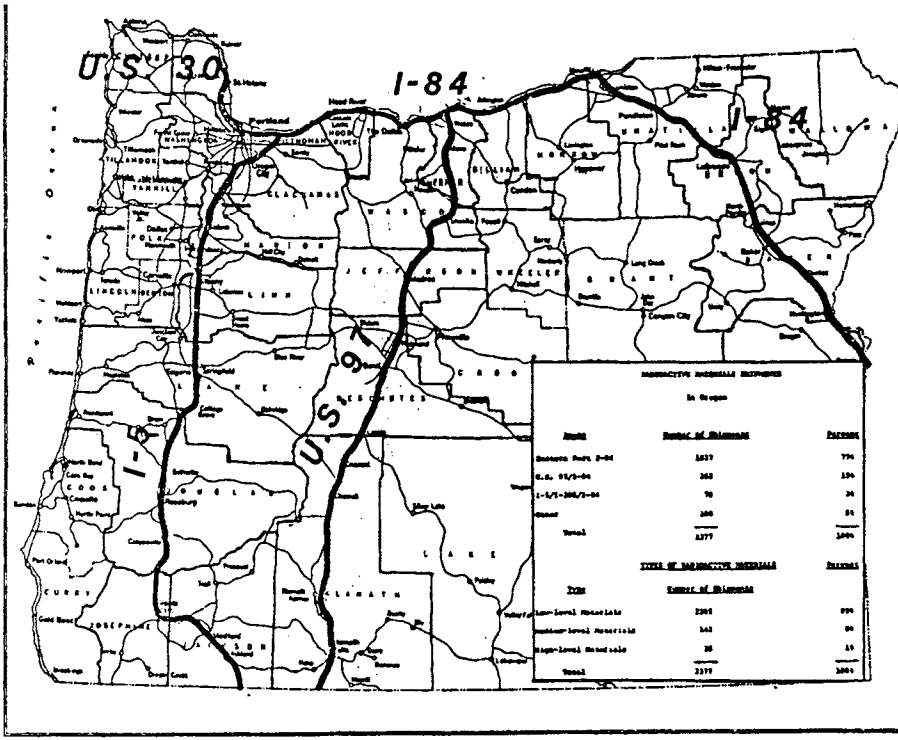


TABLE I  
RADIOACTIVE MATERIAL SHIPMENTS BY ROUTE

1987	I-84 Farwell Bend		U.S.-97 Klamath Falls		I-5 Ashland		TOTAL
January	28	5	0	33			33
February	28	4	1	33			33
March	45	7	1	53			53
April	37	0	0	37			37
May	43	7	0	50			50
June	43	0	2	45			45
July	42	0	0	42			42
August	68	0	0	64			64
September	41	0	1	42			42
October	70	0	4	74			74
November	57	0	0	57			57
December	118	0	0	118			118
Total	620	23	10	653			653
Percentage	95	4	2	100			100

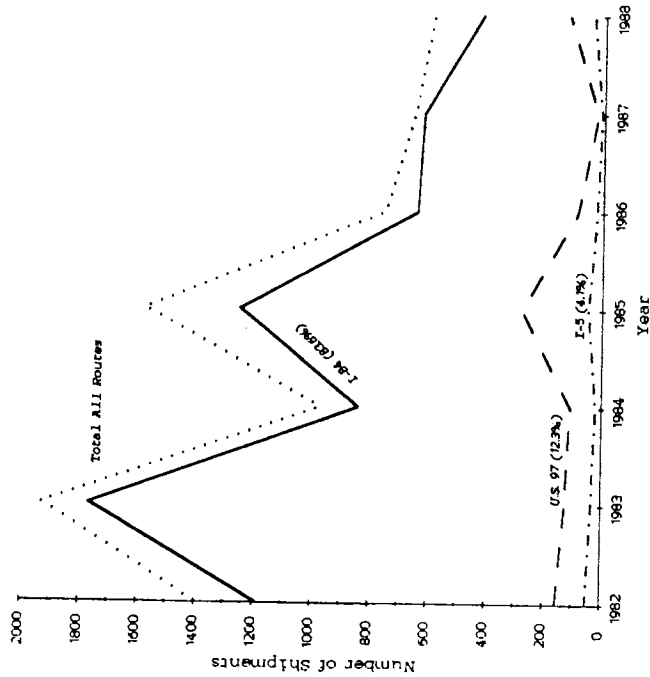
  

1988	
Month	Shipments
January	3
February	4
March	8
April	11
May	13
June	14
July	14
August	8
September	10
October	19
November	7
December	18
<b>Total</b>	<b>125</b>
Percentage	21

\*December totals were not available when this report was written. Values are estimates.

DS-S:ml  
2276L(d2)  
01/18/89

### Shipments of Radioactive Materials In or Through Oregon



Low-level waste shipments will continue to decline. Disposal sites will be built in other regions of the country. Eventually, only waste from Oregon, Washington, Idaho, Montana, Utah, Alaska and Hawaii will be accepted at Hanford.

TABLE 2

### 1987-88 OREGON RADIOACTIVE MATERIAL TRANSPORT PERMITTEES

Carrier Permitted
A. J. Metler
ABF Freight System
AMR Freight
Acme Truck Line
Atlantic Coast
Barnham
C. E. H. Nationwide
CF Arrowhead
Chem-Nuclear Systems, Inc.
Circle Van
Coleman Company, Inc.
Consolidated Freightways
Direct Transport
East West Trucking
Eck Miller
Hacke Trucking
Hatfield
Hittman Transport
International Transport
Kindrick Trucking Co.
Ligon Nationwide
McGill Specialized Carriers
Missouri/Nebraska Express
Motor West
MOI Organization
Neutron
Northwest Transport
Orlando Cartage
Overnight Transport
PIE Nationwide
Priority Transport Services
RSO
Ranger Nationwide
Ray Tach
Roberts Express
Rose May
Schlumberger
Thone Bros.
Trans American
Transcon Lines
Tri-State Motor Transit
U.S. Ecology
Universal
Wells
Wells Cargo
Western Atlas
Western State Truck Lines
Westway Motor Freight

## DEFENSE WASTE CLEANUP:

### A PROPOSAL FOR A NATIONAL SOLUTION

Governor Booth Gardner  
State of Washington

Governor Richard F. Celeste  
State of Ohio

Governor Cecil D. Andrus  
State of Idaho

Governor Neil Goldschmidt  
State of Oregon

Governor Garry E. Carruthers  
State of New Mexico

Governor Roy Romer  
State of Colorado

Governor Ned Ray McWhorter  
State of Tennessee

Governor Bob Miller  
State of Nevada

Governor Carroll A. Campbell Jr.  
State of South Carolina

Governor Wallace Wilkinson  
State of Kentucky

APRIL 1989

### I. Introduction

Over the past 45 years, the United States has developed, produced and tested nuclear weapons at sites in 12 states. During this period, massive quantities of radioactive and chemical wastes have been allowed to accumulate at these sites. Many past disposal practices were inadequate. Aging temporary storage facilities have failed. As a result, these wastes threaten the environment and the public health and safety.

As the Governors of states affected by nuclear weapons research and production facilities, we have joined forces to serve off that threat. We are pursuing the expeditious retrieval, safe cleanup and permanent disposal of these radioactive and chemical wastes. Our goal is to achieve this cleanup at all sites within 30 years.

The defense waste problem is a national problem and a national responsibility. It involves U.S. Departments of Energy (USDOE) defense facilities in 12 states. It will take decades and billions of dollars to resolve. We strongly believe that the long-term answer to each site's problems ultimately lies in a national effort to clean up all USDOE defense facilities.

Accordingly, we are calling for prompt and decisive action by the Administration and the Congress to create an effective, long-term cleanup program. It must cover the cleanup and permanent disposal of radioactive and chemical wastes at all USDOE defense facilities.

### II. The Need for a National Cleanup Program

Recent reports by USDOE and the General Accounting Office (GAO) document serious waste contamination problems at virtually every USDOE defense facility. Cases of extensive soil and groundwater contamination are common. In some cases, groundwater contamination is thousands of times above federal drinking water standards. At two installations, soil contamination levels hundreds to thousands of times that of background levels have been reported. Further, the full extent of contamination at USDOE facilities remains unknown. New problems continue to come to light.

In July 1988, USDOE told Congress that defense waste cleanup could cost as much as \$1.0 billion over the next 50 years. The GAO feels the cost may be as high as \$130 billion. Despite these cost estimates, only about \$975 million was appropriated in FY 1989. And, the major portion of these funds is for continued management of wastes in temporary storage -- and not for cleanup and permanent disposal.

USDOE has made progress in starting cleanup at a number of facilities. But, it remains uncertain whether this work will be completed before more serious and permanent harm is done. There is no firm federal commitment to the cleanup of all USDOE sites. Schedules have slipped repeatedly. Generally, USDOE has no milestones or deadlines for completing cleanup work. Funding is far less than needed. Application and enforcement of federal and state laws and regulations are questioned. The role of affected states and tribes is not clear. Public confidence in USDOE's ability to handle these wastes safely has been seriously eroded.



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The longer cleanup is delayed, the more costly and dangerous it will be. Hundreds of millions of dollars will continue to be spent on temporary storage. Aging facilities will continue to fail. Waste forms now stable may not remain so. Wastes will continue to spread through the environment, contaminating more soil and water.

The time has come for the federal government to resolve the waste problem at all USDOE sites. It is time for a firm and substantive federal commitment. These wastes have been produced as part of the nation's defense program. Their cleanup and disposal are a national obligation.

The magnitude of waste cleanup and disposal problems dictates the need for a national effort to clean up all USDOE sites. A credible cleanup program must ensure that radioactive and chemical wastes are kept away from people and the environment for as long as the wastes are dangerous. The program must include:

1. A detailed schedule and national priority system;
2. Sufficient long-term, stable funding to ensure the cleanup and disposal of existing and future wastes;
3. An effective regulatory structure, including both state and independent oversight and enforcement capabilities;
4. The means to build and maintain public confidence;
5. The development of advanced technologies to ensure safe, thorough and cost effective waste cleanup and disposal;
6. A long-term waste disposal program;
7. Responsible participation by and funding of affected states;
8. Increased attention to health impact monitoring and analyses; and
9. A commitment to make use of existing work forces and to ensure their safety.

### III. Key Elements of a National Program

Congress must take action now to ensure the safe and expeditious cleanup of radioactive, hazardous, and mixed wastes at all USDOE facilities. The program must address these points:

#### A. Schedules and Priorities

The cleanup of radioactive and chemical wastes must be made as much a part of USDOE's agenda as the production of weapons materials. There must be a firm commitment to complete the cleanup and disposal within a reasonable and specified period of time. Schedules for most sites remain uncertain. Without a

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firm schedule, there is no assurance that the critical cleanup work will be completed in a timely manner -- if at all. Without a schedule, there is no means by which to rank priorities, measure performance, determine funding needs, or allocate resources.

The program must set firm milestones and deadlines to complete the cleanup. Federal environmental laws provide a precedent for setting a compliance deadline. We feel that a commitment to clean up all USDOE facilities within 30 years is both essential and achievable.

The program must also include a national priority system. The system must ensure all of the following:

1. The earliest possible cleanup and disposal of wastes posing immediate public health and environmental threats;
2. The cleanup and disposal of any other wastes before the public health and environment is put at risk; and
3. Full and complete compliance with federal and state regulatory requirements, including milestones and deadlines contained in adopted site cleanup agreements, action plans or consent orders.

The system must consider public health and safety, environmental factors, regulatory requirements, and the nature and volume of wastes. It must also take into account the complexities of cleanup and the costs of deferring action. Finally, needed cleanup work must not be disrupted or delayed simply because production activities at a site have been reduced or discontinued.

The program must provide for the schedule adjustments needed to deal with unforeseen problems. USDOE must work with federal and state regulatory agencies to prepare and implement detailed work plans. The plans must be consistent with national priorities and deadlines. USDOE should have the flexibility in working with EPA and the affected states to adjust schedules and reallocate resources as long as such action will not extend cleanup work beyond the deadline. USDOE should keep Congress fully apprised of its progress and any major changes in work schedules and plans.

#### B. Funding

The program must be able to assure adequate and stable long-term funding for waste cleanup and disposal. An effective cleanup program will require a Congressional commitment to substantially increase funding levels for cleanup. The competition for funds between production and cleanup activities must end. Funding priorities for cleanup must be driven by the risks posed by waste problems and not the need to maintain production operations.

A fund to finance cleanup and disposal work should be considered. Direct appropriations to the fund should be sufficient to ensure the cleanup of existing wastes within established schedules and priorities. The proper handling, storage,

3

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 and disposal of wastes generated in the future should be on a "pay-as-you-go" basis. Agencies responsible for the wastes should be required to make annual payments to the trust fund.

Payments to the fund must be sufficient to cover USDOE cleanup costs. The Agency (EPA) affected states and Indian tribes. The distribution of funds must be based on national cleanup priorities and on work schedules for completing cleanup activities by established deadlines.

#### C. Compliance with Federal and State Regulations

For over 40 years, waste handling, storage, and disposal have been largely exempt from any independent oversight. In a number of instances, poor waste management and disposal practices have knowingly been tolerated. These practices have contributed significantly to waste cleanup and contamination problems. USDOE has acknowledged these past problems. It has stated that it will comply with state and federal regulations in the future. But, the situation remains uncertain at best.

The federal government has actively challenged the application and enforcement of state Resource Conservation and Recovery Act (RCRA) programs at Colorado's Rocky Mountain Arsenal and USDOE facilities. States have been forced to constantly defend their regulatory authority and their interest in ensuring an effective cleanup of hazardous wastes at federal facilities. USDOE also continues to challenge EPA's authority to enforce federal regulations and standards. These challenges raise grave doubts that the federal government will effectively regulate itself.

The program must set up a clear regulatory framework for the cleanup. State and federal regulatory programs are key to an effective and credible cleanup process. These regulatory programs are intended to provide the independent authority needed to ensure that existing waste problems are fully evaluated and that corrective actions are both timely and appropriate. They are also intended to prevent new problems in the future.

The program must direct that all cleanup and disposal work strictly comply with applicable federal and state laws and regulations. EPA and affected states must be given the clear authority and direction to issue orders and ensure compliance with approved cleanup plans and schedules.

The role of state regulators must be strengthened. This is especially true where a state has authority to implement federal laws such as RCRA. The implementation of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) at USDOE facilities must not override or replace the implementation of RCRA for hazardous and mixed waste sites. RCRA and CERCLA laws need to be clarified in order to reassert Congressional intent that the states have the clear authority to implement and enforce RCRA-based hazardous waste laws at federal facilities. Likewise, the program must uphold a state's delegated authority to implement and enforce other federal environmental regulations.

Affected states are greatly concerned about the current lack of progress in the high-level nuclear waste disposal program and uncertainty about the scheduled availability and capacity of the proposed facilities. Although USDOE's current schedule for start-up of the high-level waste repository in 2005, there is little opportunity that schedule can be met. Similarly, technical concerns and political problems associated with the Waste Isolation Pilot Plant (WIPP) continue to plague federal transuranic waste disposal plans critical to cleanup of USDOE's defense facilities. Thus, problems and delays in USDOE's efforts to develop both programs continue.

If progress is to be made in solving the nation's waste management problems, we must critically appraise the existing program and USDOE's program management and organizational structure, including recommended actions for correcting identified problems. A realistic and achievable schedule must be developed for long-term waste management and disposal that includes federal plans for disposal of all radioactive wastes (defense and commercial) requiring long-term geologic disposal. Once the revised schedule has been developed and approved, these activities and milestones must be given national priority and high-level commitment to their successful completion. In the near-term, particular emphasis should be placed on opening the Waste Isolation Pilot Plant (WIPP).

#### G. Responsible Participation By Affected States

Many of the issues associated with defense waste cleanup involve a variety of sensitive national security considerations. Nevertheless, involvement of the affected states at the critical policy level is necessary to achieving a responsible national cleanup program. Such involvement will enable USDOE officials to better understand state laws impacting a national program, and allow states to identify funding requirements necessary for the cleanup effort.

Toward these goals, the USDOE should establish an advisory group composed of a representative from each affected state. Each state member should be a personal representative of the Governor who can obtain the appropriate security clearance allowing for candid discussion regarding the full range of cleanup issues, including risk assessments and the establishment of priorities. The combined gubernatorial status and appropriate security clearance will enable the affected states advisory group to contribute toward resolution of the national problem and activate necessary follow-up actions at the state level.

An example of an advisory group is the State Liaison Officer designations currently maintained by the Nuclear Regulatory Commission.

#### H. Increased Attention to Health Impact Analyses

USDOE facilities throughout the country have experienced releases of radioactive and hazardous wastes for several decades. Recently, citizens near the USDOE plants have become increasingly concerned with historic as well as ongoing emissions and discharges and the potential health impacts associated with such releases. USDOE needs to address these health concerns by providing increased resources to federal agencies (CDC, NIH, NIOSH, or others) and to state environmental and health agencies to provide for epidemiologic studies, health risk

Finally, since federal and state regulatory programs are critical parts of the cleanup process, the program must ensure that both EPA and the states have adequate funding for regulatory functions.

#### D. Public Confidence

The magnitude, history, and nature of the nuclear weapons waste problems make public confidence and acceptance crucial to cleanup success. The public must be fully aware of the problem. People must be convinced that cleanup solutions will ensure a safe and healthy environment.

To win public confidence, the decision-making and review processes must be open to the public. People must have the opportunity to understand the issues. They must have the chance to influence decisions relating to cleanup, transportation, and disposal of wastes.

In this effort, the affected states and Indian tribes should play a key role in public involvement and education programs. The cleanup program must provide for and fund state and tribal activities such as:

1. Technical review of cleanup plans and methods;
2. Transportation planning and emergency response;
3. Environmental monitoring of waste sites and cleanup activities; and
4. Public information and involvement programs.

#### E. Development of Cleanup Technology

The diversity of environmental conditions, coupled with the variety of waste forms, types, and volumes found at USDOE sites, present a formidable challenge to an effective cleanup program. We need to ensure the safest, most thorough, and cost efficient cleanup and disposal effort possible. We must not limit our options solely to technology currently available. The program must provide for the continuing research and development of advanced cleanup and disposal technology.

#### F. Long-term Waste Disposal Program

Cleanup efforts at USDOE's defense facilities cannot effectively be completed without the timely development and availability of a long-term waste management and disposal program. Since 1953, when the Atomic Energy Commission first addressed the problem of waste disposal, the history of nuclear waste management in the U.S. has been one of inattention during the 1950s and 1960s followed by repeated false starts, technical dead ends, and program failures. The Nuclear Waste Policy Act of 1982 was viewed as a major achievement in the evolution of federal waste management policy. Yet, seven years after its enactment, the federal waste management program is beset with problems, repeated schedule slippages, and declining confidence that the program would be ultimately successful.

assessments, exposure assessments, birth defects and/or tumor registries, or other health initiatives that may be needed for specific sites. Such health initiatives should have a substantial role for states in the methodologic design phase and should provide extensive opportunities for qualified states to conduct pertinent elements of such initiatives at sites in their locales.

#### I. Utilization of Existing Labor Resources

Cleanup efforts should make maximum use of the knowledge and expertise of the current labor force at USDOE facilities. Workers should be well trained, certified, and medically-monitored throughout the cleanup process.

### IV. Conclusion

For decades, radioactive and hazardous chemical wastes have been allowed to accumulate at USDOE defense facilities across the nation. Today, as the result of inadequate past disposal practices and failing temporary storage facilities, these wastes pose a serious threat to the public health and safety and the environment.

While USDOE has begun to acknowledge and correct the problems posed by the wastes, the future is uncertain. The cleanup and disposal of wastes will cost billions of dollars and require decades to complete. Yet, no firm schedule exists and funding lags far behind requirements for an effective cleanup effort.

If we are to ensure a safe and healthy environment for the citizens of the nation, decisive action is essential. It is time for the federal government to fulfill its obligation to ensure the safe and permanent disposal of these wastes. We urge the Administration and the Congress to act quickly in establishing an effective and credible cleanup program for USDOE facilities.

Appendix A  
**U.S. Department of Energy  
 Research, Testing and Production Facilities**

1. California
  - Lawrence Livermore National Laboratory, Livermore, CA
  - Sandia National Laboratories, Livermore, CA
2. Colorado
  - Rocky Flats Plant, Golden, CO
3. Florida
  - Pinellas Plant, Largo, FL
4. Idaho
  - Idaho National Engineering Laboratory, Idaho Falls, ID
5. Kentucky
  - Paducah Gaseous Diffusion Plant, Paducah, KY
6. Missouri
  - Kansas City Plant, Kansas City, MO
7. Nevada
  - Nevada Test Site, Las Vegas, NV
8. New Mexico
  - Los Alamos National Laboratory, Los Alamos, NM
  - Sandia National Laboratories, Albuquerque, NM
9. Ohio
  - Ahabakula (RMT), Ahabakula, OH
  - Ford Materials Production Center, Fernald, OH
  - Mound Facility, Miamisburg, OH
  - Portsmouth Gaseous Diffusion Plant, Piquette, OH
10. South Carolina
  - Savannah River Plant, Aiken, SC
11. Tennessee
  - Oak Ridge National Laboratory, Oak Ridge, TN
  - Oak Ridge Gaseous Diffusion Plant, Oak Ridge, TN
  - Y-12 Plant, Oak Ridge, TN
12. Texas
  - Pantex Plant, Amarillo, TX
13. Washington
  - Hanford Site, Richland, WA

April 14, 1989

The Honorable James D. Watkins  
 Secretary of Energy  
 Personnel Building  
 1000 Independence Avenue, S.W.  
 Washington, DC 20585

Dear Admiral Watkins:

We are writing you with regard to a matter of vital concern to our nation and the nation: the management, cleanup and permanent disposal of radioactive and hazardous chemical wastes at Department of Energy (DOE) defense and research facilities.

As governors with DOE nuclear facilities within or adjacent to our state's boundaries, we are keenly aware of the grave risks these wastes pose to public health and the environment. For some months, we have individually or in small groups voiced our concern, frustration, and anger over the lack of progress in resolving the waste problems. Today, we speak with a unified voice.

The cleanup and disposal of DOE's defense wastes have been deferred too long. The immediate and long-term risks posed by these wastes to the health and safety of our people and the integrity of our environment make further delay unacceptable. The time has come to resolve this critical issue. The defense waste problem is national in its scope and severity. Its resolution is a national obligation. It must also be a national priority.


We are calling for decisive federal action to establish a comprehensive national program for the cleanup of all DOE defense and research facilities. We are also calling for the stable long-term funding required to support such a program. Moreover, we are committing ourselves to work cooperatively with the Administration and Congress to secure this program and the needed funding. The attached policy paper discusses the elements we believe are essential for a credible and effective cleanup effort.

We are pleased that you have made the cleanup of DOE facilities one of your top priorities and that you will be personally involved in waste management and cleanup programs. Such high-level interest and involvement is critical to an

The Honorable James D. Watkins  
Secretary of Energy  
April 14, 1989  
Page 2

effective effort. We are anxious to work closely with you as you develop your five-year cleanup program. We hope that the program information contained in our policy paper will receive full and substantive consideration and that the same will be afforded an opportunity to participate early in your planning process.


Sincerely,

  
Booth Gardner  
Governor of Washington

  
Roy McCarver  
Governor of Colorado


  
Robert J. Miller  
Governor of Nevada


  
Ned McWhorter  
Governor of Tennessee

  
Richard F. Celeste  
Governor of Ohio

  
Cecil Andrus  
Governor of Idaho

  
Bill Williams  
Governor of Oregon

  
Wallace G. Wilkinson  
Governor of Kentucky

  
Kirby Craftethere  
Governor of New Mexico

  
Carroll A. Campbell, Jr.  
Governor of North Carolina

**OREGON**  
**HANFORD ADVISORY COMMITTEE**

Findings, Conclusions and  
Recommendations on the Transport of  
Plutonium-Contaminated Nuclear Weapons Wastes  
through Oregon

October 1988

OREGON'S HANFORD ADVISORY COMMITTEE  
 FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS  
 ON THE TRANSPORT OF NUCLEAR WEAPONS WASTES THROUGH OREGON

BACKGROUND

The U.S. Department of Energy (US DOE) Hanford facilities produce plutonium for nuclear weapons. In that process some industrial materials are tainted with small amounts of plutonium and other radioactive contaminants. This material is called transuranic wastes or TRU.

US DOE now is ready to begin cleanup of Hanford's nuclear weapons wastes. US DOE will truck some TRU wastes to a repository near Carlsbad, New Mexico. That transport campaign is now scheduled to start in March 1990. It will last 25 years or more.

The route through Oregon will be Interstates 82 and 84 East. It crosses portions of the Umatilla Indian Reservation and Umatilla, Union, Baker, and Malheur Counties.

The 1987 Oregon Legislature created the Hanford Waste Board and the Hanford Advisory Committee (HAC). The Board is to recommend policy to the Governor and Legislature on Hanford waste issues. The HAC is to advise the Board on how these policies should evolve through active grassroots action.

Gov. Goldschmidt named 18 persons to the HAC. Twelve are from the four route counties and the Confederated Tribes of the Umatilla Indian Reservation (The Tribes). The other six represent special interests, industry, and environmental groups. The Governor charged HAC to "advise the Hanford Waste Board on grassroots opinions, attitudes, and ideas about nuclear weapons waste transport." He told HAC to give the Board "candid, credible, and straightforward transport safety recommendations."

-2-

In May 1988 the HAC toured Hanford. HAC met in Pendleton for a full-day public session on TRU waste and transport issues. In June, the HAC met again for a full day in LaGrande. Members dealt with transport and accident prevention issues.

In July local HAC members and staff from the Oregon Department of Energy (ODOE) and US DOE hosted eight meetings in route counties. The meetings were to gather public comments and concerns. Briefings for local officials were in the afternoons; information meetings with the public were in the evenings. These were in Pendleton, LaGrande, Baker, and Ontario. About 200 people took part. There was broad newspaper and broadcast media coverage before and after the meetings.

In August, the HAC worked on draft accident prevention recommendations at a day-long public meeting in Baker. In September, the HAC met in Ontario to discuss and draft emergency response recommendations. The HAC also adopted these findings, conclusions, and recommendations.

Nearly all of the HAC members took part in all of the HAC work sessions. Two dozen local persons spoke to the HAC about their concerns. The news media covered all of the HAC meetings.

FINDINGS

The HAC finds:

1. Public support for Hanford cleanup is broad, although cleanup requires some waste transport through Oregon.
2. US DOE and Oregon agencies have taken reasonable actions to ensure the safe transport of radioactive waste. They intend to insure that future TRU waste transport will have a high level of safety and minimal risks. US DOE and Oregon agencies know the importance of public confidence in transport safety.

3. There is a good deal of skepticism in the route communities that the shipments are sufficiently safe.
4. Emergency coverage for critical first response functions is not complete in many parts of the transport route. In other areas, the coverage is inadequate.

CONCLUSIONS

The HAC concludes:

1. The risks of TRU waste transport are far less severe than the risks of leaving these wastes in temporary storage at Hanford.
2. TRU waste transport through Oregon can be done with a high level of safety and at minimal risk. An accident-free program cannot be guaranteed.
3. Public perceptions about TRU waste transport safety are valid; some are realistic and some are not. Both types of concerns should be addressed by safety improvements or public education.
4. Funding is needed for a regional hazardous materials response team to complete emergency response coverage along the transport route.
5. US DOE and Oregon agencies should take further reasonable actions to enhance transport safety and public confidence in the safety of these shipments.

3.1-2  
5.2-1  
5.2-2  
7.9-2-9  
7.12.9-1  
7.12.9-2  
7.12.9-5  
7.12.9-6  
7.12.9-11

GENERAL RECOMMENDATIONS

Long-Term Safety and Public Confidence

TRU waste transport safety standards, systems, and programs must remain effective throughout the entire shipping campaign. The HAC recommends:

1. US DOE, Oregon agencies, the Tribes, and local governments should develop and maintain quality assurance programs for all aspects of accident prevention and emergency preparedness programs. Such actions will ensure these programs remain effective throughout the transport campaign.
2. US DOE, Oregon agencies, the Tribes, and local governments should continue aggressive education and public involvement programs throughout the transport campaign.

Costs

The risks of TRU waste accidents are being imposed on local, state, and Tribal governments by US DOE. Therefore, the costs of accident prevention, emergency preparedness and response and public information must be borne by US DOE. The HAC recommends that Oregon request federal funding for all local, state, and Tribal costs related to these shipments. Where the costs are part of broader programs, US DOE should pay its fair share.

7.9.1.25  
7.12.9-6  
7.12.9-11  
8-5

RECOMMENDATIONS  
ON ACCIDENT PREVENTION

Shipping Casks

The shipping casks for TRU wastes must withstand realistic transport accidents without releasing their contents. The IAC believes that a design certified by the Nuclear Regulatory Commission (NRC) can achieve this objective. However, the IAC recommends:

1. If flaws are found in the cask design, the design should be changed and tested again or analyzed again.
2. The results of the full-scale tests should be extrapolated to the failure points to determine the margin to failure.
3. The public must be confident that casks will withstand potential transport accidents. The design standards, tests, and test results should be bold in terms that are easy to understand.
4. All TRU waste casks should be built under NRC's stringent quality assurance program for spent nuclear fuel casks. This will ensure that TRU casks meet design requirements.
5. Before each shipment, US DOE should use all appropriate non-destructive testing techniques to inspect cask features that prevent releases (such as the seals). Casks should be inspected for compliance with design requirements. Features that do not comply should be replaced.

Placarding

These shipments must be placarded to meet U.S. Department of Transportation (USDOT) requirements. Further, the IAC recommends:

1. The placards should be reflective. They should be visible at night when lights are pointed at them.

7.3.1.1-2  
7.3.1.1-20  
7.3.1.1-25

7.3.1-1  
7.3.2.1-1

2. The placards and the printing on them should be fire resistant.

Truck Safety/Inspections

The trucks that carry the wastes must be in good running order to enhance safety. The IAC recommends:

1. All shipments should be thoroughly inspected before leaving Hanford. These inspections should cover all safety features and aspects of the truck, driver, and the cargo. The IAC endorses the Pacific States Agreement to work toward a thorough inspection program.
2. Oregon agencies should monitor the inspection program to ensure it is thorough and aggressive.
3. There should be periodic and thorough safety audits of the carrier's waste transport operation.
4. The carrier should have a "satisfactory" safety fitness rating from USDOT.

Drivers

Drivers must have a proven record of safe driving. Further, they must show a strong commitment to transporting these wastes safely. The IAC recommends:

1. Drivers should have several years of preventable accident-free driving on their records. This experience should be with large trucks. Some experience should be on mountain roads and in bad weather.
2. The drivers' records should show commitments to obey speed limits. Further, special efforts should be taken to ensure the speed limit is obeyed. This may include paying the drivers by the hour to remove any incentive for speeding. It may include speed governors or electronic monitors in the trucks. If the latter are used, the results should be evaluated after each trip. Records should be kept for several years.

7.3.1-1

7.3.2.1-1  
7.3.2.1-6

7.3.2.1-6



3. The drivers should be tested for substance use that would impair their driving abilities. Testing should be before hiring and randomly during employment. Evaluations of drivers for drug or alcohol impairment should be made before each shipment.

4. Drivers should be thoroughly acquainted with the route before their first run. Oregon agencies should identify hazardous areas along the route.

Weather and Road Restrictions

These shipments must not be made when severe weather or road conditions threaten a safe trip. The HAC recommends:

- 1. Shipments should not leave Hanford when weather or road conditions are severe or are expected to be hazardous.
- 2. Shipments should stop or turn back when local weather or road conditions are severe or are expected to be hazardous.
- 3. Safe parking areas should be designated for use if weather or road conditions have made or will make waste transport unsafe.
- 4. Criteria should be developed for safe parking elsewhere along the route if designated areas cannot be used.

Schedules

Shipment schedules must be set with safety as the prime concern. The HAC recommends:

- 1. Winter travel poses the greatest travel hazards. US DOE should evaluate whether the shipping schedules can be adjusted to avoid likely times of severe winter weather.
- 2. US DOE should evaluate whether shipments can be made in tandem or in small convoys to increase safety. This also would reduce the burden on state, Tribal and local governments.

7.3.2.1-6  
7.3.3.1-4

7.3.3.1-5

7.3.2.1-1  
7.3.2.1-6  
7.3.3.1-5  
7.3.4-1

Shipment Notice/Information

Oregon State Police (OSP) and other appropriate state agencies, and local officials must have ready access to advance notice or status information on shipments. Notice may be needed to arrange inspections, impose weather or road restrictions, or heighten emergency preparedness. The HAC recommends:

- 1. US DOE should set up an advance notice and current information system with the State (OSP and other appropriate state agencies).
- 2. When shipments are infrequent, the State should notify the counties and the Tribes of each shipment.
- 3. When shipments become routine, the State should provide the counties and the Tribes with six month updates of shipping schedules.
- 4. The counties and the Tribes should relay this information to their local emergency response groups.
- 5. The State should provide current information on shipments to the counties and the Tribes upon request.

Security

These shipments are not likely to be a target for terrorists. But, US DOE must ensure that prudent security measures are taken.

The HAC recommends that US DOE consider ways to avoid or limit the threat of criminal or civil disruptions. These may include management systems or physical protective features. Measures also could include driver training or law enforcement monitoring or escort of early shipments.

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7.3.2.1-6  
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7.3.3-4

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7.3.2.1-3  
7.3.2.1-6

RECOMMENDATIONS  
FOR EMERGENCY PREPAREDNESS AND RESPONSE

Plans and Procedures

An emergency plan for handling TRU waste accidents must be in place before the shipments begin. The plan must show that accident response can reduce public risks without undue risks for emergency responders.

The IAC finds that emergency coverage for critical first response functions is not complete in many parts of the transport route. In other areas, the coverage is not adequate.

The IAC recommends:

1. The Governor should propose legislation to provide for Regional Response Teams for all hazardous materials to ensure complete coverage.

The legislation should address: (1) special training and equipment needs for response to TRU waste transport mishaps; (2) the need for at least one centrally located team along the route of TRU waste shipments; (3) at least two members of that team are to be fully funded positions in addition to those already funded by local government; and (4) the funding for training and maintaining the team and the two positions shall be provided for the full term of the transport program.

The Hanford Waste Board should support the legislation.

2. The roles and duties of all parties should be clearly defined in the emergency plan and coordinated for each segment of the route. This should include statements of responsibility for and to all individual participants. At any point along the route, the plan should provide for access control, rescue, emergency medical treatment, fire suppression, initial stabilization, and public information.

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State agencies, local governments, and the Tribes shall work with US DOE to ensure complete coverage of the route before transport begins. US DOE should state its commitment, or its contractors' commitment, to assume all liability for emergency response. Also, US DOE should state its commitment, or its contractors' commitment, to reimburse emergency response groups that respond to an accident.

3. The plan should provide for rapid and ongoing technical aid to the incident commander. At the outset, the state advisors should be able to talk with the commander. Within about one hour, local technical experts should reach the scene. Within a few hours, state or federal experts should be on scene.

4. Clear procedures should be written for every key response position. The procedures should explain what each position must achieve. Procedures should provide guidance on how tasks should be performed.

Equipment

All emergency response groups must have access to gear needed to respond to a TRU waste accident. The IAC recommends:

1. Rugged radiation detection gear that is easy to use should be on the waste transport trucks. First response groups should have access to similar gear.
2. Local, state, Tribal, and federal technical response groups should have access to more sensitive radiation detection gear.
3. All radiation detection gear should be kept in good working order; all gear should be easy for responders to obtain.

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- 4. Waste transport trucks should carry gear that can be used to control spilled wastes (for example, tarps).
- 5. Other needed gear should be provided to emergency response groups.

Training

Key local, state, Tribal, and Federal responders must be trained to handle TRU waste mishaps. The HAC recommends:

- 1. Training should be offered to all local, state, Tribal, and Federal groups that may respond to a mishap. Training should be specific to the roles and duties of each trainee group. It should be offered at times and places and in a format that will enhance participation.
- 2. Training should be offered again when any group no longer has enough trained responders.
- 3. Re-training should be offered from time to time.
- 4. Ongoing training of first responders along the route should be given by the hazardous materials response team when it is operational.
- 5. Funds for training shall be provided for the full term of the transport program.

Drills

Short of an accident, drills are the best way to evaluate and improve readiness. Drills that involve all likely response groups must be conducted. The HAC recommends:

- 1. Before the shipments begin, a drill that involves all likely response groups (as participants or observers) should be done in each county.

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- 2. Each year, at least one drill for a TRU waste mishap should be conducted along the route in Oregon. Key emergency responders in the other counties should be asked to observe and critique the drill.

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7.12.9-1

STEVEN SCHIFF  
First District, New Mexico  
Congressman  
Science, Space, and Technology  
Government Operations  
Subcommittee on Commerce  
and Consumer  
Protection

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1320 LAMARCA BLVD  
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**Congress of the United States**  
**House of Representatives**  
**Washington, DC 20515**

ANNOUNCEMENT  
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**STATEMENT OF REP. STEVE SCHIFF**

RE: U.S. Department of Energy Public Hearing,  
Waste Isolation Pilot Plant

June 13, 1989

To: Officials of the U.S. Department of Energy,  
State and local elected and appointed officials and their  
representatives  
Concerned citizens  
Members of the news media

13-JUN-89: EX-00099, PAGE 2 OF 3

Thank you very much for providing this opportunity to discuss the WIPP issue. As New Mexico's First District congressman, let me welcome all of you to Albuquerque, and let me express my gratitude to the Department of Energy for scheduling a field hearing in Albuquerque on the department's recent WIPP environmental study.

These hearings are giving people across the United States an important opportunity to voice their opinions about the storage of transuranic waste at the WIPP site and about the Department of Energy's environmental study for the facility.

Because the WIPP site is located here in New Mexico, WIPP is an issue of special significance to every resident of this state. I appreciate the fact that the Department of Energy has scheduled hearings not only here in Albuquerque, but in Santa Fe and in Artesia. That will give even more New Mexicans the opportunity to voice their opinions about WIPP and to hear the opinions and official testimony of other concerned citizens and public officials.

As everyone is aware, Congress now has before it legislation that would effect the transfer of land from the Department of the Interior to the Department of Energy that could open the WIPP facility before the end of this calendar year.

There are competing schools of thought about the opening of WIPP, and each raises valid issues and concerns.

On one hand, there are two major reasons that something must be done about the nuclear waste that is collecting at a number of sites across the country:

- 1) Unless this waste can be safely stored, we face the prospect of closing down one or more of our nuclear weapons facilities because they are reaching or have exceeded waste storage capacity. That presents a grave threat to our national security;
- 2) Without a better storage alternative such as the salt beds located more than 2,000 feet below the surface at the WIPP site, we face an extremely serious environmental threat from the continued storage of nuclear waste under tents, behind chainlink fences and in railroad boxcars, as is now the case in Colorado, Idaho and elsewhere.

These are strong and persuasive arguments for the opening of the WIPP facility.

On the other hand, it is critical for our present and future safety that we not open the WIPP facility before every valid concern about that opening has been addressed.

Safety has and will continue to be my number one concern in the transportation and the storage of transuranic waste at the WIPP facility.

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We have learned a great deal about nuclear waste contamination from problems experienced at nuclear weapons facilities all over the country and the world. The last thing we want to see at WIPP is a duplication of any of these problems because they were not considered prior to the opening of WIPP.

Science and government must take every precaution to avoid problems with the storage of nuclear waste at the WIPP site. These include concerns that have been raised about geologic pressure within the WIPP repository's salt beds, the storage of "mixed" waste at the facility and questions about the amount of waste that should initially be stored at WIPP for testing purposes.

And the same caution must be used to insure the safe transportation of waste from facilities in nine other states to the WIPP site along highway bypass routes in New Mexico. The state is working closely with the Department of Energy toward that end, and the Department of Energy already is providing funds to the state for the on-going training and coordination of first-responder units all along the WIPP route in New Mexico in the unlikely event there is an accident during the transportation of waste.

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7.15.4-1

And once the facility has been opened, we must maintain a rigorous oversight of waste transportation to and storage at the WIPP site. That is why I will continue to press for the Environmental Protection Agency to join the National Academy of Science, state of New Mexico officials, the Environmental Evaluation Group and the Department of Energy in a WIPP oversight role.

As an elected official and as a concerned New Mexican, my number one priority in the transportation and storage of transuranic waste at the WIPP site is public safety.

There are strong and pressing arguments supporting the opening of the WIPP facility. There are also strong reasons to proceed with great care and caution. It is my hope that hearings like this one will speed the way to a clear determination of if, when and under what conditions the WIPP facility can safely be opened.

I will do everything in my power to serve the needs and interests of New Mexicans and the nation prior to the opening of WIPP and after the facility is operating.

Thank you very much.

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3.1-2

BEFORE THE U.S. DEPARTMENT OF ENERGY  
COMMENTS OF ALBUQUERQUE CITY COUNCILLOR PAT BACA  
ON THE WASTE ISOLATION PILOT PROJECT (WIPP)

JUNE 13, 1989

GOOD MORNING. MY NAME IS PAT BACA AND I AM AN ALBUQUERQUE CITY COUNCILLOR. I WANT TO THANK YOU FOR THE OPPORTUNITY TO SPEAK TO YOU ABOUT AN ISSUE THAT IS OF GREAT CONCERN TO THE CITIZENS OF ALBUQUERQUE AND ALL NEW MEXICANS. THAT ISSUE IS, OF COURSE, PLANS FOR THE WASTE ISOLATION PILOT PROJECT IN SOUTHERN NEW MEXICO.

I AM NOT HERE TO COMMENT ON THE MORE TECHNICAL ISSUES RAISED IN THE MOST RECENT ENVIRONMENTAL IMPACT STATEMENT. INSTEAD, I WANT TO RAISE SOME VERY REAL CONCERNS ABOUT THE TRANSPORTATION OF WASTE THROUGH ALBUQUERQUE AND OTHER NEW MEXICO TOWNS, AND THE COMMITMENT OF THE FEDERAL GOVERNMENT TO FINANCE CONTINUOUS TRAINING FOR LOCAL POLICE, FIRE AND OTHER EMERGENCY RESCUE PERSONNEL WHO WILL BE THE FIRST ON THE SCENE IN CASE OF ANY ACCIDENT.

I DO NOT BELIEVE THAT THOSE ISSUES WERE THOROUGHLY DEALT WITH IN THE MOST RECENT IMPACT STATEMENT. BUT I THINK THE PUBLIC-- WHICH COULD BE GRAVELY AFFECTED IN CASE OF AN ACCIDENT-- NEEDS SOME VERY STRONG GUARANTEES THAT THEY WILL BE PROTECTED IN EVERY POSSIBLE WAY.

I HAVE HEARD MANY IN ALBUQUERQUE GIVE OUT A GREAT SIGN OF RELIEF THAT THE WASTE WILL BYPASS OUR CITY AND FOLLOW A ROUTE FURTHER TO THE EAST. BUT I AM NOT SO SURE. I AM CONCERNED THAT THE DOE HAS NOT FORMALLY DESIGNATED A ROUTE FOR WASTES COMING FROM

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IDAHO, COLORADO AND LOS ALAMOS TO GO TO THE WIPP SITE, OR HELD HEARINGS IN LAMY AND OTHER TOWNS ALONG ROADS INFORMALLY IDENTIFIED. MY UNDERSTANDING OF FEDERAL LAWS IN CASES LIKE THIS IS THAT UNTIL AN OFFICIAL ROUTE IS DESIGNATED, INTERSTATE HIGHWAYS ARE PREFERRED, AND THAT WOULD ROUTE THE TRUCKS DIRECTLY THROUGH ALBUQUERQUE.

IN THAT CASE, AND IN ANY CASE, WE NEED TO BE SURE THAT LOCAL FIRE POLICE AND EMERGENCY PERSONNEL ARE WELL TRAINED AND EQUIPPED TO HANDLE BOTH ROUTINE AND SERIOUS ACCIDENTS. I KNOW THAT OUR LOCAL FORCES HAVE HAD A FEW TRAINING SESSIONS ON THIS, BUT WE HAVE TURNOVER IN THE POLICE AND FIRE DEPARTMENTS, NEW PEOPLE COME ON AND EVEN THE VETERANS FORGET. SO WE NEED REGULAR TRAINING, NOT JUST FOR A FEW YEARS WHEN THE FACILITY OPENS, BUT IN AN ONGOING FASHION. AND WE NEED ADEQUATE RADIATION DETECTION EQUIPMENT TO ENSURE A QUICK AND EFFECTIVE RESPONSE TO ANY EMERGENCY.

WHO WILL PAY FOR TRAINING AND EMERGENCY RESPONSE? CERTAINLY IT SHOULD NOT BE THE LOCAL AUTHORITIES, WHO ARE ALREADY HARD PRESSED TO DEAL WITH ORDINARY PROBLEMS LIKE DRUNK DRIVERS, AN ELEVATED CRIME RATE, AND NOW, HAZARDOUS FIRE CONDITIONS. NO, IT IS THE FEDERAL GOVERNMENT-- WITHOUT ANY BACKSLIDING-- WHO SHOULD BEAR THE COSTS OF ONGOING TRAINING, AS ORIGINALLY AGREED UPON BY THE STATE AND THE DOE.

I APPLAUD THE DOE FOR ALLOWING THIS OPPORTUNITY FOR PUBLIC INPUT TODAY. PUBLIC PARTICIPATION AND COMMENT ARE ESSENTIAL PARTS OF ANY POLICY DECISION-- NO MATTER HOW TECHNICAL. I WAS DISAPPOINTED EARLIER THIS SPRING WHEN THE DOE CANCELLED HEARINGS

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JOINTLY SPONSORED BY THE CITY COUNCIL, THE SIERRA CLUB AND THE LEAGUE OF WOMEN VOTERS. A NUMBER OF PEOPLE HAD WORKED LONG AND HARD TO PUT THEM TOGETHER. I HOPE THERE WILL BE ADDITIONAL OPPORTUNITIES FOR ORDINARY CITIZENS TO BE HEARD IN THE FUTURE.

EVEN THOUGH I SAID AT THE OUTSET THAT I DIDN'T WANT TO ADDRESS TECHNICAL ASPECTS OF THE WIPP FACILITY, I CAN'T HELP BUT WONDER WHY THERE HAS BEEN SUCH RESISTANCE ON THE PART OF THE DEPARTMENT OF ENERGY TO DELAYING THE OPENING OF THE FACILITY UNTIL FEDERAL SAFETY STANDARDS ARE MET. I UNDERSTAND THAT THERE IS PRESSURE FROM OTHER STATES TO GET THE WASTES OFF OF THE SURFACE AND INTO A SAFE BURIAL SITE. BUT RECENT REPORTS OF CRACKS IN THE CEILING OF CHAMBERS OF WIPP CERTAINLY GIVE SUPPORT TO THOSE WHO SAY LET'S TAKE A LITTLE MORE TIME. TIME TO MAKE SURE THAT PLANS FOR SAFE TRANSPORTATION OF THE WASTES ARE IN PLACE. TIME TO TEST POOLPROOF SHIPPING CONTAINERS. AND TIME TO MAKE SURE THAT THE REPOSITORY ITSELF IS STRUCTURALLY SOUND, DRY AND SAFE.

THANK YOU VERY MUCH.

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TESTIMONY OF THE STATE OF NEW MEXICO  
ON THE  
SUPPLEMENT TO THE WIPP FINAL ENVIRONMENTAL IMPACT STATEMENT

Tuesday, June 13, 1989  
Albuquerque, New Mexico

GOOD MORNING. MY NAME IS TOM BAHR, SECRETARY OF THE ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT AND CHAIRMAN OF THE RADIOACTIVE WASTE CONSULTATION TASK FORCE, BETTER KNOWN AS THE GOVERNOR'S WIPP TASK FORCE. I AM HERE TODAY TO PRESENT TESTIMONY ON BEHALF OF GOVERNOR CARRUTHERS AND THE STATE OF NEW MEXICO REGARDING THE WIPP SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT (EIS). WE WILL SUBSEQUENTLY BE SUBMITTING MORE DETAILED, WRITTEN TECHNICAL COMMENTS ON THIS DOCUMENT.

TO BEGIN, I WOULD LIKE TO THANK THE U.S. DEPARTMENT OF ENERGY (DOE) FOR THIS OPPORTUNITY TO COMMENT ON THE DRAFT SUPPLEMENTAL EIS. I AM ALSO APPRECIATIVE OF DOE EXPANDING THE NUMBER OF PUBLIC HEARINGS IN NEW MEXICO AND, CONSEQUENTLY, THE COMMENT PERIOD ON THIS DOCUMENT. IT IS IMPORTANT THAT ALL CITIZENS OF THE STATE OF NEW MEXICO BE GIVEN AMPLE OPPORTUNITY TO PARTICIPATE IN THE EIS PROCESS CONCERNING A PROJECT OF THIS NATURE, MAGNITUDE, AND SIGNIFICANCE.

IN GENERAL, THE STATE OF NEW MEXICO CONCURS IN DOE'S PROPOSED ACTION TO PROCEED WITH A PHASED APPROACH IN DETERMINING WHETHER THE WIPP SHOULD BECOME A PERMANENT REPOSITORY FOR THE DISPOSAL OF SELECTED DEFENSE TRANSMURANIC (TRU) WASTES.

INDEED, THE DOE HAS BEEN PURSUING THIS TYPE OF PHASED APPROACH TO THE PROJECT SINCE ITS INCEPTION IN THE MID-1970s. IN MY OPINION, IT IS AN APPROACH WHICH MAKES A GREAT DEAL OF SENSE, PARTICULARLY IN LIGHT OF THE FACT THAT WIPP'S ENABLING LEGISLATION (PUBLIC LAW 96-164) DEFINES THE PURPOSE OF THE PROJECT AS "...A RESEARCH AND DEVELOPMENT FACILITY TO DEMONSTRATE THE SAFE DISPOSAL OF RADIOACTIVE WASTES RESULTING FROM THE DEFENSE ACTIVITIES AND PROGRAMS OF THE UNITED STATES...". IT IS ONLY PRUDENT THAT ANY FUTURE DECISION TO PROCEED WITH SUCH AN R&D PROJECT -- ESPECIALLY THE WIPP PROJECT -- BE BASED ON THE TYPE OF SCIENTIFIC EMPIRICAL DATA AFFORDED BY THIS MULTI-STAGE APPROACH.

Few states are as acutely aware of the breadth and severity of problems facing this nation's nuclear weapons complex as is New Mexico. As you well know, we have located within our borders several DOE facilities which are integral components of this important U.S. defense complex. Included among these facilities are two national laboratories (Sandia and Los Alamos), the DOE's Albuquerque Operations Office, and now the WIPP project. We are also host to a variety of other federal facilities such as Kinland Air Force Base and White Sands Missile Range.



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BECAUSE OF OUR LONG-STANDING FAMILIARITY WITH THE DEFENSE INDUSTRY AND THE DEFENSE PROGRAMS OF THE DOE, THE STATE OF NEW MEXICO RECOGNIZES HOW THE WIPP IS INEXTRICABLY LINKED TO OUR NATIONAL SECURITY, NAMELY THE MAINTENANCE OF A STRONG NUCLEAR DETERRENCE. AND AS LONG AS SUCH A DETERRENCE IS THE CORNERSTONE OF OUR NATIONAL DEFENSE POLICY, THE UNITED STATES WILL CONTINUE TO GENERATE NUCLEAR WASTES -- WASTES WHICH ULTIMATELY MUST BE DISPOSED OF IN A SAFE AND ENVIRONMENTALLY SOUND MANNER.

IDaho GOVERNOR ANDRUS' BAJ ON OUT-OF-STATE SHIPMENTS OF TRU WASTES TO THE IDAHO NATIONAL ENGINEERING LABORATORY (INEL) BROUGHT THIS POINT TO THE FOREFRONT LAST OCTOBER, AS DID COLORADO GOVERNOR ROMER'S THREATENED SHUTDOWN OF THE ROCKY FLATS PLANT NEAR DENVER. IN THIS LIGHT, IT IS EVIDENT THAT WIPP IS AN ISSUE OF BOTH LOCAL AND NATIONAL CONCERN AND THEREFORE ONE WHICH WARRANTS A TIMELY, BUT SAFE, RESOLUTION BASED ON SOUND SCIENTIFIC ANALYSES.

IN REGARD TO THE OPENING OF WIPP, WE IN NEW MEXICO REMAIN CONCERNED THAT THE AFOREMENTIONED DEVELOPMENTS IN IDAHO AND COLORADO WILL PLACE INCREASING PRESSURE ON THE DOE TO OPEN THE REPOSITORY PREMATURELY. ON THIS POINT OUR POSITION IS QUITE CLEAR: THE STATE OF NEW MEXICO BELIEVES THE WIPP IS NOT YET READY TO OPEN AND WE WILL RESIST ALL EFFORTS TO OPEN IT UNTIL SUCH TIME AS DOE COMMITMENTS TO THE STATE ARE MET.

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THESE COMMITMENTS, MANY OF WHICH ARE OUTLINED IN OUR 1981 SPECULATED AGREEMENT (AS AMENDED) WITH THE DOE, INCLUDE:

\* ADEQUATE FEDERAL FUNDING FOR ROAD IMPROVEMENTS AND BY-PASSES ALONG THOSE SECTIONS OF NON-INTERSTATE HIGHWAYS DESIGNATED AS WIPP TRANSPORTATION ROUTES IN NEW MEXICO. IF THE PUBLIC IS TO HAVE CONFIDENCE IN THE SAFETY OF THIS SHIPPING CAMPAIGN, THESE ROADS MUST BE UPGRADED APPROPRIATELY.

\* DOE COMPLIANCE WITH ALL APPLICABLE STANDARDS AND REGULATIONS OF THE U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA) -- PARTICULARLY 40 CFR 191, SUBPART A, DEALING WIPP'S OPERATIONAL LIFE; AND 40 CFR 191, SUBPART B, RELIC TO PERMANENT DISPOSAL. MOREOVER, THE STATE FEELS STRONGLY THAT THE AGENCY RESPONSIBLE FOR THE PROMULGATION OF THESE ENVIRONMENTAL STANDARDS -- THE EPA -- SHOULD PLAY A KEY ROLE IN DETERMINING WHETHER DOE IS IN COMPLIANCE WITH ITS REGULATIONS. AGAIN, PUBLIC CONFIDENCE IN DOE'S ABILITY TO SAFELY MANAGE, STORE, AND DISPOSE OF DEFENSE TRU WASTES WILL BE BOLSTERED ONLY THROUGH SUCH INDEPENDENT AGENCY OVERSIGHT.

\* ANY REVISION OF THE DRAFT FINAL SAFETY ANALYSIS REPORT (FSAR) AND OTHER RELATED DOE PUBLICATIONS SHOULD INCLUDE SUFFICIENT DOCUMENTATION THAT WIPP CAN BE OPERATED SAFELY. THESE REPORTS, WHICH IN COMBINATION PROVIDE AN ASSESSMENT OF WIPP'S PHYSICAL AND OPERATIONAL READINESS, MUST CLEARLY DEMONSTRATE THAT THE FACILITY'S DESIGN, ENGINEERING AND MANAGEMENT ARE ADEQUATE TO ENSURE BOTH WORKER AND PUBLIC SAFETY.

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\* DOE COMPLIANCE WITH THE RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) AND ALL CORRESPONDING REGULATIONS UNDER THE AUTHORITY OF THE EPA OR THE STATE OF NEW MEXICO, IF DELEGATED THAT AUTHORITY. IN VIEW OF THE FACT THAT THE MAJORITY OF THE TRU WASTES DESTINED FOR WIPP ARE CLASSIFIED AS RADIOACTIVE MIXED WASTES AND THEREFORE SUBJECT TO RCRA REGULATIONS, IT IS IMPORTANT THAT THE DOE COMPLY WITH ALL REGULATORY REQUIREMENTS OF THE ACT.

\* NRC (U.S. NUCLEAR REGULATORY COMMISSION) CERTIFICATION OF THE TRANSPORTATION PACKAGING CONTAINERS PRIOR TO THEIR USE FOR CONTACT-HANDLED (CH) AND REMOTE-HANDLED (RH) TRU WASTE SHIPMENTS TO WIPP. HAVING WITNESSED MANY OF THE TESTS CONDUCTED AT SANDIA ON THE CH-TRU CONTAINER, DUBBED TRUPACT II, WE FEEL THE DOE HAS COME UP WITH A SUPERIOR PACKAGING CONTAINER WHICH WILL ENHANCE SIGNIFICANTLY THE TRANSPORTATION SAFETY OF THESE WASTE SHIPMENTS.

\* COMPLIANCE BY THE DOE AND ITS CONTRACT CARRIER WITH ALL APPLICABLE REGULATIONS OF THE U.S. DEPARTMENT OF TRANSPORTATION (DOT) -- PARTICULARLY THOSE AINED AT ENSURING SAFE, HIGH-QUALITY DRIVERS AND WELL-MAINTAINED VEHICLES FOR TRANSPORTING THE WASTES. THE DOE, THE DOT, AND THE WIPP CORRIDOR STATES MUST WORK TOGETHER TO ENSURE THE CARRIER'S DRIVERS AND MAINTENANCE PERSONNEL ARE ADEQUATELY QUALIFIED AND PROPERLY TRAINED FOR THE IMPORTANT JOB BEFORE THEM -- ESPECIALLY CONSIDERING THE UNIQUE NATURE OF THEIR CARGO. WE RECOGNIZE THAT HUMAN ERROR CANNOT BE ELIMINATED; HOWEVER, IT CAN BE SIGNIFICANTLY REDUCED THROUGH STRICT ADHERENCE TO ALL APPLICABLE TRANSPORT REGULATIONS, PROCEDURES & GUIDELINES.

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IN ADDITION TO THE PRECEDING COMMITMENTS THAT MUST BE MET, THERE ARE OTHER ITEMS THE STATE OF NEW MEXICO WOULD LIKE TO SEE ADDRESSED TO OUR SATISFACTION. INCLUDED AMONG THESE ARE:

\* DELAY OF TRU SHIPMENTS FROM LOS ALAMOS NATIONAL LABORATORY (LANL) UNTIL COMPLETION OF A BY-PASS AROUND THE CITY OF SANTA FE. BECAUSE OF CONCERNS EXPRESSED BY SANTA FE'S BUSINESS AND TOURISM COMMUNITY AND THE FACT THAT TRU WASTE SHIPMENTS FROM LANL (THE ONLY DOE GENERATOR SITE THAT WILL BE SHIPPING WASTES THROUGH SANTA FE) COULD LIKELY BE DELAYED BASED ON THE LIMITED NUMBER OF SHIPMENTS FROM THAT FACILITY, WE URGE THE DOE TO ACCOMMODATE THIS REQUEST. WE ALSO ENCOURAGE DOE TO FACILITATE COMPLETION OF SCHEDULED WIPP BY-PASSES AROUND OTHER NEW MEXICO CITIES SUCH AS ROSWELL.

\* PROHIBITION OF ANY EXPERIMENTATION WITH OR STORAGE OF HIGH-LEVEL RADIOACTIVE WASTES AT THE WIPP. OUR ESTABLISHED AGREEMENT WITH DOE CURRENTLY ALLOWS FOR TEMPORARY EXPERIMENTATION WITH HIGH-LEVEL WASTES AT WIPP. HOWEVER, IN LIGHT OF THE PASSAGE OF AMENDMENTS TO THE NUCLEAR WASTE POLICY ACT LAST YEAR, WHICH ELIMINATED THE ONLY BEDDED SALT SITE UNDER CONSIDERATION AS A CANDIDATE FOR OUR NATION'S FIRST HIGH-LEVEL WASTE REPOSITORY, WE NOW SEE NO REASON FOR CONDUCTING HIGH-LEVEL WASTE EXPERIMENTS AT WIPP; THEREFORE, SUCH A PROHIBITION IS WARRANTED.

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\* DEVELOPMENT OF A DETAILED PLAN FOR MANAGEMENT AND CONTROL OF THE WIPP WITHDRAWAL AREA DURING WIPP'S OPERATIONAL LIFE AND AFTER DECOMMISSIONING OF THE FACILITY, ASSUMING THE PROJECT PROCEEDS. THIS PLAN SHOULD BE DEVELOPED IN CONSULTATION WITH THE STATE OF NEW MEXICO AND THE BUREAU OF LAND MANAGEMENT (BLM).

\* CLARIFICATION THAT THE WITHDRAWAL OF FEDERAL LAND FOR THE WIPP DOES NOT IN ANY WAY ESTABLISH A RESERVATION TO THE UNITED STATES WITH RESPECT TO ANY WATER OR WATER RIGHT. ALTHOUGH WATER RIGHTS DO NOT APPEAR TO BE A SIGNIFICANT ISSUE AT THE WIPP SITE, WE BELIEVE IT IS IMPORTANT FOR THE CONGRESS TO EXPRESSLY STATE THEIR INTENT REGARDING RESERVED WATER RIGHTS IN ANY FEDERAL LAND WITHDRAWAL IN NEW MEXICO.

\* FINALLY, IT IS IMPERATIVE THE DOE REVISE THEIR FIVE-YEAR TEST PLAN, ENTITLED "DRAFT PLAN FOR THE WIPP TEST PHASE: PERFORMANCE ASSESSMENT AND OPERATIONS DEMONSTRATION," TO ADDRESS ALL RELEVANT CONCERNS AND COMMENTS OF THE STATE OF NEW MEXICO, THE NATIONAL ACADEMY OF SCIENCES, AND THE ENVIRONMENTAL EVALUATION GROUP. ABSENT SUCH REVISION, THE PLAN WILL LIKELY BE CRITICISED AS HAVING BEEN DEVELOPED IN A VACUUM AND NOT BEING SUBJECTED TO AN INDEPENDENT SCIENTIFIC PEER REVIEW. THIS, IN TURN, MAY NOT ONLY JEOPARDISE THE PROJECT'S CONTINUING DEVELOPMENT, BUT ALSO RESULT IN A FURTHER EROSION OF DOE'S CREDIBILITY. NOW MORE THAN EVER IS THE TIME TO BEGIN RESTORING PUBLIC CONFIDENCE IN THE FEDERAL GOVERNMENT'S WASTE MANAGEMENT CAPABILITIES.

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HAVING OUTLINED THOSE ISSUES OF CONCERN TO THE STATE OF NEW MEXICO, WE FEEL STRONGLY THAT A LEGISLATIVE LAND WITHDRAWAL BY THE U.S. CONGRESS IS THE ONLY WAY TO ENSURE THE ABOVE-LISTED COMMITMENTS AND OTHER STATE REQUIREMENTS ARE MET. THE INTENTS EXPRESSED IN THE 1981 STIPULATED AGREEMENT BETWEEN THE STATE AND THE DOE MUST BE FULFILLED AND FEDERAL LEGISLATION IS THE MOST APPROPRIATE VEHICLE TO ACCOMPLISH THIS. . . BECAUSE WIPP IS A FACILITY OF NATIONAL CONCERN AND SCOPE, IT IS ONLY FITTING THAT THE PROJECT PROCEED UNDER THE GUIDANCE OF THAT INSTITUTION WHICH REPRESENTS THE PEOPLE OF THIS GREAT NATION: THE U.S. CONGRESS.

IN CONCLUSION, THE STATE OF NEW MEXICO COMMENDS THE U.S. DEPARTMENT OF ENERGY FOR KEEPING US BRIEFED ON THE STATUS OF WIPP AND THE MYRIAD OF COMPLEX ISSUES RELATED TO ITS OPENING. WE MUST KEEP FOREMOST IN OUR MINDS THAT WE ALL SHARE A SINGLE COMMON GOAL: THE SAFE MANAGEMENT, STORAGE AND DISPOSAL OF DEFENSE RADIOACTIVE WASTES. AGAIN, THANK YOU FOR THIS OPPORTUNITY TO APPEAR BEFORE YOU TODAY ON BEHALF OF THE STATE AND ITS CITIZENS.

6-11-89

13-Jun-89; EX-00102, PAGE 1 OF 2

A/M/C.

I am Native American from Ieleta Pueblo. I came here to speak on behalf of the ancient spirit of Land, the sacredness of Mother Earth. I speak on behalf of our tradition and our religion. I speak on behalf of my people who do not understand the danger that surrounds us at this moment of time. I speak on behalf of the Native child, who is too young to understand that one day their ancient vision might be destroyed forever. I speak on behalf of the animal life, as they too have the right to live unharmed on this earth. I speak on behalf of the ancient prayer of my people.

Our people have lived here for thousands of years in harmony with the earth, the giver of life, from the beginning of time these gifts are looked upon like a church, a temple, a shrine that many of you hold in your hearts. This is our way, this is who we are, and yes, we are still alive as Indian people.

At the present time our people, our believes, our tradition, our way of livelihood is threatened by the transportation of the nuclear wastes through our land, the land we hold sacred. This transportation of nuclear wastes in no way surprises us as so much destruction has been done to Mother Earth and continues to this present time and now it has come closer to the sacredness of my people's hearts.

The transporting of the nuclear wastes through our Pueblo land is the most inhuman thinking of you great America. This nuclear waste that has been questioned in the highest level of science, for its safety, and the answers are yet to be found. The burial place has been questioned by the highest level of science, the answers yet to be found.

What is it that has been developed in those sealed canisters that millions and millions of dollars are spent to test the strength of the canister. Is it that dangerous that no one wants it in their states?

13-Jun-89; EX-00102, PAGE 2 OF 2

Could it be that nuclear fire that was developed in the process of building dangerous gas, and bombs to destroy each other? What is it? Is there an answer or will the answer be too late.

Let it be known that to transport this nuclear waste through the land of my people is regarded as disrespectful, inhuman, interfering with laws of nature, and yes, destroying what God has fruitfully created for the livelihood of all people, should an accident HAPPEN.

And who takes responsibility to care for my people? We have no medical care. The fundings has been cut by the same department that has built this dangerous nuclear waste.

We have no facilities to care for our people. Who will take that responsibility should an accident occur? So I ask you to reconsider the transportation of the nuclear waste through our Indian land. There are 19 pueblos and in all 19 pueblos, I-40 and I-25 pass through, as well as the railroad.

I ask you officials of the United State Government - do not destroy that little remains of Mother Earth ~~and~~ her children.

If Governor Carruthers wants this waste so bad, let him move to where this waste is created and then he may have a job forever.

Thank You

*Patsy M. Juela*  
 Patsy M. Juela  
 Ieleta Pueblo, New Mexico

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John J. Dimas  
119 South St., N.M.  
Albuquerque, N.M. 87105

Letters to the Editor  
Albuquerque Publishing

June 12, 1989

Dear Letter to the Editor,

In reference to the Associated Press article, June 12, " Governor says WIPP fees shouldn't get contracts."

According to the Constitution of the United States, every individual has the right to free speech without being harassed or intimidated.

May be Governor(Deng Xioping) Carruthers thinks we're in Beijing, China and not in the United States of America.

Time has come to re-evaluate the whole nuclear and hazardous chemical industries, especially with the facts that are being brought out of Rocky Flats, Colorado.

Think about the air and water that are being adversely impacted by nuclear particles west of Grants, N.M., east of Mt. Taylor near Canocito, La Bajada and Los Alamos and the hazardous chemicals in the South Valley of Albuquerque, N.M. .

This is a small example of what is in store for the future generations. I would hope that Governor(Deng Xioping) Carruthers would initiate hearings on these matters instead of stifling the people.

*John J. Dimas*  
119 South St. N.M.  
ALBUQU. N.M. 87105

Registered Lobbyist for  
Wildlife & Environmental  
Issues



June 12, 1989

WIPP Hearings in Albuquerque

Gentlemen:

I am unable to attend the hearings on the Waste Isolation Pilot Project, but I would like to express my support for the project. I attended some of the hearings on this project in the late 1970's and I would like to express my concerns that we are still conducting hearings on this project in 1989. I think we have staided this project past the point of reasonableness and it is time to move forward.

The technical qualifications of the WIPP site as a disposal site are excellent and I have yet to hear a concern expressed by the opposition to the site that was based upon facts as opposed to emotions. The scientific data supporting the site are overwhelming.

I am reminded of the reporter for the Albuquerque Journal who covered these hearings in the past and was somewhat skeptical about the WIPP project. After he was able to understand and finally see what people were talking about he in effect said "what is the big deal and that we should go ahead with the project".

I vote for that!

Very truly yours,

*William J. Heig*  
William J. Heig

Suite 308, 20 First Plaza Albuquerque, New Mexico 87102 Telephone (505) 242-2384

JUNE 13, 1989

COMMENTS TO THE PUBLIC HEARING OFFICER FOR THE  
WIPP SITE HEARING IN ALBUQUERQUE, N.M.

AS AN INTERESTED CITIZEN, I HAVE FOLLOWED THE NEWS ACCOUNTS AND PUBLISHED INFORMATION ABOUT THE WIPP SITE FOR SEVERAL YEARS. IN GENERAL, I BELIEVE THAT NUCLEAR POWER AND NON-WEAPONS NUCLEAR INDUSTRY AS A WHOLE IS NOW AND WILL CONTINUE TO BE A PART OF AMERICAN LIFE FROM NOW ON. SUCH AS IT IS ALREADY A PART OF LIFE FOR THE OTHER INDUSTRIALIZED NATIONS OF THE WORLD. WE MUST FACE UP TO THIS FACT AND DEAL WITH IT IN AN INTELLIGENT AND CONSTRUCTIVE WAY.

PART OF THIS FACING UP INCLUDES THE NECESSITY OF GETTING ON WITH A REALISTIC STORAGE PROCESS AND LOCATION FOR THE WASTE AT CARLSBAD TO BE OPENED UP TO RECEIVE WASTE FOR STORAGE. IT IS NOT REALISTIC AS SOME OPPONENTS WOULD DESIRE TO HAVE 100% OF EVERY CONTINGENCY AND EVERY QUESTION ANSWERED BEFORE IT IS OPENED UP. PART OF THE DEPARTMENT OF ENERGY'S PLAN IS TO CONDUCT TESTS WITH THE INITIAL STORAGE MATERIAL TO BETTER DETERMINE THE EXACT DETAILS AND NATURE OF FUTURE STORAGE PROCESS. THIS TESTING AND STORAGE PROCESS AS PROPOSED BY THE DEPARTMENT OF ENERGY SHOULD BE ALLOWED TO COMMENCE THIS YEAR AS PLANNED.

*Pauline Gurbels*

MRS. PAULINE GURBELS  
2816 LAS CRUCES N.E.  
ALBUQUERQUE, N.M.

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TESTIMONY ON WIPP -- PRIVATE CITIZEN

Eloise Tittle Jacobsen  
1800 Coe Court, Northeast  
Albuquerque, NM 87110-4359

I am representing myself as a private citizen. Professionally I was trained as a geologist and have read about, heard lectures and discussions of WIPP since those long ago days of "WIPP? What's that?"

Everyone should be eager for a safe deposit of nuclear wastes, and the WIPP project meets the needs for such deposition, including the long accumulated wastes in the U.S. For the safety of our country those wastes must be removed from the "temporary" sites and stored safely.

The repeated testings for WIPP have been so thorough as to appear to be "over-kill". The hysteria and delay tactics seem at the least to be irresponsible and to abuse the rights of all other citizens.

If in fact the zeal to defeat all storage of nuclear wastes is obliquely to destroy and prohibit the use of nuclear power and limit nuclear science in the U.S., I plead that our country not be forced to fall farther behind other European and oriental countries in acquiring nuclear energy.

I urge that the Department of Energy be allowed to open WIPP.

*Eloise Tittle Jacobsen*  
Eloise Tittle Jacobsen

June 11, 1989

1-1

13-Jun-89; EX-00104, PAGE 4 OF 5

June 12, 1989  
9609 Pebble Beach Dr. NE  
Albuquerque, NM 87111

WIPP-SRIS Project  
P.O. Box 5400  
Albuquerque, NM 87115

Re: DOE Hearings on WIPP

Dear Mr. Arthur,

WIPP is urgently needed. It has been studied extensively and can be operated safely. Additional safety studies are not warranted and would be a waste of the taxpayer's money. I feel safer with the radioactive waste buried beneath the earth rather than on the surface where it could be more easily dispersed.

The TRUPACTII transportation container more than adequately meets standard concerns about transportation safety. Further delays to placate a radical vocal minority cannot in good conscience be justified. The over-whelming opinion of scientifically informed independent parties dictates that we should proceed. No human activity is totally risk-free, but society must consider relative risks when making important decisions in the public interest. Using this criteria, there should be no hesitation about proceeding with haste.

Sincerely,  
*Dr. Jeffrey S. Hill*  
Dr. Jeffrey S. Hill

13-Jun-89; EX-00104, PAGE 5 OF 5

Statement of E. C. Beaumont re WIPP  
Edward C. Beaumont, Inc.

As a geologist with 41 years experience with the geology of New Mexico, I cannot see how any further delay in the implementation of WIPP can be justified. My experience includes potash investigations and geological activities involving the Permian Basin salt deposits. Most recently, scare headlines reported cracks in the walls of the WIPP cavities. This should not be cause for alarm. Those with experience in the potash mines in the vicinity of WIPP are well aware of the fractures that develop in cavity walls as stresses are relieved and the salt begins to flow.

It is a tendency for man to exaggerate his influence and effect upon the earth. When put into the proper temporal context, it becomes unrealistic to believe that there will be significant alteration of the Permian salt deposits within the next 10,000, 50,000 or even 1,000,000 years. Even a million years into the future represents only an additional one-half of one percent of the time that has elapsed since those salt deposits were emplaced. And in that interim there have been several major episodes of geologic unrest affecting the region and yet the salt endures relatively unchanged.

Whatever the motives for delaying WIPP might be, it is rubbish to lay them at the doorstep of science.

*Edward C. Beaumont*  
Edward C. Beaumont, Inc. by  
Edward C. Beaumont, CPG No. 112  
2703 Broadbent Parkway NE, Suite D  
Albuquerque, New Mexico 87107  
June 12, 1989

SAINT THOMAS AQUINAS CRURCH  
1301 North Nildah Street  
Lorington, New Mexico 86280

COMMENT ON WIPP SITE

WASTE (WESTINGHOUSE) ISOLATION PILOT PROJECT

ALBUQUERQUE, NEW MEXICO JUNE 13-16, 1989

My name is William Brennan, S.J. I am pastor of St. Thomas Aquinas Church, Lorington, New Mexico. I am here with permission of my Bishop, Richard Ramirez, Diocese of Las Cruces, New Mexico.

I am also representing Pax Christi, an international peace organization. Pax Christi means "In Pax de Christo," the Peace of Christ, a peace threatened by nuclear weapons which can destroy all life on this planet.

Also, by way of introduction, I would like to express the wish that the young people of China could witness these hearings which are an example of the democratic process. A government agency which is so vulnerable to criticism is nonetheless, opening itself to public comment and debate.

We should all thank God for this country. If anything I say sounds harsh or offensive to representatives of the Department of Energy, I hope you will accept these remarks in the context of the democratic process.

I would like to begin with a paraphrase of a statement by Purifilio Diaz, former president of Mexico who once said "Tobacaco Mexico, poor Mexico, so far from God and so close to the United States."

Adapting this to Lorington, I would like to say, "Poor Lorington, so far from God, and so close to the nuclear dump site." The WIPP site is just down the road a piece from Lorington on the road to Carlsbad.

I am not here to preach a sermon, but a quote from the Bible is appropriate.

The truth will make you free." Jesus once said.

The truth is that there is no safe way of disposing of the waste generated by the production of nuclear weapons. In the present state of human knowledge there is no safe way of disposing of this nuclear waste on our planet, whether it be transuranic or any other kind. The only safe way is to load it into capsules, and launch it toward the sun, the only body which can absorb the horrible stuff.

Despite the truth, listen to this propaganda claim from the Westinghouse Isolation Pilot Plant: "As its primary mission, WIPP was to consist of a repository to demonstrate the safe disposal of transuranic wastes that had been generated during the U.S. Defense Program."

Furthermore, the additional truth is that after decades of neglect, the Department of Energy is being forced by public outcry to do something to clean up because corroding containers, defective dump sites, and the continued processing of weapons grade fuel.

SAINT THOMAS AQUINAS CRURCH  
1301 North Nildah Street  
Lorington, New Mexico 86280

I have here a study, entitled: The 1989 Development Report Card for the States, research conducted by the Corporation for Enterprise Development, data as of March 1989.

This study rates the 50 States according to the business climate. Massachusetts scored straight A's for its achievement in four general categories, and 17 subcategories. Our State of New Mexico garnered only C's and D's, one of a few States that earned no B's or A's.

I submit that the last thing New Mexico needs for its business climate, investment and economic development is to be known as the nuclear garbage can of this nation.

I also submit that should there be any accident even remotely comparable to the oil spill in Valdez, Alaska, New Mexico will write a new page of Western Lore. Instead of the nostalgic accounts of westerns about towns, we will become the first Ghost State of the West. No one will want to invest here, build a home here or bring their children here, if there is a serious accident with the nuclear waste disposal, because we are not dealing with an oil spill, nor poison gas leaks, nor a septic tank overflow, nor arsenic in the food, we are dealing with genetic damage, radiation which affects the transmission of life.

St. Rosalie Bertell, a Gynecologist of the Sacred Heart, noted physicist, and authority on nuclear radiation has a sobering thought about genetic damage, "all future generations," she says, "are on earth today."

There is a scary account of birth defects in the babies born to Japanese women who were teenagers in Hiroshima when the U.S. dropped the first atomic bomb. This can be found in Dr. Helen Caldicott's book, "Nuclear Madness."

New Mexico is 10th in the nation for suicides. High suicide rate, low business climate, all we need is another downer, like being the official nuclear garbage can of the U.S.

As a former teacher of English, I would like to draw attention to the words you use: WASTE ISOLATION PILOT PROJECT. A Pilot Project means an experiment, a test, a trial, a tentative probe, an hypothesis of some kind.

The Department of Energy is telling us don't worry, this is a "pilot" project. Sounds reasonable.

But you know I believe in the Resurrection from the Dead, so let us take a flight of the imagination, and suppose that we all rise from the dead and gather here a hundred years from now to continue these hearings about the WIPP site. Of course, I may not be out of Purgatory by that time, and unable to join you.

In this fanciful gathering we will all find that 100 years is not enough time to prove you wrong, or your WIPP opponents right. We need a minimum of 6,000 years, the half life of the least damaging radionuclide. In reality we need many thousands of years before we can test either the salt bed or the steel containers.

This says, as any teacher of English will tell you, that your use of words is contradictory. There is no way you can conduct a pilot project that requires thousands of years.

To you, personnel of the Department of Energy, who insist that the WIPP project is safe, I ask this question, How can you keep a straight face?



SAINT THOMAS AQUINAS CHURCH  
1301 North Ninth Street  
Louisiana, New Mexico 88300

In nearby Nevada you are continually detonating underground nuclear explosions with total disregard for environmental impact. You don't care about water tables, or life beneath the surface. Now you come over to New Mexico like angels of light assuring us of your deep concern for underground contamination. You act like bank robbers in Nevada, and then come over here to join the Church choir, or Wednesday night Bible Study.

The initials D.O.E. no longer stand for the Department of Energy in my book. They stand for "Da Overtick Enterprise, Da Overtick Enterprise!" As long as you can bury nuclear blasts below the ground in Nevada, and the nuclear waste beneath the ground in New Mexico the public will not notice.

I conclude with a recommendation. Both the Department of Energy personnel and the Westinghouse managers of the WIPP program insist how safe this nuclear burial is. Telling you at your word, I recommend that you bury this stuff under the Pentagon. After all it was the members of the War Department in Washington who devised these horrible weapons. I also recommend that you save several treckloads to bury under the Senate and the House. The New Mexico congressional delegation all support the New Mexico WIPP site, with the sole exception of Congressman Bill Richardson, who alone had the guts to defend his own State.

Thus the great souls in Washington who designed these horrible weapons and those who voted for their manufacture can sit on the Jachai waste they themselves have created.

SMC

3.2-1

June 5, 1989

I am requesting that this letter be submitted and included in the record in reference to the WAIST ISOLATION PILOT PROJECT site. I am a life long resident of the state of New Mexico and request that my thoughts and feelings be acknowledged first from that perspective, secondly as a United States citizen, and ultimately as a concerned member of this planet.

As I have understood this project from its inception, it has always been explained as a pilot learning, discovering project. The intent of which was to receive and store "low level", radioactive material and learn the effects on the container of salt in which it was to be stored. I believe that New Mexico has become designated as the nuclear toilet for the wastes of the atomic nation. When a carcass is buried it returns to a state which enriches and fertilizes the earth. The proposed atomic carcasses to be buried at N.I.P.P. will do neither for uncounted generations. They will continue to pollute.

How many times have experts based prognostic conclusions on available data, only to find that data did not equate with actuality? Who would be bold enough to say they could with assurance state that highly toxic materials can remain buried away from living things and the water supply which feeds all for thousands of years? The newly constructed burial grounds are already cracking and shifting. Might this be a message for us to reconsider this plan before the proverbial pound of cure has to be attempted?

I am not hopeful that we will consider the results on our world in this matter, when as a race we are simultaneously splitting the oxygen producers trunks in the Amazon. When the oceans life blood is being infused with enough pollutants to eliminate us all. When the ozone blanket is being unraveled. I could go on, but to what avail.

I would ask that we consider for a moment the dangers of transporting such materials in their "crash proof" containers, over the highways which sadly boast to have the highest D.W.I. rate in the nation.

In the end nature will have the final word. I would only suggest that as a species who can harmonize, that we try to. The discord will be one none of us can live with. I fear we shall find atomic power was much more expensive than anyone could have dreamed.

W. Can Dias.

Robert Thomas

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substantial evidence for a "no action" alternative. It states: "no environmental reasons have been found why TRU wastes could not be left at the Idaho National Engineering Laboratory sorted as it is for several decades or even a century." (8-19 and 5-173) Conversely, it finds the alternative of opening WIPP "would result in the potential for long-term degradation of the environment and public health consequences..." (3-30 and 5-7) This is at least a case for the continued operation of existing DOE nuclear facilities that store wastes, if not rejection of the movement of TRU wastes to the WIPP facility in New Mexico. support. The rejection of "alternative actions" - delaying WIPP's opening until compliance with EPA standards is demonstrated by new evidence in the revised experimental plan affords "no description of the technology to be used and no documentation to indicate an ability to effectively seal on-site experimental rooms. It does not explain why it fails to seal, a salt creep condition identified by the Scientists Review Panel that prevents effective sealing of the bulkheads in experimental rooms. It does not explain how, without a seal and a mixing of waste gases with the atmosphere, it would be possible to gain accurate measurements of the gas generated by TRU wastes, or why it would not be thrown back on rigidly controlled laboratory experiments and computer modeling for the most reliable estimates of whether predicted releases fall within acceptable limits set by the standards." (3-30 and 5-7)

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whether EPA standards can in fact be met; and 2) no realistic alternatives exist to actually using radioactive waste underground for among other things to train for operational safety.

The problem is the new evidence in the revised experimental plan affords no description of the technology to be used and no documentation to indicate an ability to effectively seal on-site experimental rooms. It does not explain why it fails to seal, a salt creep condition identified by the Scientists Review Panel that prevents effective sealing of the bulkheads in experimental rooms. It does not explain how, without a seal and a mixing of waste gases with the atmosphere, it would be possible to gain accurate measurements of the gas generated by TRU wastes, or why it would not be thrown back on rigidly controlled laboratory experiments and computer modeling for the most reliable estimates of whether predicted releases fall within acceptable limits set by the standards.

On operational safety training with CR- and RR-TRU wastes, neither the draft plan nor the draft SEIS demonstrates that potential for actual exposure to hazardous materials is necessary for operational safety training; operational training can be performed with drums using simulated waste.

The reduction of the volume of waste. Under the new plan, the volume to be experimented with is now limited to 33. Again the ostensible reason is to determine whether WIPP can meet EPA standards. No scientific foundation is offered for the 33. The real reason would appear not to be scientific need but to open the site as soon as possible to provide jobs for the Carlsbad area. There is the additional problem. If the reduction to 33 is so small that as all we have by then that it can do no harm, it may be so little as to yield invalid and unverifiable scientific data.

In sum, the revised experimental plan is poorly conceived, and offers a one time experiment that is not fully justified scientifically. The Sierra Club requests further consideration of these problems as well as review by independent scientists and the public.

2. Cracks and Creeps - Retrieval, Safety, and NEPA Due Process. The New York Times revealed on June 3, 1983 that ceiling and floor cracks in two of the 300 foot long rooms at WIPP were occurring at two to three times faster than expected; that the cracks were known to DOE since December 1981, but "were not disclosed in any reports about the facility, including a two-volume assessment of the environmental impacts that is now the subject of public hearings around the country" (p.6) and that the cracks were found and made known by Dr. Lokesh Chaturvedi, a member of the state's Environmental Evaluation Group.

A number of questions exist:

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> Since the cracks suggest intense geologic pressure and more rapid creep and wall closure than planned for in the construction of the repository rooms, how will this bear on the ability to retrieve stored wastes if DOE experiments demonstrate WIPP cannot meet EPA standards?

> How much of an increase in occupational risk do the cracks and the more rapid closing of the room pose to the safety of workers? What mitigating measures in addition to bolting ceilings does DOE expect to undertake? At what additional cost?

> Most important, if the problem of cracks and creeps is a significant problem, but bears on retrieval scenarios and is important in understanding of WIPP, why was the information not included in the draft SEIS for public understanding and awareness?

It is difficult to know how the public is to assess the WIPP facility without critical information. An explanation is requested of why a decision was made to omit information important to agency accountability as well as to the success of the public participation requirements of the NEPA process.

Finally, was any other important or standard information omitted?

3. Comparing with reexamined EPA standards (if CFR 191, Subpart B, EPA is currently developing new standards for the waste sites in Colorado, which were struck down by the Supreme Court in 1990, and which were replaced in late 1990 or 1991. Further explanation of why the opening of facility should not wait on the re promulgation of the EPA standards is requested. Is it DOE's intent to design the facility up to the high standards of health, air and water protection or to regulate standards down to the lesser standard of operational capability?
4. Alternative Storage. The draft SEIS does not discuss alternative storage sites (interim or long term) if WIPP cannot meet EPA standards, or if WIPP cannot handle all the wastes generated during the next three years by the newly mounted and increased activity. It is requested that public consideration of proposed action and for congressional implementation action.
5. Buried and Stored Wastes - The full range of TRU waste problems are not discussed. Buried wastes rather than stored wastes have resulted in uncontrolled contamination of soil and water at DOE sites. The draft SEIS does not discuss a plan to address buried TRU wastes; nor does it explain why priority should be given to stored wastes over buried wastes. A fuller explanation of DOE's reasoning on both points is requested.
6. No Action Alternative - Opening WIPP vs storage at INEL. The draft suggests opening WIPP will create new and more environment, safety, and health risks in contrast to leaving them at existing repositories where the risks are

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considered calculated, relatively stable, and acceptable; in other words, that tracking and moving wastes and storing them underground will increase the probability of exposure, accidents, deaths and injuries, and probable risk to the environment. If the impact of continued storage at INEL, Savannah River, and Hanford are known and acceptable, and if the impacts are much less than proceeding with WIPP, the draft contains no explanation about why a "no action" alternative was not chosen. Was the difference the probable impact on Carlsbad New Mexico?

The "no action" alternative deserves to be fully analyzed. A number of factors should be included such as the mitigating measures of cleanup, expanded site storage at the existing storage repositories, processing to stabilize the wastes or the compaction of stored wastes, and so forth. Without knowledge of all impacts and the mitigation, it is not possible to fully assess the problem.

7. No Action Alternative - On-site cost and time considerations. DOE justifies on-site experiments and rejects laboratory and bin-scale experiments for reasons of costs (\$3,473,000), a two year delay for construction, a five year delay in shipping wastes to WIPP, and the fact that experiments would not resolve all performance uncertainties. (3-30 and 3-31). What is needed is more compelling evidence to dispose of the following unanswered questions:

- > Comparatively, would it cost more to transport the wastes to WIPP than to do laboratory experiments, if would it cost more to extract EPA standards? Where would they then be stored? At what additional cost?
- > Would on-site experiments cause more risks to the public that do not exist in a laboratory setting?
- > Do NEPA permits exist to do bin-scale test experiments at WIPP?
- > Is the objection to the five year delay relevant to the need to demonstrate compliance with EPA standards and the health and safety of the site?
- 8. Transportation and Acceptable Risk. A range of problems remain to be clarified:
  - > If no actual certified container exists, how is it possible to talk about the reliability of them?
  - > If trucks cause more accidents than trains, why does convenience of handling prove to be more important than the number of lives saved and injuries prevented?
  - > If the public is not exposed or harmed if wastes are left at INEL, why should the public risk be increased?
  - > What is the justification for an assumption that there will be no accident with a significant release? What measures are to be undertaken in a case of this sort?

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- > How would organic chemicals interact with radionuclides in a fire? What analytical data has DOE used in its assessment of fire accidents?
- > Why is there no discussion of emergency response equipment or the absence of it?
- > What is the bounding case based on RPP shipments when the average radioactivity of shipments from others facilities such as Savannah River and Hanford contain more than 12 times and 4 times more radioactivity, respectively?
- > What is the basis for the "bounding case" accident of a .0002 release?

It is requested DOE offer a full, realistic discussion of its risk assessments and standards for "acceptable" and "unacceptable risks." As presented, the risk rates for accidents do not appear credible, particularly for an evaluation of severe transportation accidents.

8. National Security Considerations. The draft SEIS does not contain any information on the national security questions referred to in press coverage of DOE's briefing of the Western Governors, Governor Carls of New Mexico and Andrus of Idaho have referred to the national security problem. It was also cited in the Federal Register (16350, April 21, 1989), when the draft SEIS was formally released. Delays to national security and mitigating measures would appear to be an important question of public interest and welfare. So as to avoid that possibility and harm to public interest, it is requested that DOE provide the information on the national security dilemma alternative to the national security problem and evaluate alternatives.

9. Administrative Land Withdrawal. On April 7, 1989, DOE filed an application with the Bureau of Land Management (BLM) for administrative land withdrawal of the WIPP site to allow the test phase to be carried out. (54 Federal Register 5814, April 19, 1989). Public hearings are required on such applications under the Federal Land Policy and Management Act (FLPMA--43 U.S.C. 171). BLM, according to public notice, intends to use the draft SEIS and DOE's public hearings as the basis for approving the land withdrawal application. Yet, the draft SEIS does not provide any detailed technical information or legal proceedings on the requested administrative land withdrawal.

This information is requested, and included is specific information concerning:

- > The reasons for BLM's reversal of its position that only Congress can approve any withdrawal that would require waste emplacement.
- > BLM's ability to review and oversee the test phase; and,
- > Compliance with EPA standards and RCRA before wastes are emplaced;
- > The compelling need to replace an administrative

withdrawal (Public Land Order No. 6403 -- June 29, 1983) that remains in effect until June 1991 and that prohibits any withdrawal that would require waste emplacement.

- > The compelling reasons why Congress should not continue to be given the right to make the land withdrawal decision on WIPP.

The Sierra Club looks forward to the replies to its questions, and expresses its appreciation for the public hearing and participation process.

Sincerely,



Jay B. Sorenson  
Rio Grande Chapter, Sierra Club, Executive Committee Member  
and Environmental Impacts on the Environment Committee, and



Max Roedean  
Albuquerque Group, Sierra Club, Member

7.3.5.1-31  
7.3.5.1-35  
7.3.5.1-35

3.1-4

6.1-1

Department of Energy

Dear Sirs:

We understand that the DOE is pushing to open WIPP this September, in spite of all the safety issues which have not been dealt with. The DOE should be eager to meet the EPA standards. In light of problems at Rocky Flats, and accidents with and spills of wastes all over the country, EPA standards should be viewed as absolutely minimal. Why in heaven's name be allspined now and "hurry" later-- when it's too late? What's your hurry?

Of especial concern are the lack of highway improvements and by-passes around population centers; the lack of training and equipment for those who could deal with accidents; and the fact that the TRUPACT transportation containers have not been certified by the NRC.

Frankly, we feel that WIPP is being pushed down our throats in New Mexico because the population is so small that people in Washington don't give a damn if we all glow in the dark. Prove we're wrong--start showing concern for even minimal standards of human safety.

Sincerely,

*Kristin Parrott*  
Kristin Parrott  
1332 Lafayette Dr., NE  
Albuquerque 87106

*Raymond S. Parrott* 6/13/89  
Raymond Parrott

*Margaret Parrott*  
Margaret Parrott  
1707 Lafayette Dr., NE  
Albuquerque 87106

United States Government

# Memorandum

Albuquerque Operations Office

22

WOP-87060:  
-9204

DATE: JAN 14 1985  
RCV'D: OCC  
ATTN:

SUBJECT: Modification to the Consultation and Cooperation Agreement Between the State of New Mexico and the DOE Concerning the WIPP Project.

TO: Donald P. Hodel, Secretary, (S-1) HQ  
Thru: Major General William W. Hoover, Assistant Secretary for Defense Programs, (DP-1) HQ *W.W. Hoover*

Pursuant to the one-time delegation of authority communicated to me on November 30, 1984, I have signed the above-referenced Modification on behalf of the Department. A copy of the executed document is attached.

The main points of the Modification are:

1. A clarification of the WIPP high level waste experimental program;
2. A reiteration of the total quantity of remote-handled (RH) transuranic (TRU) waste to be received at WIPP including an agreement on the surface dose rates and curie content of the RH TRU;
3. An assurance that the United States will have responsibility for post-closure control at the site;
4. A clarification of the positions held by DOE and the State concerning resources development at the site;
5. A confirmation that DOE will comply with all regulations applicable to the project;
6. A provision detailing the consultation and cooperation process with respect to the demonstration of retrievability prior to the receipt of waste;
7. Further specification of the consultation process concerning the decontamination and decommissioning phase; and
8. Details and timeframes for the completion of the additional geotechnical studies previously suggested by the State.

*R. G. Romatowski*  
R. G. Romatowski  
Manager

Attachment  
Approved: *Donald P. Hodel*  
Secretary Donald P. Hodel

1-3  
4.1-3  
7.9.1-2  
7.9.3-4  
7.12.9-5  
7.12.9-7  
7.15.4-3  
3.2-1

W. STON  
1989

FIRST MODIFICATION TO THE JULY 1, 1981 "AGREEMENT  
FOR CONSULTATION AND COOPERATION" ON WIPP BY THE  
STATE OF NEW MEXICO AND U. S. DEPARTMENT OF ENERGY

The following modifications to the July 1, 1981 Agreement for Consultation and Cooperation, and the Working Agreement for Consultation and Cooperation, which forms a part thereof, are hereby agreed to by the State of New Mexico ("State") and the United States Department of Energy ("DOE"), and are effective and binding upon the parties as of the signing of this document.

WHEREAS, the State has identified certain continuing concerns regarding: (1) the specific mission of WIPP, (2) a demonstration of the retrievability of the WIPP waste prior to emplacement, (3) post-closure control and responsibility by DOE, (4) completion of certain additional scientific testing and reports, (5) compliance with applicable federal regulatory standards for waste repositories, and (6) a program for encouraging and reporting upon the hiring of New Mexico residents at WIPP; and

WHEREAS, DOE and the State have agreed that the following modifications address those specific State concerns and are in furtherance of, and consistent with, both DOE's responsibility for national security and carrying out the mission of WIPP in accordance with Public Law 96-164 and the State's responsibility for the welfare of its citizens and the safe environment of New Mexico; and

WHEREAS, these modifications are made in accordance with Article V - MODIFICATIONS of the Agreement for Consultation and Cooperation and Article I regarding modification of the Working Agreement; and

WHEREAS, the parties recognize that because of the long-term and significant nature of the WIPP Project, there may be additional issues and concerns that may be addressed in future agreed upon modifications and that this First Modification in no way limits the parties from raising such additional concerns in the future;

NOW, THEREFORE, the parties agree to modify the July 1, 1981 Agreement for Consultation and Cooperation and the Working Agreement for Consultation and Cooperation, which is a part thereof, in the following particulars only:

MODIFICATIONS TO AGREEMENT FOR CONSULTATION AND COOPERATION

1. Modify Article VI - WIPP MISSION by revising existing paragraphs B. and C. and adding new paragraphs D., E. and F. to read in their entirety as follows:

"B. WIPP is intended to include receipt, handling and permanent disposal of defense transuranic waste and temporary storage for experimental purposes of a limited amount of high-level defense waste.

All of the high-level waste will be removed from the WIPP upon completion of the experiments and prior to decontamination and decommissioning of the facility. The transuranic waste will be

subject to a period of retrievability prior to permanent disposal as set forth in the Retrievability Plan referenced in Article IV of the Working Agreement.

The WIPP FEIS analyzes the impacts on the public health and safety from the release of radioactive material from WIPP. DOE's position is that the bounds of these impacts are established by the estimated dose consequences, rather than by any of the particular characteristics of the waste to be placed at WIPP. It is the State's position that the impacts on public health and safety are bounded not only by dose estimates but by the site characterization, multiple containment barriers, QA programs, design criteria, operational controls, enforcement of safety program and other good engineering practices. The analyses in the WIPP FEIS use the upper limit of 100 rem per hour as the maximum surface dose rate for a canister of remote handled transuranic (RH-TU) waste and an expected maximum activity level of 23 curies per liter for the waste. The Record of Decision dated January 22, 1981 also limited the total volume of RH-TU to be shipped to WIPP to 250,000 cubic feet.

A limited amount of RH-TU waste, described below as falling within the 100 to 1000 rem per hour range, presently in existence has activity levels and characteristics which exceed the transuranic waste characteristics used in the WIPP FEIS. Since physically reducing such waste form to levels below 100 rem per hour may be impractical and since the WIPP Waste Acceptance Criteria (WAC) or its companion waste certification compliance requirements will permit exceptions to the

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rem per hour  
←  
pumping

WAC, the DOE will, prior to granting such exceptions for such waste and prior to the shipment of such waste: (1) perform analyses to ascertain the impact of such on the public health and safety, (2) consult with the State of New Mexico, including providing the State with a copy of the analyses for review and comment, and (3) provide to the State a period of forty-five (45) days to review and comment on such analyses prior to granting any such exceptions. In no instance will such an exception to the WAC be granted if it would cause a significant increase in the impacts on public health and safety discussed in the WIPP FEIS.

The DOE agrees that no defense RH-TU with a surface dose rate in excess of 1000 rem per hour will be shipped to WIPP and that no more than 5% of the total volume of 250,000 cubic feet (or 12,500 cubic feet maximum) of defense RH-TU shipped to WIPP will exceed 100 rem per hour surface dose rate. Defense RH-TU waste shipped to WIPP will not exceed the 23 curies per liter maximum activity level (averaged over the volume of the canister). The total curies of defense RH-TU shipped to WIPP shall not exceed 3.1 million curies. The concentrations of radionuclides in the RH-TU canisters shall be determined by a procedure which shall include one or more of the following basic methods: (1) materials accountability; (2) classification by source; (3) gross radioactivity measurements; (4) direct measurements of major contributing radionuclides; or (5) such other methods as the parties may agree to.

Review



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Further, DOE agrees that the amount of defense high-level waste (DHLW) used on an experimental basis will not exceed 430,000 curies per canister and a total of 17.2 million curies. The DOE will disclose in writing to the State the upper limit of the surface dose rate of any DHLW canister to be brought to the WIPP for experimental purposes no later than February 28, 1985.

WIPP is not designed for the permanent disposal of high-level waste, nor has the WIPP site itself been characterized for such permanent disposal.

- C. DOE, or its successor governmental agency, or the United States if no such agency, shall not abandon the WIPP site without decontamination and decommissioning having been completed, and DOE or its successor governmental agency, or the United States if no such agency, shall have the responsibility for ongoing post-closure institutional control at the WIPP site. As stated in the Working Agreement, the milestones and associated consultation and cooperation process provisions covering the decontamination and decommissioning of WIPP, including the consultation process concerning the length and extent of the post-closure institutional control, shall be negotiated and resolved by the parties in the future, and at least one year prior to the start of the decontamination and decommissioning of WIPP.

- D. During facility construction and operation the DOE will not allow subsurface mining, drilling or resource exploration from within the WIPP site. The "WIPP site" as used here means the 4 x 4 mile (10,240

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acres) area consisting of sections 15, 16, 17, 18, 19, 20, 21, 22, 27, 28, 29, 30, 31, 32, 33 and 34 of Township 22 South, Range 31 East, RMPN, in Southeastern New Mexico.

Deviated drilling for oil and gas from outside the WIPP site may be allowed so long as the subsurface of the WIPP site is not penetrated above a depth of 6,000 feet from the surface. A portion of the land comprising the WIPP site is presently owned by the State. The foregoing statement of DOE policy regarding the preservation of the integrity of the WIPP site is not intended to diminish the State's authority and responsibility with respect to such state-owned land.

One year prior to the completion of decontamination and decommissioning of the WIPP site, DOE shall make a decision whether to continue the above-stated policy regarding subsurface mining, drilling or resource exploration, at the WIPP site. The DOE shall consult with the State prior to making the decision. The State's position at this time is that the DOE should take measures to prevent any non-WIPP mining or drilling from the surface down to 6000 feet within the 16 section (4 mile x 4 mile) "WIPP Site" and that the DOE should devise ways to protect the site by enforcing this policy for the longest time possible after the site is decommissioned.

- E. In carrying out this stated mission, DOE and WIPP will comply, at a minimum, with all applicable state, federal and local standards, regulations and laws, including any applicable regulations or standards promulgated by the Environmental Protection Agency (EPA).

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Compliance by way of grandfathering, variance, waiver or exemption shall in no way prevent or stop the State from requiring any similar health and safety measures at WIPP under separate applicable authority, nor shall such type of compliance prevent or stop the State from seeking conflict resolution under Article IX, herein, over such health and safety measures.

7. The foregoing statement of the WIPP mission is based on the WIPP mission authorized by Congress in P.L. 96-164. The parties recognize that all or part of the statement of mission in this Agreement for Consultation and Cooperation would not be binding on the parties if, in the future, Congress enacts legislation specifically related to the WIPP mission which conflicts with this statement of the mission. The parties further recognize that this Agreement for Consultation and Cooperation in no way relieves or alters, in any respect, any requirements or responsibilities imposed on DOE by any other federal laws or regulations including but not limited to the National Environmental Policy Act."

2. Modify Paragraph C. of Article VII - KEY EVENTS AND MILESTONES to read in its entirety as follows:

"C. The following are currently identified as Key Events:

1. Draft Environmental Evaluation;
2. Preliminary Engineering - Title I;
3. Final Environmental Evaluation;

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4. Site and Preliminary Design Validation (SPDV) Construction;
5. Detailed Design - Title II;
6. Construction of Exhaust and Waste Shafts;
7. Construction of Waste Handling Building;
8. Underground Development;
9. Construction of Exhaust Filter Buildings;
10. Computer Installation for the Facilities Alarm and Monitoring Systems;
11. Operations;
12. Retrievability Decision for TRU Waste;
13. High-Level Waste Retrieval and Shipping;
14. Decontamination and Decommissioning."

3. Modify Paragraph C. of Article VIII - CONSULTATION AND COOPERATION to read in its entirety as follows:

"C. It is understood by the parties that the State may disseminate to the public copies of all data, reports and other material furnished the State by DOE pursuant to the provisions of this Article or other requirements of this Agreement and may elicit comments and concerns from the public thereon for communication to the DOE."

4. Modify Article VIII - CONSULTATION AND COOPERATION by adding the following new paragraph H. concerning the employment of New Mexico residents to read in its entirety as follows:

"H. The parties recognize that neither DOE nor the State can require that

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New Mexico residents be employed by DOE and its subcontractors for the construction and operation of WIPP. Nevertheless, both parties agree that it is desirable, within the limits of the law, to encourage the employment of New Mexico residents. DOE agrees to establish with the State a monitoring and statistical reporting program for itself and its subcontractors in order to periodically report on the number of New Mexico residents hired and the steps taken to fully and effectively publicize the availability of WIPP jobs in New Mexico for prospective New Mexico employees. The details of this program will be agreed upon in writing by the State and DOE."

MODIFICATIONS TO WORKING AGREEMENT FOR CONSULTATION AND COOPERATION

1. Modify Article IV - KEY EVENTS AND ASSOCIATED MILESTONES by adding the following new sub-paragraph 11 to Section K. OPERATIONS to read in its entirety as follows:

"11. Retrieval Demonstration.

The objective of this activity is the demonstration of the retrievability of the three waste forms: i.e., remote-handled transuranic (RH-TRU), contact-handled transuranic (CH-TRU), and experimental defense high-level waste (DEHW), in accord with criteria established in WIPP-DOE-71, Design Criteria Waste Isolation Pilot Plant, as revised. DOE will provide to the State for its review and comment the following documents:

- (a) retrieval equipment design specifications for each waste form;

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- (b) retrievability demonstration plan for each waste form, which will include a summary of the demonstration procedures and techniques to be followed, the in situ conditions to be simulated, and the criteria for evaluating the results of the demonstration of the procedures and techniques;
- (c) report on the mock, onsite CH-TRU retrievability demonstration which documents the results of the demonstration of the applicable procedures and techniques;
- (d) report on the mock, onsite RH-TRU retrievability demonstration which documents the results of the demonstration of the applicable procedures and techniques;
- (e) report on each mock, onsite DEHW retrievability demonstration which documents the results of the demonstration of the applicable procedures and techniques.

The State shall review and comment on each report listed in paragraphs (c), (d), and (e) above in writing within sixty (60) days of its receipt. DOE shall consider and respond to such comments. The first shipment of each specific waste form or configuration of that form shall not occur until seventy-five (75) days after the DOE responds to the State's comments on DOE's report on the retrievability demonstration for that waste form or configuration. The State shall be invited to view the retrievability demonstrations.

The Manager, AL-DOE, shall advise the State in writing, on a quarterly basis, of the estimated first shipping date of each waste form.

2. Modify ARTICLE IV - KEY EVENTS AND ASSOCIATED MILESTONES by adding the following new sub-paragraph 12 to Section K. OPERATIONS to read in its entirety as follows:

"12. Geotechnical Studies

As stated in WIPP-DOE-174, DOE will perform certain additional geotechnical studies at the WIPP site. The specific studies to be conducted for this purpose are listed at Appendix I to this Working Agreement. This list does not preclude performance of additional studies as needed to resolve scientific issues or questions. The parties may agree to amend Appendices I & II to this Working Agreement as needed in the future.

DOE or its contractors will issue reports on these studies. The projected dates, anticipated completion dates for each report, and a detailed description of the scope of each will be provided to the State by March 31, 1985. Such information shall be incorporated herein as Appendix II to this Working Agreement.

The reports will be provided to the State for review and comment not later than January 1, 1986. A summary report on the additional geotechnical studies listed in Appendix I to this Working Agreement will be provided to the State by DOE not later than January 1, 1986. The State may, at its

option, review and comment on such geotechnical studies and DOE's summary report.

The completion of these studies and the issuance of these reports may be concurrent with construction of WIPP, but will be completed and forwarded to the State prior to the shipment of any radioactive waste to WIPP or January 1, 1986, whichever is earlier, with the possible exception of the long-term sorbing tracer test report. The DOE will, however, make every effort to start the long-term sorbing tracer test as soon as possible and no later than January 1986.

The State's position on these studies is that they will answer some remaining uncertainties about the site. The DOE position concerning these studies is as set forth in WIPP-DOE-174.

3. Modify ARTICLE IV - KEY EVENTS AND ASSOCIATED MILESTONES by revising existing paragraph M. DECONTAMINATION AND DECOMMISSIONING, to read in its entirety as follows:

"M. DECONTAMINATION AND DECOMMISSIONING

The following Milestones are currently established for this Key Event. Additional Milestones, together with reasonable time limits for State comment and DOE response, shall be negotiated in the future, as appropriate.

1. Decontamination and Decommissioning Plan, including any remaining borehole plugging, decontamination of surface facilities, and disposition of underground and surface facilities and equipment.
2. Post-Closure Control Plan, including, but not limited to, active and/or passive control periods, specific organization responsibilities, control of resource recovery activities, active and passive control requirements, environmental monitoring and safety considerations. This plan will be implemented, and the implementation monitored, by DOE, its successor governmental agency or other designated federal agency.
3. Retrieval of last experimental waste.
4. Shipment offsite of last experimental waste.
5. Public Health and Safety Radiation Standards Plan. This plan shall include a description of DOE's implementation of applicable public health and radiation protection standards in effect at the time the facility is to be decommissioned.
6. The State shall have the opportunity to consult with DOE and comment on all materials contained in draft DOE orders related to the health and safety considerations of the WIPP project prior to promulgation of final order(s) by DOE.

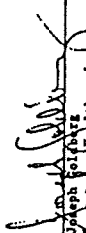
7. Periodic reports on progress of excavation and geotechnical conditions encountered for mining performed prior to this key event."

The parties further agree that all other terms and conditions of their AGREEMENT FOR CONSULTATION AND COOPERATION including the WORKING AGREEMENT FOR CONSULTATION AND COOPERATION, as previously modified, shall remain in full force and effect.

IN WITNESS WHEREOF, the undersigned have executed this modification to their July 1, 1981 Agreement for Consultation and Cooperation and the Working Agreement for Consultation and Cooperation in several duplicate originals.

STATE OF NEW MEXICO

UNITED STATES DEPARTMENT OF ENERGY  
ALBUQUERQUE OPERATIONS OFFICE

by   
Joseph Polcharek  
Secretary, Health and Environment Department  
Chad-Juan, Radioactive Waste Task Force

by   
R.C. Romatowski  
Manager

November 27, 1984  
(Date)

November 30, 1984  
(Date)

APPENDIX I

to

WORKING AGREEMENT

Additional Geotechnical Studies

1.(a) Investigate the depression of the marker beds in the lower part of the Salado Formation, centered two miles north of the WIPP shafts (this structure is generally referred to as the "TC-92" structure).

DOE will investigate this depression by drilling the hole DOE-2. This hole will be drilled into the Delaware Mountain Group (DMG) Formation. It will be a multi-purpose hole, the primary purpose of which will be to answer the question about the origin of the marker bed depressions in the Salado Formation at this location. The secondary objectives will be to gather information about the Rustler and the DMG hydrologic parameters. In the event brine is encountered in the Castile, the DOE may examine the DMG elsewhere rather than deepen DOE-2.

1.(b) Provide data and any interpretive reports on artesian heads encountered at the levels of Salado and Castile Formations.

DOE has collected data of possible relationship to the origin of the artesian heads which have been encountered at the levels of the Salado and Castile Formations at several deep boreholes, including AEC-7, WIPP-12 and Cabin Baby. DOE plans to undertake a further investigation at DOE-2 to determine the origin of such heads if artesian heads are encountered at that location. Data related to such heads from these deep boreholes, together with any interpretative reports thereon, will be made available to the State.

2. Perform hydrologic testing of the Rustler water-bearing zones.

Perform hydrologic testing at three-wall hydropads at E-3 and E-11; long-term flow-tests at E-3; single well testing at several existing wells.

3. Perform tracer testing in the Rustler aquifers.

Perform convergent tracer tests at hydropads E-3 and E-4. Perform at least one field test using sorbing tracers at a site to be selected after consultation with EEC.

4. Obtain water-chemistry data for the Rustler aquifers.

Obtain water samples from several boreholes and different water-producing horizons in the Rustler Formation where such sampling has not already been done. Analyze these for major and minor dissolved constituents as well as

for environmental isotopes such as, Cl-36, C-14, D-234, U-238, Ra-226, O-18/16 and H-2/1, to aid in the determination of flow-paths, groundwater velocity and the recharge/discharge areas.

5. Conduct a water balance study for the WIPP site.

This study should try to answer the question of recharge and discharge; infiltration characteristics of surficial materials; evaporation from the WIPP ground surface, and from the lakes and the Pecos river; and the overall balance of the movement of water through the formations overlying the Salado at the WIPP site.

6. Perform computer modeling of groundwater flow and solute transport through the Rustler aquifers.

Using the information obtained from the work described in items 2 to 5 above, perform computer modeling of groundwater flow and solute transport through the Rustler.

7. Study the mechanics of removal of salt from the Rustler Formation at and near the site.

Questions to be addressed by this study include, (a) more precise areal definition of removal of salt from various zones in the Rustler (b) locations, characteristics and thickness of dissolution residues in the Rustler (c) recharge and discharge paths of fresh water and brine used in the dissolution process, and (d) the timing and the rate of dissolution.

8. Delineation of Castle brine.

Evaluate and field-test non-invasive geophysical methods near the existing WIPP Project related deep boreholes to identify and delineate possible occurrences of brine in the Castle Formation. DOE will consult with HEC prior to the selection of such methods to be tested. If a method shows results which agree with interpretive data from existing drill holes, conduct a survey over the repository using this method to delineate possible occurrences of brine.

9. Investigation of suspected "dolines."

Investigate some of the prominent depressions at the site and in the surrounding area to address the question of their origin, particularly the suspicion of at least some of these being "dolines."

10. Study of MB-139

Study the marker bed 139 underlying the repository horizon to determine its composition, structure and origin and the origin of brine and gases apparently associated with it.

APPENDIX II.

to

WORKING AGREEMENT

Projected titles of reports, brief description of the scope of each and the anticipated schedules of publication will be supplied by DOE to the State by March 31, 1985. This Appendix II to the Working Agreement will then become a part of this Agreement.

FOR IMMEDIATE RELEASE:

Nation's Largest Public Health Group Votes to Delay WIPP Until Its Safety is Assured

The American Public Health Association (APHA) representing 80 thousand public health professionals throughout the United States, adopted the policy statement DELAY WASTE ISOLATION PILOT PROJECT (WIPP); A NUCLEAR WASTE REPOSITORY, UNTIL SAFETY IS ASSURED at its 118th Annual Meeting in November. This statement was submitted to the national organization by the New Mexico Public Health Association (NMPHA), an affiliate chapter. (A copy of the entire statement is attached.)

The New Mexico Public Health Association monitored Congressional WIPP debate throughout the Fall of 1988 with alarm, noticing that important public health concerns such as federal environmental standards for nuclear waste storage, bypass routes around population centers, and baseline health studies in surrounding communities were being bargained away by Congressional committees. The Executive Committee of NMPHA passed a policy resolution which was submitted to the American Public Health Association for consideration at its recent Annual Meeting. The Governing Council of APHA overwhelmingly voted to pass the New Mexico resolution and will be working with the state affiliate to help assure the safety of WIPP before it opens.

Both the state and national public health groups felt that important public health concerns were being left out of the WIPP debate. The resolution asks that the federal government not open WIPP until federal health agencies have declared it safe, that baseline health studies be carried out immediately, that the Environmental Protection Agency develop standards for nuclear waste storage before any waste arrives at WIPP, that safe transport be developed, and that no nuclear waste pass through population centers.

National concern about the safety of nuclear facilities has never been higher. Recent newspaper, radio and television reports around the country have noted the failure of the federal government to monitor its nuclear facilities. Errors and coverups have been revealed at Fernald, Ohio and Rocky Flats, Colorado. Now - before any waste is shipped to southeastern New Mexico - is the only chance we have to make sure WIPP is safe.

FOR MORE INFORMATION:

Carol Miller, Chair, Resolution Committee, New Mexico Public Health Association.  
(805)689-8381

P.O. Box 98, Cimarron, NM 87550

Victor LaCruz President NMPHA  
827 3560



## RESOLUTION OF THE AMERICAN PUBLIC HEALTH ASSOCIATION

13-JUN-89: EX-00111, PAGE 2 OF 2

DELAY WASTE ISOLATION PILOT PROJECT (WIPP), A NUCLEAR WASTE REPOSITORY, UNTIL SAFETY IS ASSURED

The American Public Health Association,

Having passed thirteen policy resolutions regarding radiation hazards since 1954 (1.), and

Providing leadership in efforts to monitor and abate radiation hazards for more than thirty years, and

Noticing with alarm the attempt by the Department of Energy to rush the opening of the Waste Isolation Pilot Project (WIPP), in Lerwis, New Mexico before there are Environmental Protection Agency standards promulgated to address the siting and operation of nuclear waste repository facilities; and

Noting that DOE internal testing has found an unforeseen brine seepage that may compromise the suitability of the entire site, and

Understanding that there is no completely safe mechanism to transport nuclear waste and that the DOE selection of truck transport constitutes a potential health hazard to large numbers of people; (2.) and

Recognizing that 1607 radioactive waste shipments planned for transport to the WIPP site, in the first three years of operation, will pass through at least twenty three states and constitutes a potentially significant national health hazard; therefore,

1. Urges the Department of Energy to delay the opening of WIPP until its safety is assured by federal health agencies independent of the Department of Energy; and
2. Urges the Department of Energy to immediately carry out the baseline health studies it promised communities close to the WIPP site. These studies must be completed prior to the storage of any waste; and
3. Calls upon the Environmental Protection Agency to develop and implement, with public involvement, standards that assure the safe operation of nuclear waste repositories; and
4. Urges Congress to mandate the development of technology and procedures for the safe transport of nuclear waste, which includes containers that pass DOE and independent laboratory testing, prohibits the transport of nuclear waste trucks through populous areas, and to use alternate/bypass routes around population centers.

## REFERENCES

1. American Public Health Association, Public Policy Statements, January 1988, Resolution numbers 5405, 5604, 5703, 5811, 5906, 6108, 6117, 7207, 7308, 7509, 8117, 8124, 8214.
2. Department of Energy, Albuquerque Journal, August 21, 1988, "WIPP Class Excess Years of Disaster Officials."

13-JUN-89: EX-00112, PAGE 1 OF 2

STATEMENT OF ELEANOR J. MILROY  
PEACE ACTION ENABLER FOR THE PRESBYTERY OF SANTA FE

Good afternoon. I am the Peace Action Enabler for the Presbytery of Santa Fe which encompasses 41 Presbyterian churches in New Mexico. I wish to thank the Department of Energy for the opportunity to speak here this afternoon.

The 199th General Assembly, which is the supreme governing body of the Presbyterian Church (USA), in 1987 specifically addressed Nuclear Waste Disposal Management. I wish to quote two statements from that document.

"...[T]he question of a responsible management of high level nuclear waste disposal addresses the issues of good stewardship of human society and the environment as well as the ability to have meaningful participation in decisions that affect one's life and the life of one's children." It is this concern for human society and the environment that brings us here today.

In this same document, the 199th General Assembly urges the United States government to pursue diligently the search for geologically suitable nuclear waste disposal sites that meet the requirements set by the Environmental Protection Agency. The Waste Isolation Pilot Project has not met the EPA requirements.

Environmental Protection Agency standards provide the regulatory framework for assessing potential releases of cancer-causing, radio active materials into the ground water, soil, and air. The EPA standards provide the only independent evaluation of safety at the WIPP site. It would be totally inappropriate for WIPP to open without meeting the EPA standards. The Department of Energy should not be a self-regulating agency.

The recent allegations made by the FBI at the Rocky Flats facility undermine any confidence the public may have had in the Department of Energy to be a self-regulating agency. According to a front page article in the Albuquerque Journal of June 10, 1989, the allegations include: illegally burning hazardous wastes, illegally discharging pollutants into two creeks that flow into water supplies serving four metropolitan cities, and illegally dumping hazardous wastes. If true, these practices show a criminal disregard for the purity of the ground water, soil, and air upon which humankind depends to survive.

Transportation of radio active materials can affect citizens in all 23 states along the proposed shipping routes. As the disaster of the Exxon Valdez demonstrates, the reality of an accident can be much different and much more damaging than the projections written in the environmental impact statements.

The accident release scenarios should not be relied upon to evaluate the effects of a severe transportation accident. The draft Supplemental Environmental Impact Statement inappropriately assumes that waste packages will be totally reliable. It predicts that releases in case of serious accidents would be virtually non-existent. Given the likelihood of human error and mechanical failure during 25 years of operation, certainly more serious accidents can occur.

Over the years, we have been given many assurances by the Department of Energy concerning the Waste Isolation Pilot Project. We were told initially that the WIPP site would meet EPA standards. We were told it would be a dry site and not to worry about seepage into ground water. We were told that most hazardous waste would be transported by rail and not by truck. We were told it would hold low level and not high level hazardous waste. And, we were told that it would be sealed tight without cracks. As it turns out, these things that we were told are not true.

Now we are told that WIPP needs to open regardless of meeting Environmental Protection Agency standards. That is not acceptable and the Department of Energy has a lengthy history that underscores why it is not acceptable. We strongly encourage the decision-makers not to fall prey to the extensive political pressures that are pushing for the early opening of WIPP.

We must be concerned for the welfare of generations yet to come. We must not make a decision that undermines our environment and the quality of life for future generations. As the General Assembly of the Presbyterian Church (USA) stated, we must stand with the people of this country and the world. We must demand that WIPP be closed and that the EPA standards be met. We must demand that meeting the EPA standards is not good stewardship of this earth and its inhabitants.

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My committee will not require you to take notes so you can put your pants on. I'll report to your constituents. We're dealing here with living man made problem being national and worldwide are man made of ignorance. We have changes, are now, and will continue to risk on the grace of Mother Nature, our earth Mother and by knowing her with respect will maintain us in good relationship. We are in a complete symbiotic relationship with all nature. We have got to comprehend the meaning of our spiritual relationship. The pueblo children groups in New Mexico have chosen this area to live in. They were not placed here by the Federal government as others, suffering a loss by displacement. The Indians have traditionally honored our earth in sacred ceremony for many centuries. My fellow citizens must not pay for in a national office way. We will reiterate that William Penn's use of a quote that "all seeds of future generations are held on earth today." Genetic damage within Nature's representatives is my idea of hell; it do not wish to create that possibility to put on earth through WIPP storage of radioactive waste. How ridiculous you would say was a man saying off the limb of a tree by sitting on the limb being cut. Yet WIPP with radioactive waste is not out of limb with problems that cannot be paid out. When it comes to man there always is direct and indirect mis-handling of radioactive elements. I want to stop narrowing the disruption and losses to our precious plant, animal, human, and elemental life cycle.

I remain opposed to WIPP as a viable way of handling our problems. I remain optimistic that we can and will learn to learn the heads that create water and guide humanity to a clean, clear and creative alternative to our needs.

Ninke-Haines  
P.O. Box 4923  
ALBUQUERQUE, NM 87196

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WIPP Statement  
INTRODUCTION

I am here representing Dean J. Derald Morgan of the College of Engineering at New Mexico State University. We believe that there is a critical national need for safe disposal of transuranic wastes. About 3 million cubic feet of such wastes presently exist and are being stored at 10 locations around the country. By the year 2013 (in the next 25 years), approximately 5.6 million cubic feet of these wastes are projected to be generated and in need of storage. A permanent repository is definitely needed for the disposal of these large volumes of wastes generated and presently stored at the DOE facilities.

The WIPP facility has been carefully designed and constructed for the safe disposal of about 6.2 million cubic feet of transuranic (TRU) wastes in surface and underground facilities. The carefully planned, phased program that is proposed for WIPP will safely handle all current TRU wastes (over 4 million cubic feet stored in surface and shallow underground repositories) and all TRU wastes generated within the next 25 years.

Safety and Environmental Considerations

The WIPP design and program has carefully addressed the safety and environmental aspects for storing TRU wastes. The greatest percentage of these wastes are only referred to as "contact handled" transuranic (CH TRU) wastes. These forms of TRU wastes as tools, glasses, gloves and disposable clothing used in a laboratory environment. Ninety-seven percent of wastes received by WIPP will be contact handled. The remaining three percent will be "remote handled" transuranic (RH TRU) wastes. These wastes emit beta and gamma radiation and must be heavily shielded for safe handling and storage. However, the average radiation exposure for someone in physical contact with either level 1 waste container at WIPP is between 3 and 10 arcs; this level is well below the level of concern during a medical x-ray. Also, if a person gets no closer than three feet from the container, the level drops to negligible amounts.

The geological and hydrological systems at the WIPP site and their effect on long-term performance at the site have been thoroughly analyzed. Significant data have been recently obtained on the Salado formation and the Rustler formation to further enhance the analysis.

Analysis has also been made for the impact associated with the transport, handling and emplacement of the hazardous chemical component of mixed TRU wastes. This analysis is to ensure that these satisfy the regulations under the Atomic Energy Act and the Resource Conservation and Recovery Act.

Risk assessment studies have been carefully performed under incident-free as well as accident conditions. Even under the accident scenario, the health risks associated with the radiological exposure to an individual at the nearest residence following a severe postulated accident at the WIPP is about 3.1 in ten thousand for both the exposed and Alternatives Actions. With filtration, the risk drops by a factor of one million. The maximum predicted hazardous chemical intake by a worker is approximately four orders of magnitude below the Threshold Limit Value-based estimated intake and three orders of magnitude below the Immediate Danger of Life and Health-based estimated intake. Exposure to the public from onsite accidents would be less than those to a worker, and therefore are also well below health protection reference levels.

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Well Planned Program

The thoroughness of the design and the program planning leads to confidence in the project. A 3-year test program is planned with decision making at several phases to ensure maximum safety.

Pursuant to the phased approach, the DOE proposes the implementation of a Test Phase. The Test Phase has two distinct parts: 1) the Integrated Operations Demonstration, and 2) Performance Assessment. The Integrated Operations Demonstration is intended to prove the ability of the waste management system to safely and efficiently certify, package, transport, and emplace wastes in the WIPP. Operations testing and monitoring would be performed at the waste storage and generator facilities, during waste transportation to the WIPP, and at the WIPP. The Performance Assessment is the process of determining how an engineered facility will behave relative to a predetermined set of criteria or expectations. For the WIPP, the Performance Assessment is intended to show whether the repository meets the standards promulgated by the EPA in 40 CFR Part 191, Subpart B.

The procedures for receipt, emplacement and retrieval have been carefully developed. The design of the waste handling building provides a multibarrier confinement system that prevents any contaminated particulates from leaving the building. Further, excellent quality control procedures have been laid out. Very specific acceptance criteria have been established for wastes coming to the WIPP. The criteria govern the physical, radiological, and chemical composition of the wastes to be emplaced in the WIPP, and establish specifications for packaging. The Waste Acceptance Criteria (WAC) have been established in consultation with the U.S. Department of Transportation and U.S. Nuclear Regulatory Commission (NRC) regulations for the safe handling and transport of wastes. Additionally, the DOE requires that each TRU waste generator develop and implement a program that establishes procedures for waste certification and quality assurance. Each site-specific plan identifies the certification administrative controls and procedures required to characterize TRU waste, segregate and process waste forms, and package waste in accordance with the WAC.

Conclusions

Our support is based on our firm belief that the need is critical, that safety and environmental considerations have been properly addressed and that the program is well planned and is in the best interest of our state, our nation and our people. We are convinced that DOE is justified in proceeding with the five year test program.

Other Endorsement

We have discussed the WIPP project with the Board of Directors of the New Mexico Society of Professional Engineers. The NSPE Board endorses DOE's plans for the five year test program.

Presented by Morris B. Green for J. Derald Morgan, Dean of the College of Engineering.

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MEMBERS OF THE COMMITTEE, LADIES AND GENTLEMEN-----

My name is Billie Jenkins and I have lived in Carlsbad since 1945. I am a wife, mother and business woman. My work experience was with a bank for 22 1/2 years, of which I was branch president for the past 12 years. I am now employed in the financial department of an insurance company.

I believe Carlsbad is a nice place to live, work and raise a family. I would be happy for future grandchildren to be raised in Carlsbad with the WIPP Site in activity.

There appears to be a lot of concern over the transportation of waste to the WIPP Site. I want to tell you how afraid I would be of movement of the waste through my community. Let me give you an example of how this low level waste could be transported in a safe manner. I get in my 18 wheel van, pick up a load of low level waste drums in Los Alamos to transport to Carlsbad. On the way home, I would be willing to sit on the drums until I reach the WIPP Site. The only unsafe activity would be discomfort of the sacroiliac! I'd bring a pillow along to combat that discomfort.

Now I want to talk about the location of the waste material which will be approximately 2100 feet underground in thick salt beds. Visualize Potash being approximately 1000 to 1200 feet underground, there is grass on the surface and oil and gas prospects below the salt beds. If I had the opportunity, after the waste has been disposed of at the site, I would like to own the oil and gas leases, the Potash leases, and the grazing leases, because it would be possible to recover the oil, gas, and potash from this site and I would graze my cattle on the surface. Through none of these activities would there be a problem with the waste material below.

Just look back at the Gnome project that was completed in Carlsbad in the early 60's.

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This was an atomic explosion underground which released radioactive material. You go to that site today and you would not detect any damage whatsoever. There's no chance of explosion from the WIPP Site and radioactivity of this material is much lower than that in the Gnome blast.

I am very confident that storage of this low level radioactive waste is one of the safer activities we can do, because it is surrounded by very thick beds of salt. Salt is one of the better shields for radioactive material.

Storage of this material must be a very high priority in our National interest; it has to be stored somewhere!! We in Carlsbad have the best place to store this material and I and my neighbors welcome the nuclear waste to Carlsbad. We will not only be serving the economic needs in Carlsbad, we will also be serving the needs of our State and our Nation. I say to you tonight, BRING IT ON DOWN!!!

*Billie Jenkins*  
1418 W. Orchard  
Carlsbad, N.M. 88220

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June 13, 1989

My name is Barbara Webber. I have lived in Carlsbad all of my adult life. When I moved to Carlsbad it was about a third of its present size. The growth and prosperity of my home town is very important to me. My husband and I have made a very comfortable living in our community as did our parents, we raised our family here and enjoy a myriad of friends. We plan to retire in Carlsbad. I would be extremely opposed to any growth or progress that threatened my family or the quality of life in the community that I love. The fact that I am here speaking in favor of the W.I.P.P. project means that I am comfortable with the way it is being handled. I feel good about the impact it will have on Carlsbad. I think its time to quit playing games and get on with this project.

Barbara Webber  
 PO Box 1659  
 Carlsbad, NH 88220

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# The Chamber

Serving Carlsbad Since 1892

Carlsbad Chamber of Commerce • 302 S. Canal • P.O. Box 810 • Carlsbad, N.M. 88220 • (505) 867-6516

June 13, 1989

My name is Terry Burns. I am Executive Director of the Carlsbad Chamber of Commerce. My role here today is to register the support of the 700 businessmen and professional members of the Carlsbad Chamber for the WIPP project. While it is true that the project represents a favorable economic boost for the area, no amount of economic improvement is worth jeopardizing our health and our quality of life. The support of the Carlsbad business community clearly demonstrates that the business community recognizes the outstanding safety record of the nuclear industry and feels that the project poses no threat to the community. In point of fact, the business community feels the WIPP project is a responsible and viable solution to a very serious problem.

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WIPP SEIS Hearings

6-7-89

To whom it may concern,

I would like to express my support for the Waste Isolation Pilot Plant program. I feel we must remove the wastes currently being stored in the biosphere and in shallow land fills around our country and dispose of them in stable deep geological formations.

In my opinion the salt beds of the Lincoln Basin provide the stable environment and will insure the wastes safely for thousands of years.

Nuclear weapons are an unfortunate reality in our world, but they are a necessity to protect our freedom. If our world leaders are able to eliminate nuclear weapons as a means of keeping peace, we still have to face and deal with the waste produced.

Act now and do not pass this problem to our children and the next generation.

White Chimney  
Carlsbad, N.M.

Please read my letter at one of the hearings. I cannot attend the Carlsbad hearing.

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the carlsbad department of development

June 13, 1989

My name is Chuck Bernhard. For the past two years, I have been the Executive Director of the Carlsbad Department of Development. I am submitting this testimony to you today on behalf of the City of Carlsbad, Escondido County as well as some 70 businesses and individuals who support the operation and activity of our organization in its attempts to stimulate new economic growth in the Carlsbad area.

It is no secret that WIPP has been of benefit to our local economy and currently employs over 600 persons. Nevertheless, our past and current involvement with WIPP has never been, nor is, nor ever will be an act of economic desperation. When the leadership of our community first registered its support for WIPP, the price of a barrel of oil was two to three times its current value in real dollars and the potash industry, our most basic industry, was pacing at a healthy level. With the establishment of a pricing and production agreement with Canada in early 1988, the potash industry has grown by over 300 jobs and continues to show improvement.

Other areas of our economy have also shown marked improvement. For instance, travel at the Carlsbad Caverns over



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Memorial Day showed a 25% increase over last year. Agriculture, particularly the production of alfalfa, is also showing an increase over previous years.

If the ONLY reason underlying our support of WIPP is economic then why would we continue to support the project in light of our economy that is showing increasing strength in these other areas? And, if we only wanted WIPP for its jobs it provides than why did our Board of Directors recently unanimously pass a resolution against a proposal for interim storage of transuranic waste even though it could mean several hundred new jobs to our area?

The answer is simple. It is our belief along with Governor Andrews of Idaho that the storage of 95 gallon barrels containing radioactive waste on a concrete slab in a bubble tent is no solution to the problem of transuranic waste and we simply do not want that kind of use in or near Carlsbad. We are convinced that the permanent isolation of waste in bedded salt 2,150 feet underground is likely the solution and is certainly worth trying out. In addition, we are also convinced that DOE has taken increased precautions to ensure the safety of the project to the public and to the environment while the demonstration period is in progress.

Moreover, we believe it is critical that this project be "tested" with live waste in an amount of sufficient quantity that both the scientific and operational integrity of the project can undergo an accurate evaluation. Without a test of the project

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with live waste in situ, our community and the rest of the world will never really know and will never be assured that our beautiful river, lakes, mountains and caverns as well as our people will truly be protected. Who can argue that our community, Carlsbad, stands to lose more than anybody if WIPP is faulty?

In sum, we say lets give the project a chance over these next five years to prove itself. Therefore, we support the proposed action by DOE to proceed with a phased approach to determine whether the WIPP should become a repository for the disposal of TRU waste. Future generation will hold us responsible for creating a safer world and if we don't give WIPP this chance we simply are not acting responsibly.

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Billion Dollar Hole

"Sink a billion bucks in a hole!"  
Happened in our neck of the woods.  
Carved in the desert to safely store  
Low-level nuclear trash and goods.

Since the first atomic bomb  
Burst in the Southeast Quadrant,  
Should not she have the first Waste  
Isolation Pilot Plant?

The sea that once was here is gone;  
The land is now stable and firm.  
A thick layer of salt remains  
Safe and secure for the long term.

Deep in the desert, dry as a bone,  
There is no trace of stratum fault;  
Ideal for transuranic store  
Buried safe inside the salt.

WIPP was placed in Eddy County,  
Sited by ill use of buffers, one.  
Two great shafts were drilled in the earth,  
Toxicants stored there alone.

Where has the ugly waste been stored?  
"We've swept it under the rug,  
Dumped in shallow burial grounds,  
Topped with soil and left with a shrug."

Uncle Sam and a host of people  
Sought to protect health and life.  
"Burial grounds weren't good enough."  
WIPP followed public strife.

A host of competent workmen  
Bored the Billion Dollar Hole;  
Dug the storage rooms in salt,  
To protect life is their goal.

Waste from six federal plants  
Came to WIPP by highway and rail;  
Cash stored in a hidden place.  
Man must march the progress trail.

*Gene Forster*  
*corrected*

June 13, 1969

How simple life would be if all issues were black and white. In reality, however, life is composed of shades of grey. The health and safety of my family is a primary concern of mine as it is of my neighbors. As a responsible adult, I also have a concern that our radioactive by-products be effectively and safely handled. I know that no other industry has the kind of safety record that the nuclear industry has. I know that the WIPP project has repeatedly demonstrated that safety is their primary concern. I think it is important to note that the majority of the input from our area, the actual area of the site, is supportive, and is comfortable with the safety and viability of the project. It would appear to me that most opposition is coming from areas far removed from the site, and that are impacted far less than our area. Let me close by saying that I offer my complete support for the project.

*Mike Hood*  
Mike Hood

13-Jun-89; EX-00124, PAGE 1 OF 2

Bruce G. Trigg, M.D.  
729 Loma Vista Dr., N.E.  
Albuquerque, N.M. 87106

My name is Bruce Trigg. I am a pediatrician and public health physician in Albuquerque.

Given the recent revelations about the Department of Energy's mismanagement of nuclear weapons facilities, the SEIS which is being discussed today offers no assurances to the people of New Mexico that the DOE is capable of safely completing and implementing their WIPP plans. While hiding behind a veil of "national security," the DOE facilities have amassed a dismal record of major equipment failures, massive environmental contamination, near catastrophic accidents and serious threats to the public's health.

The Federal Bureau of Investigation and the Environmental Protection Agency are currently investigating allegations that the DOE and Rockwell International Corp., which operates the Rocky Flats nuclear weapons plant have criminally violated laws covering the storage, treatment, and disposal of hazardous and radioactive wastes. Because more waste from Rocky Flats will go to the WIPP site than from any other nuclear plant in the country, all further WIPP planning must await the completion of this criminal investigation and the determination of what effects this will have on the classification and handling of wastes which are destined for WIPP.

While the EIS documents contain literally thousands of pages of text and charts, it somehow manages to omit mention of extensive fractures which have been found in the floors and ceilings of two large waste storage rooms at WIPP. According to the New York Times of 6/2/89, these cracks were discovered in December, 1987 and yet this information was deliberately withheld from scientists with the New Mexico Environmental Evaluation Group. What effect could these cracks have on the retrieval of wastes if the planned five-year experiments at WIPP should prove that the site is unsafe? The omission of this important information from the SEIS brings into question the validity of this entire document. What other potentially damaging information has been withheld from public scrutiny?

Can anyone seriously believe that the DOE and their corporate subcontractors can keep WIPP safe for at least 10,000 years when within the span of a mere 45 years they have managed to severely pollute all 16 of their weapons facilities. Rocky Flats for example, has contaminated the air, soil, and groundwater and now threatens the drinking water supplies of several nearby communities. Studies have demonstrated plutonium contamination as far as 8 to 10 miles east of the plant, which could potentially

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13-Jun-89; EX-00124, PAGE 2 OF 2

affect the health of more than 1.6 million people. At the Fernald, Ohio DOE plant, thousands of workers and nearby residents have been exposed to uranium wastes. The actual number of people who have been injured or died because of the operations of DOE facilities will never be known.

This campaign to fast-track the opening of WIPP sounds suspiciously like more "business-as-usual" for the DOE. This will translate into more contamination, disregard for the public health and safety, mismanagement, large "bonus" payoffs to subcontractors, and lying to the public. Therefore, independent agencies and scientific groups including federal health agencies independent of the DOE must assure the safety of WIPP before and not after it opens. Specifically, all EPA standards for hazardous waste disposal must be met before a single load of nuclear trash is dumped in New Mexico. The stakes are too high for New Mexicans to demand anything less.

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My name is Elizabeth Matthews. I am a physicist and have had experience in rural medical evacuations. I examined the Transportation Emergency Planning section of the SEIS (Supplement Environmental Impact Statement) and found it totally unrealistic and misleading. It grossly underestimates the likelihood of a significant accident involving a WIPP-bound truck. It overestimates the ability of rural emergency personnel to respond to a radiation disaster effectively and safely.

Given that New Mexico had 55,000 crashes in 1987 (I quote statistics from the N.M. Traffic Safety Bureau) and that the vast majority of them occurred in clear weather, the SEIS places incorrect emphasis on weather factors in its table on "Road Segments of Concern" (table D.2.1.) for two major WIPP routes in New Mexico. Route I-25 from Raton south to Santa Fe is considered a "High Crash Rate" road, according to the N.M. Traffic Safety Bureau. I-40 in downtown Albuquerque. These are the roads the WIPP trucks will use. The SEIS omits this crash data, omits mention of traffic congestion at Albuquerque's main inter-section, and focuses on weather concerns, which are rarely a factor in New Mexico's accidents. New Mexico also had had a higher than the national average of vehicle death rates (vehicle death rates per 100 million vehicle miles) from 1984-87. This implies more severe accidents occur when they occur. Given this data, and given the omissions, the safety of our State and people along the WIPP routes during truck transport is in no way guaranteed and in fact seems a much greater risk than the SEIS concludes. Also, despite the SEIS's own conclusion that rail transport is safer, plans for rail transport are vague and incomplete. They are obviously not a priority. And as we see again and again in this document, safety is a secondary concern.

I wish to comment more fully on the SEIS scenario of a transportation accident involving a WIPP bound truck. It can only be described as a "best case scenario" for I know of no rural accident of this magnitude that ever

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was handled so smoothly and efficiently, even in the most experienced hands. This is not idle speculation but based on experience and common sense. During mock-disaster drills used to test skills of emergency personnel, there are always serious deficiencies found in the post-drill review, no matter how experienced the personnel participating. Here are some examples the SEIS overlooked, and false assumptions they make about the accident scenario

- For one, human error. In a crisis this factor becomes more significant. They mention it not at all. Nor do they mention fire. A likely occurrence in a crash. This can cause toxic fumes from leaking toxic waste, radioactive smoke from radioactive particulate matter or dust caught up in the flames. Telephone availability. This is not always easily accessible on a rural highway. The first phone, 11 miles away, may be broken. The next is 30 miles away. This has happened to WIPP/radiation accident. It is often hard to locate the person in charge and delays ensue. Weekends, holidays, out-of-town meetings and no second-in-command is readily identifiable.
- Immediate response of ambulance and fire truck/mcuc vehicles. They are often tied up on other calls and backup service might be an hour away, or more.
- Bystanders. Crowd control is a major problem at accidents. Bystanders may be contaminated by radioactive waste, leave the scene unknowing, or in spite of instructions given by police. They will track home radiation to their families and there will be no way to trace these victims.
- Amount of radioactivity spilled. This may not be minimum amounts. Some containers emit some reactivity at the surface. Rescue personnel often work hours extracting and stabilizing accident victims at the scene. Their exposure to radioactivity by direct contact, proximity or inhaled dust, & smoke may be lethal.
- Equipment available. Anti-radiation suits with respirators are not standard issue for rural rescue teams (not many urban ones). To expect rescue personnel to risk serious radiation and toxic waste exposure without proper protection is unethical.

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Trained personnel. The SEIS provision for training rescue personnel along WIPP routes is grossly inaccurate, and unrealistic. WIPP cannot open until all rescue personnel have been trained. To do any less is to risk serious consequences for those communities where training has been omitted. And to reiterate what good is training if you don't have the necessary equipment for safe rescues.

One possible solution is to guarantee that each WIPP truck be accompanied by a special convoy of radiation/toxic waste rescue experts, with all the necessary fire, medical, extraction, protective gear that would be needed in a major accident.

I have so far discussed only rural accident scenarios, I shudder to think of an accident in downtown Santa Fe or the "Big-I" intersection in Albuquerque. Imagine clouds of toxic fumes and radioactive dust spreading out over the state capitol or downtown Albuquerque. We cannot risk our cities becoming another Hophal or Chernobyl.

To summarize, the SEIS, by not properly addressing these issues, by omitting important data and making false assumptions, is an incomplete, unrealistic and intentionally misleading and thereby negligent document. The DOE, by accepting this document, is not addressing, let alone providing, adequate safeguards in these areas. I can only conclude from this that the DOE deliberately intending to defraud the American people.

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My name is Michael Dempsey. I am a uranium miner. The WIPP site MUST be opened now. There must be no delay. NO additional restrictions should be imposed. This country - this planet cannot afford to wait. The long term disposal of radioactive waste must be explored now so that the long term disposal of commercial nuclear waste may be studied and dealt with. There is NO denying the waste - it is here - and all of us have benefited from it whether it is from medicine, clean energy or weapons to protect our freedom.

All of us have shared the power of the Atom. Now we need share the benefits again in the form of clean energy for all.

The whole idea of the WIPP site is safe storage. This is not what we have now. But we can have it. Do not let the...

... environmentalists block this plan or idea. Another fossil is the most environmentally safe form of electrical generation we have today.

Except hydro power it is the only source of electricity that does not add to the greenhouse effect. Even solar power cannot claim this because it takes 200 times the amount of energy to manufacture the components than they can generate in their life time.

Yes I believe nuclear waste is hazardous, but not polluting. And we must continue to study and deal with it in a safe fashion.

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The Pseudo-Environmentalists who lived ST. FRUITS DR. on Sunday have missed the entire point of all the RESEARCH and testing that has gone into the transport containers. AS a volunteer fireman and a member of my company's Yellowcake Emergency Response Team who lives within 1 mile of a proposed waste transport route I am not afraid.

In the event of a highway accident I would feel a much greater threat from the diesel fuel in the trucks tanks than from the contents of the sealed and carefully engineered containers of waste.

The pseudo-Environmentalists would have us believe that the burial of 55 gallon drums is better done as it is now at a shallow depth on beautiful pine covered mesas, than at 2100ft below the surface in a salt bed that has not seen water in millions of years. Speaking as a mine worker who is 3200' underground 5 days a week I believe salt beds are an ideal location.

Speaking as a miner I would like to inform anyone opposing this project of the following first hand observations I have made.

1. 2100' below ground is way, way, way, way down there. Imagine the ceiling above our heads here is 2100' thick and made of dirt. Whatever is down there is not coming to the surface for a long long time, it's down a mountain believe that and believe that it is a better place to dump Nuclear Waste than a mesa top in LOS ALAMOS.

3.1-1  
7.3.1.1-19

3.1-1

(3)

2. I see every day ground flow in certain secondary deposits which to me we speak of. Some tunnels have closed off completely in less than 2 years. While I understand this does not happen as quickly at the WIPP site - it will happen - it will be sealed completely.

3. The 2000' of solid salt means that no water is present and if any water managed to make its way down then 1000' of salt to the waste then back up again another 1000', that and another 1000' of rock to the surface no one would drink it because it would be saltwater.

Remember - The radioactive components will decay and diminish their volume over time - The salt is forever. A. Every person who handles wastes every day, whether it is wood smoke, auto exhaust or turpentine fumes from roasting from wots very little gets disposed of in proper fashion. IT just gets dumped in the air, water or at a shallow depth - wherever is convenient. The WIPP site is a carefully planned disposal scheme - nothing about it is haphazard as it is with our own household waste disposal methods. Now ~~some~~ anyone can oppose completely clean, safe disposal of nuclear waste when their own wastes are casually tossed away without a second thought is beyond comprehension.

5. The proposed ~~State~~ Road from White Lake bypassing Santa Fe should not be built. The new highway across that create canyon full of petroglyphs should not be built to appease a few unhappy petra readers and flat earth society members in Santa Fe. Especially if it involves ~~road~~ ~~disposal~~ ~~road~~.

3.1-1

7.15.42

amount of public U.S. Forest land for private  
 Indian land - The proposed road will take up  
 MORE SURFACE (that were live timber?) and  
 disturb more land - Then the WIPP site itself!  
 NEW MEXICO has been in the nuclear age  
 from its start, we must continue in a positive  
 direction without delay.  
 More use of energy has progressed from  
 wood to coal, oil, natural gas to nuclear fission  
 and maybe in our lifetimes nuclear fusion. IN THE  
 past our waste from every production was  
 merely dumped as was convenient, there is no  
 reason to oppose this attempt at environmentally  
 safe disposal.

My perception of the WIPP site is the following:

- 1 Good clean jobs for New Mexico
- 2 More Research and development in our state.
- 3 Being Big enough to deal with our own  
 problems in a sensible way
- 4 Taking Responsibility for our actions
- 5 Being in the forefront of an Emerging Technology
- 6 A world that reminds everyone that there is  
 a nuclear reactor in this city at Sandia Labs. and  
 3 in Los Alamos. We need a place to dispose of  
 their waste - they have served us well, we have  
 all benefited and have much more to gain in the  
 nuclear age.
- 7 One final thought: The recent set back for  
 the nuclear industry in increments coming on  
 may have some of you rejoicing but take a look  
 around - this is N. California - and we can all  
 be damned if not that.  
 Michael A. Dwyer  
 Box 40  
 Silverton, N.M. 87005  
 1-505-876-4013

I want to record my opposition to the exciting this member of the WIPP  
 site near Defiance, New Mexico, for nuclear waste storage. Moreover, I  
 believe there are compelling reasons to question whether WIPP should ever be opened.

First, the NRC's Supplemental Environmental Impact Statement (SEIS) asserted  
 at page 3-21 "... the delay of the WIPP project would be the potential to adversely  
 affect the nation's production of nuclear weapons."

Although this sentence seems to be a prohibition insertion in an environmental  
 impact statement, that assertion itself is well known. If the  
 if the leaders of the world power - Presidents Reagan and Bush and General  
 Secretary Gorbachev and others - have been sincere in their commitments to reduce  
 contradiction and inconsistency in the WIPP on the planet, there is a basic  
 the project. Interesting too, is the fact that SEIS, other than alluding to  
 "national security implications" if WIPP does not open, does nothing to explain  
 that part of its argument.

Second, almost from the beginning of the nuclear industry and all its reali-  
 sations, there has been a public proclivity for those most interested in nuclear  
 activities charged with its regulation and control, to damage their  
 credibility when their activities are exposed to the light of public scrutiny.

Ongoing investigations by the FBI of Rocky Flats and its prime contractor,  
 and the subsequent release of the history of events which make public confidence  
 generally in such a critical matter.

Moreover, the collateral footnote to this history add to my concern: one of  
 the small, but still significant, number of jobs that have been eliminated  
 in the form of denied state contracts against New Mexico's business leads the  
 have the security to voice opposition to WIPP. The other is the recent "energy"  
 the Center for Research in the Public Interest to the Coal and Nuclear Energy  
 National Institute for Environmental Studies for "budget irresponsibility or misfunding"  
 by commercial during the past year.

A final point to make: I am sure that many people may support WIPP and its  
 long. However, the collateral footnote to this history add to my concern: one of  
 economy. A good many jobs have certainly been generated by WIPP allowed, but  
 there is a certain irony in assuming that another nuclear-weapon-related  
 industry will have any tremendous positive impact on our economy.

A research project completed two years ago by the Corporation for Enterprise  
 development on the economic health of all 50 states, revealed in some  
 disturbing figures for New Mexico despite not more than forty years of nuclear  
 R & D.

In 1984, indeed, rank first among all the states in federal expenditures per  
 capita for research and development, and yet nationally in university research,  
 expenditures per capita were ranked 48th. The state's population, and 2nd among  
 all the states in manufacturing investment per capita.

At the same time New Mexico ranked 49th among all the states in the percentage  
 of its population in the service sector, 49th in the percentage of income  
 distribution and in the percentage of working poor. Only Alabama, Mississippi and  
 Arkansas ranked below us in overall economic ill health.

22,000 may factors were used in that study, specifications about 220 findings  
 cannot be too precisely drawn. But those who look to WIPP and its economic  
 implications might wish to factor these into the entire equation.

Robert Magill

\* See Albuquerque Tribune, 5-12-87



**WASTE ISOLATION PILOT PLANT**  
A Research and Development Facility of the U.S. Department of Energy



**HIGHWAY ROUTE SELECTION**

Traditionally, the choice of the highway routes used for the transportation of hazardous materials has been the prerogative of the carrier. The choice was determined by the routes authorized in the carrier's Interstate Commerce Commission (ICC) Certificate or subsequent carrier's certificate.

Due to the perceived risks associated with the transport of radioactive materials, various local governmental units began a random process of banning or limiting the movements of radioactive materials through their jurisdictions. Since there are many such local units, the nation was faced with a potential breakdown of the transport system.

To forestall such an occurrence, the U.S. Department of Transportation (DOT), which is the cognizant federal agency, undertook a rule making action to examine the relative roles of federal, state, and local agencies in establishing the routes to be used in transporting placarded shipments of radioactive materials. An Advance Notice of Proposed Rule Making was published on August 17, 1978. The final rule was published on January 19, 1981. The content of the final rule can be summarized as:

1. The primary safety mechanism imposed on the transport of radioactive materials is the strict demands on packaging requirements. Property packaged radioactive materials can be moved around the country with the same degree of safety (not in perfect safety) as other hazardous materials, liquid propane, explosives, chlorides, gasoline, etc.

2. Recognizing the increased safety features inherent in the federal Interstate Highway System, movement of radioactive materials should be routed on Interstate Highways, including Interstate bypasses around population centers, six-lane divided routes:

If a different route choice provides a demonstrated added degree of safety, the individual state may make that determination and enforce the use of the designated preferred route. The DOT has chosen the state government for this role because it results in a reasonably small number of government units (there are some 23,000 county and local government units) and because the state is sufficiently large to achieve an overall approach to routing determinations.

4. However, the DOT recognizes that highway safety considerations can be and are highly local concerns. Therefore, the DOT specifically requires that the process of designating preferred routes be designed to involve

**Lack of Drawings Delays A Waste Dump Further**

By KEITH SCHNEIDER  
Special to The New York Times

WASHINGTON, June 12 — The opening of the nation's first permanent nuclear waste repository, already delayed since October, could be postponed for many more months as Energy Department officials try to get state health and safety inspectors to sign off on the project. Internal uncertainties from the department's safety officers, made public in a congressional hearing, suggest that federal officials in New Mexico are still unable to provide the documentation to assure that the design and construction are safe.

The same problem became known last September and caused the department to indefinitely postpone the opening of the Waste Isolation Pilot Plant, 2,154 feet beneath the desert 28 miles east of Carlsbad, N.M.

**Detailed Diagrams Needed**

Among other reports, the Energy Department still has to complete detailed diagrams of the exact structure of 21 systems already built in the repository, including the electrical system, the radiation control system and the fire protection system.

The diagrams should have been completed months ago, department engineers and officials said it would take at least nine months and up to \$24 million to complete them.

"It's important to have the drawings for key safety systems so they can be operated and maintained

**Opening, due last September, may come by March.**

property," said James P. Knight, the department's director of safety approval.

Representative Mike Synar, an Oklahoma Democrat, said the failure to complete the structural drawings, coupled with numerous other shortcomings, cast doubt on the department's ability to operate the repository safely. Mr. Synar is chairman of the House Government Operations Committee's Subcommittee on Environment, Energy and Natural Resources, which held today's hearing.

He called the department's record keeping in Carlsbad "a shambles" and severely criticized the repository's managers, particularly the chief project manager in New Mexico, Jack B. Tillman.

**Hopes to Open in September**

Mr. Tillman, taking responsibility for many of the failures that have delayed the plant opening, said today that most questions focused in reports and other paperwork that could be completed by September, when the Energy Secretary, James D. Watkins, hopes to open the repository.

But Mr. Tillman also acknowledged

that "we have a substantial amount of work to complete," and said the repository "will not open until we are ready to operate and until we can show it can be done safely."

The repository, mined from salt beds beneath the desert, is designed to permanently store about one million barrels of wastes from the manufacture of nuclear weapons. The wastes are contaminated with plutonium, which remains radioactive for 100,000 years.

For 18 months, the adequacy of the repository for storing radioactive wastes has been challenged by reports in and out of the Energy Department.

In 1987, state scientists in New Mexico disclosed that water was seeping into the underground chamber far faster than expected.

This month the department confirmed that the chamber's salt walls are closing in on each other at a rate two to three times faster than expected.

ed a development that could jeopardize the ability to retrieve wastes in case of a severe problem.

In addition, Congress and the department's safety officers continue to run into severe problems finding design documents that assure the quality of the repository's construction.

In one incident disclosed today, the department apparently destroyed reports that were needed to confirm the quality of a concrete structural component designed to keep the repository's main elevator shaft from collapsing.

In another indication of the confusion over documents, the department said that a longtime engineer, Howard Taylor, was the only person in Carlsbad who knew how and where to find reports, diagrams, engineering drawings and other studies.

"It sounds like this whole \$700 million project could go down the tubes if, God forbid, Howard Taylor disappeared," Mr. Synar said.

HAND-DELIVERED

2737 Mexano E.R.  
Albuquerque, New Mexico 87110  
June 13, 1989

W. John Arthur, III, Project Manager  
Attn: SIS Comments  
WIPP-SIS Project  
P.O. Box 3400  
Albuquerque, New Mexico 87115

Dear Mr. Arthur:

Enclosed is a petition signed by 23 people who oppose WIPP and want it ~~completely~~ decommissioned.

Very truly yours,

*Noblesse Oblige*  
NOBLESSE OBLIGE

/no  
Enclosure

MY NAME IS NOBLESSE OBLIGE AND I AM A RESIDENT OF ALBUQUERQUE IN THE STATE OF NEW MEXICO. ALTHOUGH YOU ONLY SEE ONE PERSON STANDING HERE, I WOULD LIKE YOU TO PICTURE TWENTY-THREE PEOPLE STANDING HERE, BECAUSE THAT'S HOW MANY SIGNED THE RATHER HASTILY-DISTRIBUTED PETITION I HAVE FOR YOU. WE ALL WANT WIPP DECOMMISSIONED.

FIRST, I WANT TO NOTE THAT WE AMERICANS ARE CONSTANTLY TOLD HOW LUCKY WE ARE TO LIVE IN A DEMOCRACY. BUT WHEN AN ISSUE COMES UP WHOSE IMPLICATIONS ARE AS FAR-REACHING AND IMPORTANT AS WIPP, ARE WE GIVEN AN OPPORTUNITY TO VOTE ON IT? NO! WE ARE GIVEN THESE TAKEN PUBLIC HEARINGS. OUR NAMES ARE WRITTEN DOWN AND, AT THE VERY LEAST, PUT ON BLACKLISTS BY OUR SO-CALLED "REPRESENTATIVES." THIS MIGHT AS WELL BE CHINA, AND I'M THOROUGHLY DISGUSTED.

BUT, TO GET DOWN TO THE BASIC TOPIC HERE, I HAVE READ MUCH OF THE WIPP-SIS DOCUMENT, AND I REMAIN TOTALLY UNCONVINCED THAT THE REQUISITE DEGREE OF SAFETY IS EVEN POSSIBLE RELATIVE TO WIPP, MUCH LESS ASSURED. ALTHOUGH RESPLENDENT WITH SCIENTIFIC AND TECHNICAL POSTURING, THE WIPP-SIS WAS SO LACKING IN BASIC COMMON SENSE THAT I MIGHT AS WELL HAVE BEEN READING TEA LEAVES.

AS A SMALL EXAMPLE, ARE WE SUPPOSED TO BE REASSURED BY THE STATEMENT THAT TRANSPORT PERSONNEL WILL BE TRAINED HOW TO HANDLE AN ACCIDENT? ANY ACCIDENT THAT IS BAD ENOUGH TO RELEASE CONTAMINATION WOULD UNDOUBTEDLY RESULT IN THE TOTAL DISABLERMENT IF NOT DEATH OF THE TRANSPORT PERSONNEL. YOU MIGHT AS WELL GIVE A SOLDIER AN EMPTY GUN. AND FOR THOSE PERSONNEL THE WIPP-SIS SAYS WILL COME TO THE SCENE, HOW MANY WILL THERE REALLY BE? HOW WELL-TRAINED REALLY? AND HOW LONG WILL IT TAKE, REALLY? WE'VE BEEN GIVEN FALSE ASSURANCES LIKE THESE MANY TIMES BEFORE.

THE REPORT ALSO INTIMATES THAT THE WIPP SITE WILL PROBABLY BE DISMANTLED AFTER ITS 25-YEAR LIFESPAN, LEAVING BEHIND "DURABLE WARNING MONUMENTS." MAKING THE INCREDIBLE ASSUMPTION THAT THE "DURABLE WARNING MONUMENTS" WILL REMAIN UNDAMAGED AND LEGIBLE THROUGHOUT THE 14,000-YEAR SPAN OF DANGER THIS FACILITY WILL PRESENT. HOW CAN YOU ASSUME THAT SOMEONE STUMBLING ONTO THE SITE 500 OR 1,000 OR 5,000 YEARS DOWN THE ROAD WILL NECESSARILY READ ENGLISH? THE ENGLISH LANGUAGE DID NOT EVEN EXIST IN THIS PART OF THE WORLD AS RECENTLY AS 500 YEARS AGO. NO, THE SITE WOULD LOGICALLY HAVE TO BE GUARDED FOR THOUSANDS OF YEARS, A TERRIFYING RESPONSIBILITY AND EXPENSE I DON'T THINK WE SHOULD HAND DOWN TO THE THOUSANDS OF GENERATIONS THAT WILL FOLLOW US.

THESE ARE BUT A FEW EXAMPLES OF WHY WE JUST CAN'T TRUST THE DOE TO HANDLE WIPP IN A SENSIBLE MANNER. WE ALSO CAN'T TRUST IT TO HANDLE WIPP IN A RESPONSIBLE MANNER. WHY? WIPP IS TO BE MANAGED BY THE SAME PEOPLE WHO HAVE ALREADY PROVEN THEMSELVES INCAPABLE OF MANAGING THESE DEADLY WASTES WHERE THEY ARE CREATED -- ROCKY FLATS. FOR ONE EXAMPLE, IF CONTAMINATION CAN'T BE PREVENTED AT THE SOURCE OF THESE WASTES, WHY ON EARTH SHOULD WE TRUST THE GOVERNMENT'S HANDLING OF THESE MATERIALS FROM THOUSANDS OF MILES AWAY THROUGH TO THEIR ENTOMBMENT HERE IN NEW MEXICO??? IF OUR

1-2

2.3-2  
3.3-4

2.31-2  
3.1-2  
3.1-8

3.2-1  
7.12.8-1  
7.12.8-3  
7.12.8-7

7.12.11-1  
7.12.11-4

3.2-1



GOVERNMENT CAN'T EVEN KEEP A KNOWN ALCOHOLIC FROM BEING ASSIGNED CAPTAIN OF THE EXKON VALDEZ, WHO IS IT GOING TO ALLOW TO RUN CRITICAL PARTS OF THIS OPERATION -- CLOSET TERRORISTS?

ULTIMATELY, TOXIC AND NUCLEAR WASTES ARE MERELY A SYMPTOM. LACK OF CONSERVATION, IGNORANCE, OVERPOPULATION AND GREED ARE THE DISEASES. I WANT A REAL CURE -- NOT JUST THE PLACERS OF NUCLEAR WASTES AND THE SO, UNTIL PRODUCTION OF NUCLEAR AND TOXIC WASTES IS ELIMINATED. ALTOGETHER, I SAY DEAL WITH THOSE WASTES WHERE THEY ARE CREATED. DON'T BRING TOXIC PLACERS AROUND TO ANY MORE SITES, ESPECIALLY IN NEW MEXICO WHERE RESIDENTS ALREADY LIVE WITH THE DAILY THREAT OF LOS ALAMOS LAKE. WE HAD AND URANIUM MINE CONTAMINANTS. IF YOU MUST MOVE IT, MOVE THE STUFF IN THE MIDDLE OF WASHINGTON, D.C. I WOULD HAVE THEM OUR SO-CALLED LEADERS WOULD REALIZE THAT SAFE SOLUTIONS TO THE REAL PROBLEMS MUST BE FOUND.

I REALLY DON'T BELIEVE ANYTHING WILL STOP THIS NUCLEAR MADNESS SHORT OF AMERICA'S VERY OWN CHERNOBYL, OR WORSE. THREE-MILE ISLAND CERTAINLY WASN'T ENOUGH. BUT I AM PROUD TO HAVE ADDED MY NAME AND 23 OTHERS TO THE LONG LIST OF THOSE WHO CONSIDER THE ENVIRONMENT NOT A SPECIAL INTEREST, BUT A PRIMARY INTEREST. PLEASE EXOT THE MADNESS!

Transcript of a speech made by Noblesse Oblige at the Albuquerque, New Mexico, DOE/NIFP-SRIS hearing on June 13, 1989.

3.2-1  
1.2  
3.1-8  
3.2-1  
3.6-1  
4.1-2

I APPROVE ALTERNATIVE 3 (NO ACTION) OF THE NIFP/SRIS DOCUMENT WHICH WOULD COMPLETELY DECOMMISSION THE NIFP SITE AND PREVENT ANY STORAGE OF NUCLEAR WASTES THEREON. I DISAPPROVE THE OTHER TWO ALTERNATIVES ALLOWING CLOSURE OF NUCLEAR WASTES ON THE NIFP SITE.

Name	Address	Date
Noblesse Oblige	1737 Maryland NE Albuquerque, NM 87110	5/8/89
Name Noblesse Oblige	Address 1737 Maryland NE, #17 Albuquerque, NM 87121	Date 5/9/89
Name David Washburn	Address 4112 W. 1st St. Albuquerque, NM 87102	Date 5/12/89
Name Barbara Landoltis	Address 4000 Alameda NE Albuquerque, NM 87109	Date 5/12/89
Name Karen Hayes	Address 4000 Alameda NE Albuquerque, NM 87109	Date 5/12/89
Name Jane Yee	Address 5702 Palmyra NW Albuquerque, NM 87109	Date 5-4-89
Name Jane Yee	Address 3512 FEFED, NE Albuquerque, NM 87111	Date 5-10-89
Name Juan A. Gonzalez	Address 289 East Ray Ave. Belen, NM 87002	Date 5/10/89
Name Emily M. Fourn	Address 308 Second St Albuquerque, NM 87121	Date 5/11/89
Name Harlowe Foster	Address 124 W. 4th St Albuquerque, NM 87102	Date 5/18/89
Name Kathleen Kinschiff	Address 1996 1/2 N. 1st St Albuquerque, NM 87107	Date 5/18/89
Name Chris Jones	Address 1996 1/2 N. 1st St Albuquerque, NM 87107	Date 5/18/89
Name Chris Jones	Address 1996 1/2 N. 1st St Albuquerque, NM 87107	Date 5/18/89
Name Sara G. Johnson	Address 6112 Harmony Ln Albuquerque, NM 87107	Date 5/18/89
Name Robert C. Kinton	Address P.O. Box 581-B Albuquerque, NM 87103	Date 5/18/89
Name Polly Hines	Address 1100 Melville St Albuquerque, NM 87109	Date 6-2-89
Name Bertha Sald	Address 1100 Melville St Albuquerque, NM 87109	Date 6-2-89
Name	Address	Date
Name	Address	Date

I APPROVE ALTERNATIVE 3 (NO ACTION) OF THE WIPP/HEIS DOCUMENT WHICH WOULD COMPLETELY DECOMMISSION THE WIPP SITE AND PREVENT ANY STORAGE OF NUCLEAR WASTES THEREON. I DISAPPROVE THE OTHER TWO ALTERNATIVES ALLOWING STORAGE OF NUCLEAR WASTES ON THE WIPP SITE.

Name	Address	Date
John E. Deau	2731 W. 14th St. N.E. Apt. 81110	5-8-89
LEON LEVY	315 S. W. LARSEN, N.W. AVE. #4	5-8-89
SARA BARNHART	315 S. W. LARSEN, N.W.	5/8/89
James D. Vandorpe	409 CARDEWAS N.E.	5/11/89
Robert J. Van Dyle	2573 E. FORTLAND	5/22/89
BARRY A. SEBOL	610 RICHMOND N.E.	6/7/89
LEONIE STONE	323 ATLANTIC S.W.	6/10/89
William K. Bean	323 Atlantic Ave. S.W.	6/10/89
Kevin Strick	1246 7th St. N.W.	6/10/89
Susan E. Houston		
Name	Address	Date
Name	Address	Date
Name	Address	Date
Name	Address	Date
Name	Address	Date
Name	Address	Date
Name	Address	Date

TESTIMONY ANTI-WIPP - JUNE 13, 1989

From David S. ... 110 Interstate, Apt. 8, ... 703 578 5585, ... 87706

I am no nuclear physicist, but I have learned a great deal about the religion of ... technology. What were the experts' prediction and assessment of the Teton - that engineering marvel and glory line on the high seas. The high priests of technology called it "impossible". How's that for futurism? Is it dogma?

Three months before Chernobyl, ... how many Soviets expect publicly predicted that disaster?

What did U.S. experts say was the mathematical probability of 79,000 ...?

In 1986 millions gazed at the space shuttle flying and ground. ... they were gone - miles of fetal ...

What did the highly paid and prestigious ... of an Alaskan ... oil spill before it actually happened?

In the early 1950s, what did the ... predict about the cost of electricity from nuclear power? Energy ...

What did the government expect, still, the U.S. ... to nuclear ... in Nevada and Utah in the 50s? To ... following - government experts tried to ... the ... of ...

How could the industry and government expect  
 us through this talk for years to the thousands of  
 victims of Agent Orange?  
 Another - The "unsinkable" Titanic and the spectacular  
 Challenge were not carrying radioactive poison  
 deadly for thousands of years.  
 Nuclear radiation has no threshold of safety.  
 Such poison has one purpose - to isolate a  
 naive and gullible public mesmerized by the  
 religion of technology. The trust is - from you up  
 the more radiation the more terrifying cancer  
 deaths, the more immune system damaged and  
 the more children born physically or mentally  
 handicapped.

If a frog is placed in a pan of cool water  
 and the water is heated slowly, the frog will  
 not jump out. It acclimates to rising temperature  
 and its own destruction. What a picture of many  
 New Mexicans - silent, unaware, too trusting  
 accomplices in this our gradual annihilation - the  
 American tragedy astronomically multiplied.

We in the so-called enlightened 1980s tend with  
 moral condemnation upon the ancient Cherokees  
 and Apaches for sacrificing their own food and their  
 children to their gods. But the US government is  
 playing with the lives of children for thousands of  
 years upon the altar to be readily sacrificed -  
 playing Russian roulette with our descendants.  
 How many thousands 50 years ago would have predicted  
 the global ecological catastrophe occurring? And how  
 realistic today? How many predicted the global nuclear war  
 affecting 4000 to the next 24 000 years? Tell about  
 religious insanity!! Science at the service of man.

3.4-1  
4.1-1  
7.14-13

3.2-1

June 15, 1989

My name is Juneble Rojas, my address is 1146 Besser Dr., N.E.,  
 Albuquerque, New Mexico 87106. Thank you for the opportunity to  
 make a comment about the proposed WIPP site. My remarks will be  
 brief and focus on only a couple of my concerns about the project.

1) Based upon what I have read about the WIPP site, ranging from  
 articles in scientific magazines to the New York Times, and from  
 testimony at these hearings from individuals with scientific  
 knowledge and expertise, I am persuaded that the proposed WIPP site  
 is absolutely unsuitable and potentially dangerous. I believe that the  
 Department of Energy is under great pressure to open WIPP despite its  
 unsuitability and will try to avoid, if at all possible, obiding by National  
 Environmental Protection Agency guidelines. I agree with the  
 recommendations of the General Accounting Office (September 13,  
 1988) "that DOE's defense complex facilities should be independently  
 reviewed. Recent developments within the DOE complex have  
 reinforced this view. With respect to WIPP, independent oversight  
 would increase public confidence that DOE is taking a prudent course  
 of action to ensure that WIPP can be operated safely." This  
 recommendation for independent oversight is even more critical in  
 light of the recent revelations about Rocky Flats. The Department of

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3.1-2

3.1-6  
3.2-1

Justice investigation of Rocky Flats reveals that the DOE may be incapable of handling nuclear waste in a responsible manner. If this is the case, then there must be an independent oversight and independent review to not only increase public confidence in DOE but to protect the public from the possible negligence of DOE.

The other point I wish to make is that I believe the word 'Pilot' in Waste Isolation Pilot Plant is a misnomer. There is nothing experimental about this project. Once the nuclear waste is buried it is permanently buried. There is no way to retrieve the material once it has been buried since it is too hazardous and too costly to do so. No monies have been allocated for retrieval because it cannot be retrieved and re-buried elsewhere in case the site proves unsafe for whatever reason. There is now substantial scientific evidence that the best burial site is in welded tuff and future burial sites will not be in soft beds, as it is now clear that soft beds are not a suitable burial site. If WIPP does finally open despite all the persuasive evidence that it should not, it will be a unique, one-of-a-kind hazardous site - a monument to governmental haste, waste, and ineptitude and blatant contempt for public health and safety.



3.1-6  
3.2-1

7.7-4  
7.12-4

7.7-3

3.1-2  
3.2-1

STATEMENT OF ADINA JO DOCTER  
AT DEPARTMENT OF ENERGY HEARINGS  
ALBUQUERQUE, NEW MEXICO

JUNE 13 AND 14, 1989

Gentlemen at DOE:

I appreciate this opportunity to share my statement with you through the gracious of Ms. Fisher.

First, let me tell you that I am appalled at the apparent steamrolling of this plan and have many questions regarding your decision to forgo compliance with Environmental Protection Agency safety standards before transporting and storing wastes at the WIPP site.

I question your desire to hold an "experimental" phase wherein you will store these technical wastes for five years before deciding whether or not the site is safe. How can you place your responsibility to be accountable to the Environmental Protection Agency? I wonder, are you worried that WIPP can never comply with these standards? Or, do you have so much invested in this plan that you can not see it objectively? If this is true, then perhaps it is time that you allowed for a study of the site by independent scientists and that you committed yourselves to abide by their results. Are you really willing to put the land and lives of the people of New Mexico at risk just to see this project completed?

If the assumptions which underlie the WIPP project have long since been disproven, isn't going forward with the plan what you gentlemen would call "bad science"? How can you go forward after discovering brine migration at the site? Do you really want to put nuclear wastes at a site that leaks? (Is this an appropriate place for an "experiment"?)

I can assure you that we citizens of New Mexico are not willing to put our lives and lives at risk for the sake of a nuclear waste dumping "experiment" in our backyard. I can further assure you that I and many of the people in this room are willing to put our lives on the line to stop this plan from going forward. If you continue to steamroll your plan to store nuclear waste in what amounts to a leaky sink, we will be there to blockade your trucks at every intersection of this state.

3.1-3

3.1-2  
3.1-3  
3.1-6  
3.2-1  
3.7-1  
5.1.1-1

3.2-1

Statement of Adina Jo Doctor  
Page Two

This we will do because the prospect of land which will be unusable for the next twenty four thousand years and the death of our children is an unacceptable price to pay in the deadly bargain which you have thus far proposed to us.

I conclude by imploring you to search your conscience and to reconsider this plan.

Sincerely,



Adina Jo Doctor  
2315 Shigman  
Albuquerque, NM 87105  
505-877-10571

3.2-1

UNITED STATES DEPARTMENT OF ENERGY  
ALBUQUERQUE PUBLIC HEARING ON  
SUPPLEMENT TO THE ENVIRONMENTAL IMPACT STATEMENT

I thank the Department of Energy (DOE) for having these hearings on the Supplement to the WIPP Environmental Impact Statement. They give the interested public an excellent chance to be heard and ask questions that may concern them or their property.

I have been involved with the storage of radioactive waste in Eddy County and southeastern New Mexico since the fall of 1971. The nature of these materials demands safety in proceeding with all functions of safe keeping these wastes.

In 1978, I was present with Mayor Walter Gerrells, City Manager Claude Tabor, State Representative Jack Skinner, and William P. Armstrong of DOE's Albuquerque Operations Office when this Carlsbad group told Mr. Armstrong the waste would have to be retrievable until the facility proved satisfactory for radioactive waste storage. Mr. Armstrong took the promise the Carlsbad legislative delegation made the New Mexico Legislature to his superiors in Albuquerque and Washington, D.C. The DOE has since always honored this Carlsbad request. We have had this same class of treatment from DOE on questions pertaining to safe handling of the radioactive waste to be placed in WIPP.

There is open, brood, and constant communication between WIPP management and Carlsbad leaders. The public is kept informed through the media.

The Carlsbad public and our Eddy County and city officials have supported WIPP and its mission from the beginning even when the economy of our area was better and that support continues. The Carlsbad media supports the Project. We find similar support for WIPP in other southeastern New Mexico cities.

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The city officials of Carlsbad and Eddy County supported the formation of the New Mexico Environmental Evaluation Group in 1978. This group provides oversight of the WIPP Project for the State of New Mexico. That support continues and I believe that this group has contributed much to the safety of the WIPP Project and to the acceptance of the Project by the public.

Carlsbad has its share of WIPP workers. When the patch, oil and gas bottom dropped out causing the unemployment rate to reach over 17%, WIPP was the leading industry feeding our town by providing over 700 jobs. This generated much business for local suppliers, the retail trade, and kept many employees at work.

Most of the employees live in Carlsbad. These workers have been trained and participated in programs to ensure WIPP safety. The workers are intimately familiar with design, construction, and operation of the WIPP facility. They have developed confidence in this facility and its management.

The Supplement to the WIPP Environmental Impact Statement examines three action alternates. My support is for DOE's proposed action: "Proceed with a phased approach to determine whether WIPP should become a repository for the disposal of transuranic waste."

Thank you for this opportunity to present my position on the Supplement to the WIPP Environmental Impact Statement.

*Joseph E. Cant*  
JOSEPH E. CANT  
MEMBER TO SENATE (1968-1984)  
DISTRICT 34

June 13th, 1989

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My name is Harry Kinney. I am a Mechanical Engineer and Contractor. My longtime interest in nuclear energy started in 1949 when I took a two week training course in Radiological Safety from the Navy at Treasure Island. Between 1956 and 1973 I worked for Sandia National Laboratories. I served as Mayor of Albuquerque for two terms. I am a long time member of American National Energy. Although I am not a member of the National Energy, I am speaking only for myself since what I have to say has not been approved by the board of the organization.

One of my major assignments at Sandia was designing, fabricating and fielding experiments at the underground test facilities at Mercury, Nevada. In this position I worked for many years in close contact with nuclear materials. I would construct test models using plutonium, uranium, and other materials. After the models were exposed to high radiation and shock I with others would remove them to the Albuquerque lab for disassembly, cleaning, and study. Incidentally, I had lost most of my hair before I joined Sandia.

The residue of these experiments is on of the many items that have been stored for many years waiting for a permanent repository.

In spite of my many years of experience I do not feel I am qualified to accept the position of a scientist who handles the sensitive job that results in the environmental impact statement that is being discussed today. I am completely convinced that the WIPP repository is infinitely better than the surface storage where my experiments have been held for these many years.

I am submitting with my statement a letter to the editor that appeared in the Albuquerque Tribune about eight years ago. The letter basically urges voters to vote for anybody but WIPP in the election for mayor because that favored the interests of WIPP. The fact is that WIPP has been demonstrated in that letter is still very evident from the statements made by many of the anti-WIPP activists today. In the ten years I was Mayor of Albuquerque I was never called on the make a decision or take an action on the WIPP Project. I feel the letter was an attempt to intimidate me.

I am going to make some statements about the paid, anti-WIPP, anti-nuke, professionals who have made false and misleading statements for many years about WIPP: the Department of Energy, the Department of the Interior, the U.S. Environmental Protection Agency, and the U.S. Senate. I believe that a broad dissemination of the facts about a major project should be made. People have a right to know. However, when the hearings are used to spread lies and distortions that are

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orchestrated by a group of paid professionals whose jobs were to irritate, to delay and distort, I feel the purpose of the EIS hearing is violated.

The Federal Government has not done a bad job of handling nuclear and hazardous materials at Sandia or Los Alamos. I limit this discussion to the two locations with which I have first hand knowledge and will not discuss Rocky Flats or Fernald.

Since 1943 nuclear material has been handled at Los Alamos and Sandia. At the time they started little was known about the material and it was considered to be dangerous. Under the frantic conditions of the war and the arrival of the engineers developed methods of refining, handling, machining, and fabrication of various radioactive materials. They developed a means of safely storing the waste material that was not ideal but has served well as an interim measure. I do not know of one documented injury or illness that can be attributed to the handling and storage of radioactive material at these locations. Considering the lack of previous experience in this field, I think this a remarkable record.

At Los Alamos they had to build a building to house a machine shop to machine the material. About twenty years ago that building was torn down and areas of contamination cleaned up. Now, attractive, safe town houses stand on the site.

At Sandia there has been criticism of small amounts of chromia migrating beyond the boundaries of a hazardous waste surface disposal site. It is true that chromia is still 300 feet from the water table. Until the early 1950's the City of Albuquerque was dumping all its wastes including that now classified as hazardous in a dump between South Second Street and the river. All the hazardous wastes generated by the plating operations and battery shops are still there right in the water table. By comparison, Sandia and Los Alamos did an excellent job.

I am particularly distressed at criticism leveled at the outstanding engineer, scientist, and technician who has spent such of the past fifteen years at Sandia and WIPP. The critics, with little background or education consider themselves more qualified than the persons who have performed the work. Sandia could and did hire the "cream of the crop" to develop the technology of WIPP.

While I was working in the tunnels at Mercury twenty five years ago Dr. Weart was the lead geologist designing the tunnels and determining whether they were safe for the waste. He was the one who suggested a tunnel. I was betting my life that Dr. Weart knew what he was doing. In spite of what you have heard today the Sandia scientists were usually right.

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Recently I attended a WIPP forum at the University. When I suggested that the transuranic waste would be safer 2100 feet below ground than it is presently at Los Alamos on the surface, above the water table, and near and above the Rio Grande, above the water table, Mr. Hancock was that only 30% of the capacity of WIPP was for burning waste and the balance was future generated waste. Does Mr. Hancock's logic follow that WIPP should have been built for existing waste or something else be done for future waste? Or does he think that the world including the US will suddenly abandon the use of nuclear energy?

At that meeting Mr. Aly gave a distorted lecture on the ready characteristics of nuclear material with no logical tie with the actual properties of the wastes that will go to WIPP. He repeated the usual horror stories about plutonium but failed to mention that the wastes are not to be a death attributable to plutonium among the thousands of Alamos workers who have worked with it during the past 45 years. Alamos mentioned was the fact that several dozen employees of Los Alamos have particles of plutonium in their lungs and their health is comparable to unexposed workers of the same age group. Nevertheless plutonium is dangerous and should be treated with respect.

I urge that the WIPP EIS be approved, the facility be opened as soon as prudent, and the health and environment of our Nation be improved by the proper storage of our transuranic wastes.

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G. THEODORE DAVIS, M.D.  
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 (505) 243-7122

June 13, 1969

Before the U.S. Department of Energy, Hearing on the WIPP Project

Statement of Ted Davis, M.D.

I am an emergency medicine specialist, and in the past have worked as an emergency physician in several large and small H.M. Hospitals along the WIPP route. In general, I am aware of the capabilities of H.M. Hospitals to handle a variety of emergencies.

I have trained on three occasions during the last 10 years in emergency management of radiation accidents at the Department of Energy Radiation Emergency Assistance Center Training Site, in Oak Ridge, Tenn. In 1962 I was granted co-investigator status in the plutonium decontamination program of the DOE, and supplied with WIPA, the chelating drug used to remove plutonium from the human body.

During the last month, I have conducted a phone or in person survey of emergency personnel (physicians and nurses) at 17 different hospitals located on the WIPP routes. Three hospitals were in Colorado and 14 were in New Mexico. Also, I talked to a number of paramedic and fire department personnel.

I asked questions about equipment, training and overall preparedness to handle WIPP transportation accidents. The people I talked to are those on whom I think you will shoulder the responsibility for medical management of WIPP accidents. If mistakes occur, they risk the possibility of contamination and injury.

I intend to integrate the results of my findings as part of the following analysis.

The transportation of 34,000 truck shipments of nuclear and other hazardous wastes through 22 states to a Federal waste dump is an unprecedented project; a project of this scope and magnitude has not previously been undertaken here or elsewhere.

My underlying premise is that the transportation of 34,000 truck shipments of transuranic, fission product, and toxic chemical contaminated wastes through New Mexico constitutes a most serious threat to public health and safety, and that this threat can only be mitigated by appropriate, extensive, national, regional and statewide emergency medical preparedness.

The ability of a facility to appropriately handle a particular emergency situation is defined by six criteria:

1. expert pre-hospital emergency care (training, equipment, drugs)
2. communication and overall organization to deal with emergencies
3. appropriate physical environment with facilities to perform the service
4. appropriately trained and experienced medical personnel
5. immediate access to the necessary specialized equipment and drug back-up for extraordinary circumstances beyond the scope of the facility
- 6.

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Let us briefly take the emergency situation of cardiac arrest as an example.

Criteria 1.

DNR or Paramedic in the field must be trained in identifying cardiac arrest, and have the skills to perform Cardio-maltery resuscitation. They need an ECG machine to detect the presence or absence of electrical activity of the heart, and a defibrillator to shock the heart into functional activity. A variety of drugs, like epinephrine and lidocaine, are needed to further treat this cardiac catastrophe. Finally, there must be a transportation system to take the victim to the hospital.

Criteria 2,3,5

The hospital emergency room must have a staff of physicians, nurses and many other key personnel on hand, and there must be a laboratory the cardiac arrest victim can be treated during this code situation. Available in that room must be all the necessary resuscitation equipment, and a variety of different drugs.

Criteria 4

The current medical standard is that the physician in attendance must be trained and certified to be skilled in the management of cardiac arrest by the American Heart Association. Nursing personnel must also be trained and certified.

Criteria 6

In certain circumstances, medically unstable arrest victims might be transported to a "heart center" for continuing care and treatment. An analogous situation would exist for major trauma victims.

I believe that if the public were to consider our New Mexico Emergency Medical Services and Hospitals, they would conclude that this sort of mechanism is indeed in place, not only for heart attack victims, but for people suffering from trauma and a number of bewildering maladies.

This is what we need. This is what we expect. This is what we deserve.

Now, let us now examine, using the six criteria stated above, the preparedness of our health care system to deal with a WTP transportation emergency. I define WTP emergency as a highway accident has occurred involving a truck or train carrying WTP. In one or both of the following situations exist: people are injured, with some of those questionable radiological contamination; people are not injured, but may or may not be contaminated radiologically.

These situations do constitute bonified emergencies; medical care for victims, assessment and treatment of potential radiological contamination, with the victims, are emergencies. The medical community, including first responders, health care workers, physicians, nurses, hospital administrators and others will immediately become involved.

Criteria 1 -- pre-hospital care

Westinghouse and DOE have trained themselves highly for providing a two day course to about 20 percent of the State's WFFs, firefighters and police concerning WTP. Considering the facts that (1) the turn-over of these personnel, especially in rural areas, is very high (2) two days of didactic lectures translates very poorly to the actual field situations, we are little better prepared by this miniscule effort.

I was informed that a fireman who had attended one of the Westinghouse WTP training sessions remarked to the instructor: "Well, you've convinced me that this waste is safe, I'll take a six pack home with me." If that is a reflection of the seriousness with which Westinghouse is educating our emergency responders about the hazards of plutonium and other incredibly toxic and long-lived isotopes, we have a serious problem.

Some emergency responders have been issued filtered respiratory masks, paper gowns and gloves. Some fire crews have gotten respirators. A few fire departments have self-contained breathing apparatus for working in toxic environments. Considering that standard geiger counters are usually worthless in detecting radiation emitted from the dominant isotopes (Plutonium), and considering that the proper protective respirators are not prepared to easily enter a dangerous radiological environment, nor even detect the major type of radiation associated with WTP transuranic waste.

Conclusion: fail criteria 1

Criteria 2 -- communication and overall organization

In order to have effective communication and organization, there must be a common language. For medical personnel I have talked to know the difference between a fissionable and a stable particle, or have a sound understanding of the biological effects of radiation. Few medical facilities have organized themselves to specifically handle a radiological emergency.

Even our excellent poison control center, with whom we emergency physicians often communicate and rely upon for information in matters of radiation exposure and poisonings, has limited information on radiological emergencies and treatment.

Conclusion: fail criteria 2

Criteria 3 -- appropriate physical environment

Only two or three hospitals currently have a separate designated location within their facility for decontamination purposes. One person told me that their plan was to take the victim into the parking lot and hose them off. That comment speaks for itself.

Conclusion: fail criteria 3

Criteria 4 -- trained and experienced medical personnel

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I have spoken with over twenty emergency physicians - with one or two exceptions, neither they nor any physicians that they have had received specific training in radiation emergencies, much less specific training on VIPP. Bureaus at various hospitals have told me the same thing. The almost universal response to the question--are you trained and equipped to manage a VIPP accident--is no.

Conclusion: fail criteria 4

Criteria 3 -- Immediate access to necessary specialized equipment and drugs With the obvious exception of Los Alamos Medical Center, not one of individuals I spoke with from the 17 hospitals I spoke with had a radiological survey instrument that could detect alpha radiation, the primary hazard from most of the VIPP waste. Remember, standard gerdar counters are useless for detecting most VIPP waste. So hospitals could detect whether an alpha emitting isotope was contaminating a victim's secret clothing. The "good thing" about radiation is that it can be readily detected if the proper equipment is at hand. An alpha detecting gerdar counter modification is expensive, around \$1,000.

Not one facility, including Los Alamos Medical Center, had the chelating drug for internal plutonium decontamination (DTPA) on the premises, although Los Alamos said it could be delivered from LRL on an urgent basis. Except for Los Alamos, no one had ever heard of DTPA. The same was true for the drugs used to treat Cesium and Strontium contamination (Other major isotopes coming to VIPP).

DTPA, the chelating agent used to treat plutonium contamination, should be given within the first 24 hours of suspected internal contamination to have maximum benefit. It takes several weeks to get a supply of the drug from ERACTS. Only a physician authorized by the DOE can order the administration of the DTPA.

With few exceptions, decontamination tables and other equipment were not available. Some hospitals had heard of them, but had not been able to obtain them because of cost.

By the way, DTPA is available from only one source in this country--the U.S. Department of Energy, via ERACTS.

In November of 1981, I contacted Dr. Loughbough at Oak Ridge Associated Universities, the DOE facility associated with Oak Ridge Y-12 Plant Laboratory, and requested a supply of DTPA, stating as one of my reasons to have the drug the imminent transportation of plutonium and americium waste through WH to VIPP.

His January 6th, 1982 letter concluded, "You make your points well in support of your need to be prepared for actinide incorporation and accordingly we are giving you co-investigator status (in the use of DTPA). You will receive a supply of these drugs shortly."

So apparently in 1982, at least, DOE radiation experts thought having DTPA on hand to manage a VIPP accident was medically appropriate.

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Criteria 6 -- Back-up for extraordinary circumstances beyond the scope of the initial facility

New Mexico has a designated trauma centers and heart centers. No comparable facility exists for VIPP and other radiological emergencies. Where would multiple contaminated and injured victims be treated? Who has the expertise to manage this type of problem.

Conclusion: fail criteria 6

Unlike our analysis for cardiac arrest emergencies that demonstrated we adequately prepared, our analysis of VIPP transportation above were a long, long way from being emergently and medically ready.

Dr. Tom Burgraves, representing the American Academy of Emergency Physicians (Emergency doctors are those are the doctors in the emergency rooms who handle the calls to experts on VIPP and radiation if an accident happens) has succinctly stated New Mexico is not prepared medically to handle VIPP.

WHAT THEN, CAN BE DONE?

First, the DOE, Westinghouse, and our state officials need to refrain from telling us that we are currently prepared for VIPP. The independent experts, the physicians and the nurses, say we are not. I submit that they are more credible than the bureaucrats who keep saying the opposite. PAY ATTENTION!

Second, our state and local officials need to stop translating their opinion that the risk of a VIPP accident released significant amounts of radioactivity into the human environment is "unacceptably small" into a public policy that has so far effectively undermined any realistic effort to get prepared.

Third, the DOE and state must work immediately with local emergency and other physicians like Dr. Burgraves and his colleagues, plus hospitals, emergency responders and the public, to realistically assess the costs and efforts necessary to adequately prepare the emergency response community and the medical consultants like you have everybody else. Pay these costs. In the EIS the implementation of the actions to medically prepare for VIPP that Dr. Burgraves outlined in his testimony earlier today.

Fourth, have the DOE fund the acquisition of the equipment and pay for the necessary physician, hospital and responder training. And have the funding support and training, including updating of equipment, continue through the life of the project.

Fifth, recognize that the cost of procuring adequate equipment and training not only to New Mexico, but the states in the VIPP route is a legitimate cost of the VIPP, and ultimately of the DOE effort. Let financial burden should not fall on the shoulders of the states. Let Congress know what the true costs are, let the citizens know what the true costs are. Put it honestly in the EIS and in the Federal budget. It won't be good news to anybody, but at least quit hiding behind the ubiquitous shield, "national security." Quit hiding other information. We have some serious problems on our hands. It is going to take a concerted group effort to get through it.

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Sixth, until all these recommendations are followed, get WTP on hold. Stop giving money to Westinghouse and other contractors until the problems of preparedness are resolved.

Seventh, don't open WTP till EPA standards are certain to be met.

Finally, I believe that Governor Carruthers' position stated against businesses that are concerned about WTP will have a chilling effect on the legitimate, necessary open and candid discussion needed from physicians, health care providers and others. Will the wrath of the governor and the awesome power of the state be used to punish health care providers who wish to educate the public about the hazards posed by WTP, or other activities endorsed by the governor?

To reverse this possible scenario, the Governor should immediately retract his anti-business position, and assure all of us that our state's governor and government fully endorse and actively support open, honest discussion and evaluation of matters that concern the health and safety of the citizens.

Respectfully submitted,

*Ted Davis*

Ted Davis, M.D.

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WTP Warning Statement

Lynnda Taylor

SRIC

PO Box 4524

Albany, WI 87106

I. My name is Lynnda Taylor; I work at SRIC, Director Radiation Health Project; served on Governor's Radioactive Waste Task Force; *7/8/89 4 Health*

~~was assigned to SRIC~~ *assigned to SRIC*

II. Main point I would like to make, WTP is not ready to open in September. ~~that should be addressed by the DOE before nuclear wastes are shipped to WTP.~~ *Numerous health and safety issues have*

These unresolved issues are not addressed adequately, and in some cases, not at all, in the SRIS.

III. Unresolved issues broken down into two categories, off site, or transportation, and on site. Due to time constraints, I will simply list these issues rather than discuss in any detail tonight. SRIC will have detailed comments for the record submitted before the June 27 deadline. I might add that 60 days to comment on documents of a technical nature that reach a height of 10-12 inches and weigh almost 20 pounds is totally inadequate, and I am disappointed that DOE refused to give the public more time within which to

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provide thoughtful comments. ~~Subject~~

A. Transportation. Twenty-three states; in over 30 committees, including ASD; 5218 1300 shipments per year, or around four to five shipments every single day, for 25 years.

1. Questions have been raised by several attorneys whether the routes DOE has chosen to transport nuclear wastes to MPP have been legally designated and therefore legally binding by the carriers;

2. The promised highway improvements along transportation routes have not been completed and will not be completed by September.

3. Promised bypasses around population centers have neither been funded nor built, and will take years to accomplish.

4. The TRUPACT transportation container for the contact handled wastes has not been certified by the NRC.

5. The shipping container for the wastes with higher radioactivity, the remote-handled wastes, has not even been designed, let alone tested or approved.

6. Emergency response personnel, including hospital emergency workers, have not been adequately trained or equipped. In fact, the DOE recently got out of its agreement to train NRC responders every year throughout the life of MPP and will only provide two years worth of training instead of 25.

8. On Site concerns. DOE wants to open MPP in three months, in September. DOE says it plans to have MPP ready to receive wastes then. But DOE and its paid contractors stand virtually alone in this assessment. Last year DOE made similar proclamations about MPP's readiness and said they were ready to open

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MPP in October. Congressional hearings held on MPP demonstrated this was not the case. Based on testimony presented at last year's hearing, Congress refused to pass the MPP land withdrawal bill which would have allowed MPP to open due to numerous unresolved safety concerns. Those same safety concerns, and some additional ones discovered since then, remain unresolved today. I will raise only the major problems relating to on site concerns at MPP. Simply, it all adds up to MPP has not been demonstrated as a safe site for disposing of the nation's military nuclear wastes. They include

1. According to the EDC, DOE has not demonstrated compliance with subpart A (operational safety) of EPA standards. Implementation to detect radioactivity during underground operations have not been shown to perform satisfactorily and EDC stated just yesterday during MPP Congressional investigation hearings that the health-physics program and procedures have significant deficiencies. DOE has not demonstrated compliance with EPA subpart B disposal standards either, and is using the experiments as a delay tactic to meet those standards.

2. The DOE's Draft Final Safety Analysis report, again according to EDC, is unclear, inadequate, incomplete, and contains numerous errors and faulty assumptions on the operational readiness of MPP.

3. DOE has not received and will not receive a permit under RCRA to ship mixed radioactive and toxic wastes to MPP until it either treats the wastes or shows that the wastes will not migrate.

4. Congress has not passed a land withdrawal bill authorizing MPP's opening.

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Conrad Glines to Nuclear Safety Environmental Evaluation Group

I thought a write prod. elementary class is such for the group and we did a unit of WIPP, which included background info and presentation by Westinghouse, CNS and EEB. As part of a review to help us understand what is going on, how to (P) distinguish between them. What is stated in testimony and how to action/procedure. The students were instructed to apply this knowledge to assess the presentations from the three groups and I'm glad to say they did very well.

I bring this up to Conrad Glines regarding the question of the majority of those who attend us on WIPP. The Westinghouse officials approached me the following statements and I probe:

1. No one has died from radiation so far.

Even the little grebes could not swallow this.

2. Possible in hypotheticals as such a statement.

1. Cb. As is customary, activity. B.I.S. H.I.E. to children who was assumed not to know better.

OR

2. Westinghouse totally out of touch w/reality and have no concept of danger of ~~poor~~ instead resulted in the product part of the one in a million.

Either way he would be impressed by possible good results.

He just gave people a good job. Why people who are in charge of a project or moral and potentially not dangerous as WIPP.

1. Either explanation seems to me. How would he immediately ~~publish~~ facilities to trust these people with WIPP.

The operation of the facility, poor to trust them. A providing the public with reliable info on which to base informed opinions.

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Loretta D. Cantor  
1803 Gold Av. S.E.  
Albuquerque, N.M. 87106

My name is Loretta Cantor. I'm a student of Communication Disorders at the University of NM here in Albuquerque. I am a native New Mexican and a former United States citizen. I'm concerned for the welfare of NM, the U.S. & the world as an effort to dumping nuclear waste at the proposed WIPP site in Colorado.

If you put a dangerous substance in an unstable setting, you are endangering the environment on a large scale. Would you build a lake and raise your family in the vicinity of a nuclear storage dump should on heavy that it were exp. because the containers are sealed.

We don't need another 3-7 mile

deluge

to listen to the radio & since

hardly reports from scientific study

how much the WIPP site is

drinking water that consistently

changing the area - that the

the Chernobyl were built after

all - and are still being built

political pressure, I hope will

not be the ultimate price

that decides this issue - as it

has in past cases and as

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the Vietnam War. It comes in the form of expense yet. So if we don't have jobs in 78% this is no way to create new ones or eliminate the workforce.

I don't think that just because there are a lot of Hispanics and Native Americans in this state, that we are ignorant. We speak English, we hear and see about what's happening to us and our surroundings. You cannot spread this "I'm behind our back".

There is a spiritual law, the law of cause & effect or another name is the Law of Karma. For every action, there is an equal opposite reaction; or stated differently: you reap what you sow. In substance, you put out, come back to you. We are all responsible for what we are doing. The nuclear industry is creating either energy or bombs, there is no such thing as created which is causing a problem. It cannot "just be buried" and the problem will go away. Like the trash being dug up from the sand! It's a kind of this

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problem which is creating more problems! The disposal of nuclear waste needs to be figured out by these scientists who are speaking in a safe way. Maybe it can be recycled into something harmless. Someone is a great sink water that has what you want to do to us now & by an earthquake or just by many drops of water through time, it did change the storage area & not more now exposed to deadly waste. We would be shocked, angry, victims of all the things that we cannot do this to our children.

I'm saying NO to nuclear waste stored in an or anywhere else. This is a problem who created by scientists, fleshing war plans for politicians. Scientists tried to find a solution now, before they any further in creating and about & ultimately the disposal of humans, animals & life as we know it - due to a power plant. Good water is happening in China due to unbridled power. I have

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beautiful people crying over the  
 of our growth and the future  
 & that's why I'm speaking out  
 now.  
 I'm spiritual law of balance  
 won't let the negative force  
 control you, long, the punishment  
 will bring back to the party  
 because it is a force that  
 spirit to and it's simply a  
 matter of where we place  
 our attention.  
 I love this planet & I love  
 my life just as I'm sure you  
 love yours!  
 Thank you.

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the  
**carlsbad**  
 department of development

June 13, 1989

My name is Chuck Bernhard. For the past two years, I have  
 been the Executive Director of the Carlsbad Department of  
 Development. I am submitting this testimony to you today on  
 behalf of the City of Carlsbad, Eddy County as well as some 70  
 businesses and individuals who support the operation and activity  
 of our organization in its attempts to stimulate new economic  
 growth in the Carlsbad area.

It is no secret that WIPP has been of benefit to our local  
 economy and currently employs over 600 persons. Nevertheless,  
 our past and current involvement with WIPP has never been, nor  
 is, nor ever will be an act of economic desperation. When the  
 leadership of our community first registered its support for  
 WIPP, the price of a barrel of oil was two to three times its  
 current value in real dollars and the potash industry, our most  
 basic industry, was pacing at a healthy level. With the  
 establishment of a pricing and production agreement with Canada  
 in early 1988, the potash industry has grown by over 300 jobs and  
 continues to show improvement.

Other areas of our economy have also shown marked  
 improvement. For instance, travel at the Carlsbad Caverns over



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Memorial Day showed a 25% increase over last year. Agriculture, particularly the production of alfalfa, is also showing an increase over previous years.

If the only reason underlying our support of WIPP is economic then why would we continue to support the project in light of our economy that is showing increasing strength in these other areas? And, if we only wanted WIPP for its jobs it provides then why did our Board of Directors recently unanimously pass a resolution against a proposal for interim storage of transuranic waste even though it could mean several hundred new jobs to our area?

The answer is simple. It is our belief along with Governor Andrews of Idaho that the storage of 55 gallon barrels containing radioactive waste on a concrete slab in a bubble tent is no solution to the problem of transuranic waste and we simply do not want that kind of use in or near Carlsbad. We are convinced that the permanent isolation of waste in bedded salt 2,150 feet underground is likely the solution and is certainly worth trying out. In addition, we are also convinced that DOE has taken increased precautions to ensure the safety of the project to the public and to the environment while the demonstration period is in progress.

Moreover, we believe it is critical that this project be "tested" with live waste in an amount of sufficient quantity that both the scientific and operational integrity of the project can undergo an accurate evaluation. Without a test of the project

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with live waste in situ, our community and the rest of the world will never really know and will never be assured that our beautiful river, lakes, mountains and caverns as well as our people will truly be protected. Who can argue that GMI community, Carlsbad, stands to lose more than anybody if WIPP is faulty?

In sum, we say lets give the project a chance over these next five years to prove itself. Therefore, we support the proposed action by DOE to proceed with a phased approach to determine whether the WIPP should become a repository for the disposal of TRU waste. Future generation will hold us responsible for creating a safer world and if we don't give WIPP this chance we simply are not acting responsibly.

③

New Mexico State Senate

State Capitol  
Santa Fe



COMMITTEE  
On Energy (Sub-Committee)  
Education

SENATOR LOUIS M. WHITLOCK  
D-0007-14  
1000  
Carmichael, New Mexico 87203  
New Mexico Telephone: 867-3447  
Home Telephone: 866-2427

Mr. W. John Arthur  
ATTN: SEIS Comments  
U.S. Department of Energy  
Albuquerque Operations Office  
P.O. Box 5400  
Albuquerque, New Mexico 87115

As a resident of Carlsbad and Eddy County, New Mexico for over 40 years, I wish to go on record in full support of the W.I.P.P. Project. In my judgment, this facility has a safety factor of more than 10 to 1 for what is actually needed for the safe storage of low-level and transuranic waste:

When you compare the safety aspects of W.I.P.P. with the other alternatives available, such as the above ground storage in Idaho or the rail cars in the switch yards at Rocky Flats, Colorado, there is no contest - The safe disposal of low-level waste in New Mexico has been there for 225 million years. Salt beds in Southeastern New Mexico have been there for 225 million years. Salt beds in the Southwest have not been a problem and is not likely to be one for the next 200 million years. The time for congress to act positively on the legislative land withdrawal bill in order that this project can prove to all concerned citizens that the project is safe. This is what the project is designed to do - - Prove conclusively that the salt beds are the best medium for the permanent storage of this waste after the five year test and experimental phase with the actual waste in place.

As one of the original community leaders to be involved in the development of the W.I.P.P. Project, I wish to emphasize that all of our community leaders have from the very first day stressed the need for absolute safety. After approximately 20 years of watching the project develop before your eyes, the people, the liter, and dozens of seminars, I am convinced the project can be safely located in the great scientific data - - not emotions - - proves otherwise, then I will be leading the charge to stop the project!

In regards to the shipment of these wastes to W.I.P.P., the TRUPACT containers far exceed any other transportation system that is presently

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Mr. W. John Arthur  
Page 2

hauling high level nuclear wastes on our nation's highways.  
I suggest that prior commitments prevent me from presenting this statement in person.

Sincerely,

Louis M. Whitlock  
New Mexico State Senator  
LAW/jc

(2)

3-1-1

YOUR HONOR:

My name is William Adair Gossett. I live at 603 Elora Drive, Carlsbad, Eddy County, New Mexico.

I am the owner of Gossett's Jewelry and have traded with and serviced the people of the Carlsbad area for over 49 years.

I am adamant in my support of WIPP.

WIPP IS SAFE

My testimony is not that of a Nuclear Physicist, Engineer, or hydrologist. I am testifying as a husband, father, grandfather, businessman, taxpayer, and a VERY proud American citizen, who believes in and works within our American system.

I am confident WIPP is safe. Most of my family, our homes, and our property are in Carlsbad.

I am a former Mayor of Carlsbad and State Director of the New Mexico Office of Civil and Defense Mobilization. As Director of NMOCDM, it was my responsibility to organize civil defense units - statewide - and create the New Mexico Survival Plan.

I have witnessed two nuclear detonations. One was Project Home near Carlsbad (an underground blast) and the other was a tower detonation at Frenchman's Flats, Nevada.

My experience in dealing with governments - federal, state, and local as well as the military, is lengthy.

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YOUR HONOR:

New Mexico has always been in the forefront of nuclear development and technology. The first uranium mine was at Grants; fine tuning of the atomic bomb at Los Alamos; detonation of the first atomic bomb near Alamogordo; and we should store, SAFELY, the transuranic waste at WIPP near Carlsbad and Loving 2150 feet underground.

I have traveled hundreds of thousands of miles on New Mexico roads and highways and would feel much safer following the TRUPACT truck with its cargo of transuranic waste than an 18-wheel tandem truck or a propane truck -- especially from Mexico!

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The proposed shipments of transuranic waste CANNOT BE EXPLODED BY ANY MEANS. IT WILL NOT HARM ANYONE PASSING THROUGH THE CITIES OR ON THE HIGHWAYS.

The WIPP Project is as safe as man can build and design it. The WIPP designers, technicians, scientists, and planners are the same type of dedicated professionals that were able to plan, fly, and land our United States Senator Harrison Schmidt on the moon!

The largest number of misinformed, anti-WIPP protestors are from the Santa Fe area.

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Many of us in Carlsbad respectfully request the Department of Energy to CALL Santa Fe from any transuranic WIPP shipment routing. This would accomplish two major things:

- (1) Obviously please hundreds of Santa Fe protestors; and
- (2) Eliminate the spending of over ONE HUNDRED MILLION dollars

(\$100,000,000) on unneeded by-pass roads in the area.

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The people in Santa Fe are being exposed today and everyday to more radiation and contamination problems than the residents of Eddy County will ever face with the safe storage of transuranic waste at WIPP.

WIPP IS SAFE -- IMPACT TRANSPORTATION IS SAFE!

Most of the top management of the WIPP Project have moved their families and children to live in Carlsbad. These are the people that are knowledgeable of radiation and the risks and what the negative effects can be to humans. Does anyone truly believe that if there was imminent danger that these people would risk their lives -- or the lives of their loved ones -- for a job? OF COURSE THEY ARE NOT GOING TO DO THAT!

There's risk in everything in life, but we minimize that risk by planning and the use of technology! Nuclear power can be the most abundant, least expensive, and safest power for all Americans.

WIPP IS SAFE

Let's all work together to regain America's rightful place as the leading nation of the world. WE NEED NUCLEAR POWER.

*Wm. Allen Hesseltine*  
Former Central Mayor

I moved to Carlsbad in 1952 with my husband and small daughter. We worked there, and raised and educated our daughter. We read, studied and observed the project from its beginning. We have toured the site several times. We have recently retired and could relocate if we desired but we have no plans of selling our home to leave as we are my comfortable with the project in Carlsbad. I had rather have the waste in paper containers in underground storage in Carlsbad in what the opposition calls my backyard than stored in barrels placed in ground that will rust or placed in streams in my friends and relatives front yard. We cannot go back to the dark ages. The nuclear age is here to stay and as citizens is our responsibility to store the waste. Carlsbad has the proper storage prepared, lets use it.

*Frances Ott Merritt*  
Carlsbad New Mexico 82320  
P.O. Box 459

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Larry Moore  
153 Daniel Circle, NW  
Albuquerque, NM 87107  
December 8, 1988

Editorial Department  
The New Mexican  
P.O. Box 2048  
Santa Fe, New Mexico 87504

Dear New Mexican,

Enclosed is a musical commentary on the state of the WIPP debate. Would appreciate it if you could print it in your letters to the editor section.

WIPP RAPP

Oh hey, oh say, can you see, what on earth that D.O.E.  
Plans to do down underneath? WIPP it!  
Bury in a nether space, nuclear and toxic wastes,  
Claiming it will go noplac, they'd WIPP it!  
Since it's an "experiment", D.O.E. says they're exempt,  
Don't need anyone's consent to WIPP it!  
That transuranic stuff, comes from plutonium,  
As it that's not enough, there's lead and chromium,  
Mercury and barium, arsenic and cadmium,  
Toluene, trichloroethene, xylene and dichloromethane!!  
They give us their solemn word, it won't hurt the aquifer,  
What if being begins to seep, and it creeps up from the deep,  
As we sow, we reap, we reap, WIPP it!  
Carlebad to Carlebad, if the deadly wastes disperse,  
Future generation's curse, WIPP it!  
You don't like being WIPPed? It's time to make a fuss,  
This project is the pits and now it's up to us,  
To mobilize and take a stand, put the pressure where we can,  
Educate and spread the word, make sure their voice is heard!  
Let's whip WIPP, let's whip WIPP, let's whip WIPP.....

Sincerely,

Larry Moore  
Albuquerque

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I speak in behalf of Sally Ordinahev, who is unable to attend due to a family emergency. My name is Dallas Potttinger, I am a resident of Albuquerque, *at 615 Corbett*

Again and again, we prove that we cannot manage complex tasks for long periods of time. Accidents ALWAYS happen. Bhopal, Three Mile Island, Valdes and a dozen other oil spills, Chernobyl, scores of plane crashes, the Iowa, Challenger - none of these were intended; none were adequately prepared for. But sooner or later, they were all bound to happen.

Every step of the WIPP project has depended on hopeful speculation. Now cracks in vault ceilings show that pressures are higher than hoped, and crumbling vaults will prevent you from removing wastes when that proves necessary. Wateary WIPP was to be **BOMADRY** for ten thousand years or more! **NO ONS** believes that WIPP will live out its life without a failure -- certainly none of you believes this, no matter what you say to the rest of us. **NO ONS**, including yourselves, believes that such an accident can be adequately prepared for at WIPP. You **KNOW** that the costs of such an accident are completely unacceptable, and you **KNOW** that something will go wrong in less than a hundred years.

What will you gain by proceeding with the Waste Isolation Pilot Project? It will fail! What could it possibly be worth to you, each of you, personally, to pretend otherwise?

Plug the shafts, turn your backs, close the books, go home --- go back to the drawing board. Learn how to neutralize these wastes, perhaps on-site, without moving them at all. Accept the **ENUR** costs of nuclear weapons and power--and spend the money, for the love of God. For nearly half a century, we have been asking: What will you do with these wastes? You're nervous; it's piling up---you've got to do **SOMETHING**, right? Please, confront your conscience: no matter how much time and money you've spent so far, nothing could be worth the price of continuing.

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Above all, you must stop producing radioactive waste: we do not need your bombs, we never did; and your power is dear at the price.

Go back to the quiet of your room tonight, and ask yourself: Why do you wish to be part of an atrocity?

If WIPP goes through, and you do not stop it, I can think of no greater curse than this: May you live a hundred years.

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3.6-1

STATEMENT BY JEFF RADFORD  
ON WIPP DRAFT SEIS  
ALBUQUERQUE PUBLIC HEARING, JUNE 1989

As an American citizen who believes in the absolute necessity of public participation in governmental decision-making for important issues, I have followed the planning for the Waste Isolation Pilot Plant closely since 1975. I have read all, or nearly all, of the documents and report publicly released about this project, and I have researched the history of other nuclear waste dumps and storage areas around the nation. I have personally visited the underground WIPP chambers and talked with numerous scientists and other specialists about this matter which I consider to be of paramount importance regionally, nationally and even globally.

There is much that I would like to say about this project, but I find myself at a loss as to what I might say that would make any difference. I say that with sadness, because after 14 years of following this issue, I am convinced that truth, scientific objectivity and the public welfare have long-since been compromised by the nuclear establishment's overriding obsession, its self-imposed ideological imperative, that WIPP be shown to be safe and suitable. I have concluded there is no data, no analysis, no danger --no matter how gravely-- that would convince WIPP advocates that the project should be abandoned or substantially altered.

The problem, then, transcends any technical deficiencies or errors that the Supplemental EIS contains. The fundamental problem is that the DOE officials and SEIS preparers are ideologically and psychologically incapable of performing the analysis required.

There is insufficient time here to detail how this inability plays through the entire planning and environmental analysis process. However, the problem is clearly demonstrated by the way the SEIS considers "worst case" and "bounding case" scenarios.

Perhaps it is a lack of imagination that prohibits the SEIS preparers from contemplating and seriously considering any real disasters, but I don't think that's the case. All that would be necessary is to admit that the kinds of nuclear waste mishaps and contamination events that have happened in the past might well happen again in the future. One need only recall the 1957 nuclear waste accident that left 1,000 square kilometers of the Kyshtym area of

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the Soviet Union virtually uninhabitable; or consider the mislabeling and misrepresentations of waste canister contents at Rocky Flats; or consider the radioactive rebar that was being sold in New Mexico a few years back. Not only can these things happen, they have happened.

Let's see some scenarios that show human error--either criminal or mere bungling--that results in ~~radioactive rebar~~ <sup>radioactive rebar</sup> being used in the construction of an elementary school, for example, where youngsters might be exposed to radiation day after day, year after year.

At the very least, I assume we can expect to see some treatment in the Final SEIS of the kinds of human error and criminal negligence that prompted the FBI raids on the Rocky Flats nuclear facility last week, from which an estimated 50 percent of WIPP's shipments will come. I found no mention of that kind of problem in SEIS Volume II, page B-22-25, or elsewhere.

May we also expect to see the Final SEIS an end to the polyanna optimism that results in conceding that only one percent of the contents of a single remote-handled canister will be leaked per year in WIPP's hot cell? (Volume I, page 5-46); or that an accidental drilling intrusion will hit only contact-handled canisters, not a remote-handled canister? (Volume I, page 5-110.)

SEIS?

My basic request is that the document be re-thought and re-designed to protect the public health and safety, not to protect the ideological biases of the EIS preparers. Thank you.

THIS IS ANOTHER ALTERNATIVE THAT SHOWS HOW MANY WERE CONSIDERED, BECAUSE IT SEEMS MOST LOGICAL. THAT ALTERNATIVE IS TO DELAY REMEDIATION UNTIL DECONTAMINATION HAS BEEN DEMONSTRATED.

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6.1-1

HARRY WILSON  
607 SULETA BLVD. SW  
ALBUQUERQUE, NM 87108  
(505) 877-4986

June 13, 1989

My concern with WIPP is that it may be used by government and industry to lull the American people into believing that something can be done and has been done to make the manufacture of nuclear weapons safe.

Nuclear weapons are not safe, not for those who use them nor for those they may be used on. Their manufacture creates materials that are lethal for all humans, and will be lethal for 250,000 years.

This hearing and the others like it around the country are caused by our fears that this material cannot really be kept safe even for 10,000 years. We are only concerned, evidently, about the first 1/2 of the lethal time period. Studies have indicated that even if WIPP were to be filled to the door and the door locked for those mere 10,000 years, we shall have disposed of, safely or not, 1/2 of the man-made radioactive lethal material now in existence in this country. WIPP could be called "The Four Percent Solution."

The great flaw in all this reasoning and planning and spending can be seen in the following analogy. If a careless, thoughtless, mindless, unwise person leaves the faucet running, and the water runs unchoked for a very long period, flooding the floor, filling the basement, destroying the contents of the



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house, the first thing that must be done, before an effective clean-up can be undertaken, is to TURN OFF THE PACIFIER

We are creating a huge quantity of extremely lethal material, material which will be lethal to our descendants for ten thousand generations. This verges on the unimaginable and is in no way an exaggeration. Here we are discussing how to clean it up, and not having any brilliant success at that, as yet. Refuse, cracks and disinformation hinder us. And we have not yet decided to quit making any more of this lethal material. We must do that first.

If we do not do that, the loads of disinformation will be permeating us that this can be taken care of and is being taken care of, when in reality it is not being taken care of and cannot be taken care of.

We must renounce nuclear weapons altogether FIRST -- their manufacture, their storage, their modernization, and their use, first use or last use -- it must all be renounced absolutely. THEN we can begin to start to commence to clean it up. Until then, we are not cleaning it up.

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CONSTITUTIONAL CLAIMSTAKING:  
We are "Going for the Gold"  
by Charles L. Hyatt, Ph.D.

In the U.S. Constitution, the 9th Amendment states:  
"The enumeration in the Constitution of certain rights, shall not be construed to deny or disparage others retained by the people."

The people's rights are further strengthened by the 10th Amendment:  
"The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people."

Thus, we see that "the people" get the benefit of debate in rights disputes with the U.S. government, and contrary to the strictly limited U.S. government, "the states and the people ... can exercise any powers not prohibited in the Constitution." (The World Book Encyclopedia)

Since the U.S. government (the DOE) has abdicated its responsibility and has not addressed many relevant MPP issues in its two MPP RIS's (The RIS is then the SIS); further many other non-nuclear issues were treated frivolously in the two RIS's, I claim in the name of the people the power to regulate MPP in the relevant topical areas ignored or minimally addressed or misrepresented by the DOE in the MPP RIS and in the MPP SIS and treated in this presentation by me. I encourage anyone else who finds that the DOE (or any other federal agency) has ignored or misrepresented issues relevant to the MPP (or any other federal) program, to claim your people's constitutional right to regulate a U.S. government agency whenever that agency refuses to regulate itself responsibly (e.g. at the expense of public health and safety). I would like to see the U.S. Congress fund the People's Constitutional Powers Movement with the explicit scientific and ethical requirements that they be dedicated to minimizing military, governmental and industrial threats to public health and safety without compromise. I request further that scientific conservation (honest, profoundly-thorough, skeptical, inalienable, adequate, responsible and sound science) characterize MPP standards and their specifications.

Such an institution would act as a citizen's "ombudsman" (the people's overseer) for the U.S. government, and that has been long-overdue anyway. This is a natural, constitutional response by "the people" who are tired of extensive U.S. institutional irresponsibility.

I would be happy to work full-time for such an agency as an out-scientist for \$309,99 per year. Note my address at the end of my presentation. The EPA would be the proper parent agency and Dr. Hansen of NRC would be a valuable asset.

Please recall, I claim the power to regulate MPP in the areas stated out herein, and I will endeavor to more than adhere to the scientific and ethical standard that I proposed to the U.S. Congress for MPP. Finally, note that "the people" who refuse to fund U.S. government and industrial programs are not given "the benefit of doubt" in U.S. state, or local courtrooms; indeed environmental and public interest plaintiffs bear

"the burden of proof" when trying to make large-scale, hazardous programs publically-responsible and scientifically-conservative in U.S. courtrooms. Where are these "other ... reserved rights" that belong to the people?

The following is an outline of the MIPP topical areas I claim.

Comments on the MIPP SEIS  
by Charles L. Hyder, Ph.D. (14 June 1989)

For the MIPP Program, U.S. government agencies and their contractors must abandon all significant compromises of public health and safety and requirements and of scientific fact, adequacy, responsibility, requirements and soundness.

The U.S. government must understand that nature does not compromise! Under these circumstances, "the burden of proof" (that the MIPP Program is scientifically honest, adequate, responsible and sound and that MIPP's threats to public health and safety will be minimized) must rest on the proposer (the DOE) of large scale hazardous programs like MIPP, etc.

Scientifically honest, adequate, responsible and sound hazardous programs include clear requirements insuring public health and safety. Those requirements must not be compromised. "Scientific" means that there is an enthusiastic, honest, and exhaustive search for the whole truth.

Traditional "business as usual" decisionmaking guarantees compromises and misrepresentation of scientific facts, results and requirements; and it places "the burden of proof" on critics of large scale hazardous programs. The "Business as Usual" approach exhibited by this SEIS, and by the previous SEIS, on MIPP, characterizes the prejudiced decisionmaking found throughout the MIPP Program. Thus, "the burden of proof" must be placed on the DOE to establish that the MIPP Program is scientifically adequate, scientifically responsible and scientifically sound; and further the "proof" must be demonstrated beyond reasonable doubt in this SEIS, et. seq. and in the eyes of, e.g., the public, the United States Department, P.S.N., et. al.

The MIPP SEIS and this SEIS do not address these or related ethical and scientific issues in any way. Both MIPP EIS's are replete with self-serving proposed MIPP Program; straightest thing! Thus, the MIPP SEIS and this SEIS are fraudulent and scientifically inadequate, irresponsible and un sound. I can only conclude that this Draft SEIS for MIPP is profoundly unacceptable! You DOE guys continue to misrepresent and to ignore the basic ethical, scientific, legal, political, social and economic issues raised by MIPP. You still don't grasp the meaning of the word "thorough" in the MIPP context.

The EPA standards must be adopted with large margins allowed for errors. Further, scientifically adequate, scientifically responsible and scientifically sound standards must insure public health and safety without being compromised by expediency. Self-serving fraud has compromised MIPP EIS's. We would like to have a valid scientific basis for making the hard decisions required to proceed with MIPP or to scrap MIPP.

Mr. the MIPP-impacted citizens of New Mexico, demand that no action be taken on MIPP until both the MIPP EIS and the MIPP Program adopt the scientific strategies, criteria, philosophies and standards outlined in the foregoing testimony.

There are many technical and specific falsehoods, omissions, and errors that need to be rectified, included and corrected before the MIPP SEIS can be finalized or rejected. Exclusion of RSGR's, for example, makes transparent of TBU wastes appear to be a foregone conclusion. But the RSGR solution involves the need to consider the chronic and acute radiation exposures to the public should endure all along the transportation routes if MIPP were to proceed. Further, routing the TBU wastes along freeways nationwide marginalizes MIPP's threats to public health and safety. In view of other U.S. problems with synthetic carcinogens in the environment and with increasing cancer rates, this is not the time to irradiate the huge U.S. populations living and driving along the freeways leading to the MIPP sites. Local RSGR's would have to be designed, built and maintained by irresponsible incompetents before public exposure to RSGR TBU radioactivity would rival that resulting from normal transportation exposures (including vehicle accidental releases and heavy exposures from passing and nearby vehicles carrying TBU wastes) of the MIPP Program.

Society, proliferation, penetration, transmigration, thermo-electricity, etc. were ignored in the SEIS under the umbrella that they were covered in the SEIS which puts them into the best program; but the "best program" will terminate in five years (without rationale) claiming sufficient information to determine the long-term effects of MIPP on the nearby (~ 3 mi.) Salado formation and the surroundings. There are sound scientific bases for determining the various natural and MIPP-induced timescales for T, DT/GR, P, DT/GR, etc. that must all be verified by the adopted test period. These timescales must be documented or determined, and the longest crucial scientific timescale will be adopted as the test period with provision to extend as needed. How long would transmigration take draining underground brine lakes? The DOE must abandon their "hide and seek" programs for concealing and suppressing the MIPP's SEIS and SEIS's. Both EIS's are inexhaustible supplies of these kinds of publically irresponsible examples.

The justification for augmenting MIPP's legalistic bases with scientific bases (on compromised public health and safety requirements [that are binding on the U.S. government (Dept. of Interior, DOE, EPA, Rader, DOE, DOE, EPA, Congress, the President, all MIPP-related agencies, Attorney General, Supreme Court)]) is evident. Failure of the DOE to make these basic changes (but their approach to, and implementation of, the MIPP EIS's and Programs will lead to chronic large scale exposure of the U.S. people to TBU wastes along our freeways and subordinate routes to MIPP. These same MIPP routes will also experience their share of highway and rail accidents during the 25 years of transport of radioactive waste to MIPP from more than 20 sites across the U.S. That's what freeways in the arid West (I-20 and I-40) would be major thoroughfares for massive shipments of radioactive waste to the MIPP sites. I-25, I-70 and I-5 would all help carry more than 6.4 million cubic feet of TBU wastes to MIPP over those 25 years. That's more than 120,000 cubic ft./yr. That's 123 semi-trailers packed tight with radioactive wastes. Since the trailers are not packed tight, the annual shipments to MIPP will be between 400 and 1500. That's between one and four arrivals at MIPP per day for 25 years! That's a dreadful prospect that could easily close down many major interstate freeways for months to years at a

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7.3.5.1-5

time. From time-to-time we would experience INTERSTATE GRIDLOCK nationwide. Talk about "compromising national security" .... It is quite clear that the transportation of 400 to 1500 radioactive shipments to MPP poses a serious, chronic, and unpredictable accidental threat to public health, safety and security. The situation calls for abolition of highway transport, and the oceans are even less desirable. The speeds of ordinary surface transport are too high for the safe movement of radioactive wastes on heavily populated public thoroughfares. Safely low speeds (15 mph) would prevent countless accidents and multiple releases each year along MPP transportation routes; specifically in the neck of the MPP funnel with 500 to 1000 radioactive shipments down the 4-6 chute from Denver to MPP (Orlsted, MN), some 900 mi. south.

Systems of dedicated 15 mph MU-Trains traveling on existing but dedicated tracks to MPP would invigorate the U.S. railroad industry and make life much safer for all of us, especially for the citizens of New Mexico, and still get the radioactive wastes to MPP in a timely fashion.

Attractive though the Slow TRU Train might be, the condition of U.S. railroads doesn't stimulate public confidence, health or security. Only placement of massive radioactive waste inventories in local Retrievable Surfaces Storage Facilities (RSSF's) at existing repositories can prevent the need to transport radioactive wastes to the MPP site for disposal. But RSSF's were not mentioned between "Do Nothing" and the massive MPP radioactive transport program; indeed, they weren't mentioned anywhere. Transport of massive amounts of MPP-bound radioactive waste are a foregone conclusion in all MPP EIS's and programs. That self-serving prejudice must not be allowed to endorse to the EIS II for MPP. Nationwide transport via buried pipelines is a well-developed technology, but that technology is uncritically but aside. "Thorough review" indeed! But the point is that public health, safety and security are being compromised repeatedly and in diverse ways. The EPA must step into MPP if the transportation of TRU wastes into the MPP site begins.

Congress must give EPA director belly the power to establish a MPP program that takes care of human health, safety and security without trying to compromise nature. A MPP (built or closed) with Scientific Integrity, wouldn't that be nice.

Once the MPP-bound radioactive wastes are "engineered" at each generation site, the arguments for a single U.S. radioactive repository are weakened even further. RSSF management of U.S. radioactive is dramatically simplified if the radioactive wastes are "engineered" to minimize geomigration offsite. Under those circumstances, RSSF problems and costs would be significantly reduced and some are eliminated.

Adequately minimizing threats to human health, safety and security can be realized only if we adopt scientifically conservative standards that isolate MPP radioactive wastes from the earth's biosphere for the next 10<sup>6</sup> years. Incidentally, this is the only way that MPP can avoid the "Moving Target" problem when it comes to DOE compliance with non-changing and scientifically conservative standards for the disposal of U.S. radioactive wastes in the MPP site.

Naturally, no mention of what these "engineering" impacts would have on MPP desirability over RSSF strategies can be found in either MPP EIS. How arrogant can the DOE civil servants be?

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Example after example of MPP EIS inadequacies could be, and have been, given; the case is adequately made: A much more serious and scientifically conservative examination of the on-site RSSF strategies, including radioactive "engineering" onsite in preparation for RSSF or MPP programs. In either case, the "engineering" of radioactive wastes must be done as carefully as any other aspect of the radioactive waste handling program.

This all necessitates drastic revision of MPP goals, strategies and EIS studies. Independent Review Boards of MPP must be established on conservative scientific and public interest bases to solidify and expand the existing federal-industrial control of DOE and MPP decision makers and their public review boards. It is difficult to conceive of modern DOE professionals being able to adapt to the new requirements without compromising them. Even their titles tell us whether the DOE (Dept. of Energy) or the EPA (Environmental Protection Agency) should be the lead agency for MPP. The previous two failures of the DOE and the ABC to establish decision repositories in geologic salt formations demonstrates how their preoccupation with image at the expense of scientific substance has prices and led to publically unacceptable conclusions. This EIS demonstrates the DOE's continuing rigidity and increasing invalidity. Like they say, "it's time for a change."

Characteristic of the DOE's lack of scientific conservatism are their studied and biased misrepresentations; their claims of "integrity" contain integrity before transport crash tests have been conducted, and their enthusiasm for conducting in-situ tests of Salado formation, and their geologic and hydrologic resistance to large-scale MPP excavation and rebar emplacement with grossly hazardous quantities of radioactive wastes, increase of non-hazardous electric heating until the point where the electric heating was determined by scientifically conservative studies to be safe for the replacement of radioactive wastes. The appropriate title for these electric heating tests are discussed elsewhere in my testimony.

It is clear that the DOE wants to start a "foot-in-the-door" operation in MPP in September 1989 regardless of the adequacy of the site to provide for human health and safety during the hazardous lifetimes of the radioactive wastes (tens of thousands of years for Pu-239, which is not diluted individually in the MPP EIS) and is ignored without justification.

Also, the EIS references system is unexplained, and it erodes the flow of information about MPP to "the people."

This EIS shows quantitative proof that the DOE analysts are making the same fundamental mistake that they made in the EIS studies. The DOE is still underestimating the significance of radioactive heating on lowering radioactive escape times and it's becoming a threat to the public.

The primary reason that MPP exists is assumed not to exist in equations (1) and (2) of the "MPP BRINE FLOW MODEL", pp. 5-69 and 50 v. II MPP EIS/ES/IS

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2. WIPP BRINE FLOW MODEL

A brine transport model for both isothermal and non-isothermal conditions in bedded salt was developed with data from the WIPP large scale in situ experiments [25,26,29]. This model is for transient Darcy flow in a porous medium. Elastic responses of the salt and brine account for the "storage" of brine that supports transient flow, and thermal effects are accounted for by including the thermal expansion of the brine and the host rock salt.

The essence of the model is embodied in a diffusion equation for the pore pressure that, in certain special cases, reduces to:

$$\frac{\partial p}{\partial t} - c \nabla^2 p = b' \frac{\partial \theta}{\partial t} \quad (1)$$

where  $p$  is the fluid pore pressure,  $c$  is the fluid diffusivity,  $b'$  is a source coefficient, and  $\theta$  is the temperature. The fluid diffusivity,  $c$ , depends upon the permeability, fluid viscosity, and the elastic properties of the solid and fluid (see Appendix A). The source coefficient,  $b'$ , depends upon the thermal expansivities of the solid and fluid (see Appendix A). For isothermal conditions, the right hand side of (1) vanishes, and the classical diffusion equation for Darcy flow is recovered. Various special cases widely considered in hydrologic modeling are embedded in this formulation [25]. For non-isothermal problems in which conduction heat transfer dominates (i.e., small Peclet number), as is certainly true in salt, the source term in (1), which represents the generation of pore pressure by thermal expansion, must be evaluated from the simultaneous solution of the heat equation:

$$\frac{\partial \theta}{\partial t} - \alpha \nabla^2 \theta = 0 \quad (2)$$

where  $\alpha$  is the thermal diffusivity. Extended discussion of this system of equations as well as various selections to representative initial value problems can be found in [26,30].

The explicit relationships between properties of salt and brine and the coefficients appearing in equations (1) and (2) are given in APPENDIX A of this report. The host rock salt permeability,  $k$ , and other properties of the host rock and brine appear in the fluid diffusivity,  $c$ .

In the data analyses that are discussed here, permeability values,  $k$ , were chosen to match or bracket the brine inflow data. Other values for the host rock and brine properties in the diffusivity,  $c$ , were taken from known properties of salt and saturated brines. The permeability values thus obtained were used to calculate brine inflow to WIPP disposal rooms with this model.

The zero ( $\theta_0$ ) on the right hand side of equation (2) states that there are no significant heat sources in the WIPP excavations. Radioactive wastes ARE energetic heat sources that will dominate the WIPP heat equation, which IS not complete in equation (2). To physicists, "the heat equation" IS

$$\rho_0 \frac{\partial \theta}{\partial t} - k \nabla^2 \theta = \frac{1}{\rho C} \left( \frac{\partial q}{\partial t} \right)$$

where  $\rho$  is the heat (energy) of a source;  $m$  the heated mass and  $C$  is the appropriate specific heat per unit mass. Finally, note that the last five lines of text just before equation (2) state that "For non-isothermal problems (e.g. WIPP) in which conduction heat transfer dominates (i.e. small Peclet number), as is certainly true in salt, the source terms in (1)

$$\left[ \frac{\partial q}{\partial t} \right]$$

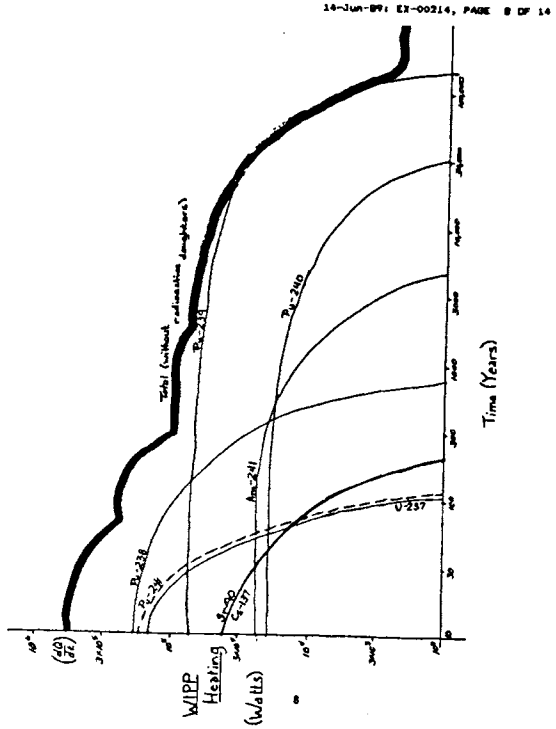
which represents the generation of pore pressure by thermal expansion, must be evaluated from the simultaneous solution of the heat equation. Then the DOE gives us a WIPP heat equation without a heat generation term in it! Thermal expansion opens fractures and increases fracturing and brine flows.

That is a clear case of Quantitative AND Qualitative institutional compromise of WIPP scientific integrity, ETHICS and PUBLIC RESPONSIBILITY and of modeling WIPP realistically and responsibly. The DOE is a fraud. That radioactive heat source term for the real heat equation will dominate the heat equation and the pore pressure diffusion equation (1) for more than 2000 years after WIPP closeout (at least for the mean half-life of the buried radionuclides). The 2000 year-plus natural timescale for WIPP heating effects makes it clear that the proposed 3-year test period is way too short, and radon gas measurements must not occur in WIPP until approximately powered benign heating sources verify "non-isothermal" WIPP BRINE FLOW MODELS that characterize nature thoroughly, adequately and accurately. The DOE must stop assembling WIPP problems away! That is how you impose the need for COMPROMISE on nature. WIPP WILL become acceptable only after you start treating WIPP as a real problem rather than as a P.R. problem. The other geologic and brine-flow timescales can be determined by DOE.

We are real people and we want real solutions for the real problems that WIPP is bringing to our homeland.

I am available for consulting and for tutoring, for there are many more crucial problems with WIPP that I can help you with before you can get a decent final WIPP EIS that would be acceptable to "the people." Use of complete and uncompromised Thermal pore pressure diffusion equation (1) coupled through a complete heat equation modified to include the WIPP radionuclides as a realistic heat source can lead to ballpark values (e-tims better than "order of magnitude estimates") or better, for the relevant WIPP timescales as they evolve throughout the adjustment period before steady state was achieved.

The DOE must put radioactive inventories in terms of lethal doses so that public can relate to how many lethal doses escaped containment during a 0.02 percent release from real and serious (but improbable) transportation accidents.



7-14-12

The figure shows the lower limit for the rate of heating (dQ/dt) by WIPP releases given in the SEIS. The lower limit for the total power starts above 600,000 watts upon closure of WIPP, remains above 100,000 watts for more than 300 years and finally falls below 60,000 watts after 3000 years. Thus, the heating term that belongs in equation (2) would dominate the heat equation and the pressure diffusion equation for 10,000 to 100,000 years; "small overright".

Another "small" oversight by the DOE in WIPP EIS's is the heat contributed by the radioactive daughters of the parent isotopes shown in the figure. These contributions lie in the range from 6% (for P-238) to 7% (for P-239), but these are added to the DOE TMI curves after 300,000 to 10<sup>6</sup> years. Thus, contrary to the DOE's misleading treatment of the WIPP brine flow problem, the heating of the Salado by WIPP releases will make thermomigration the dominant brine flow mechanism for at least 30,000 years! Perhaps 100,000 years will be long enough for the heating source term to become small enough to be ignored compared with other terms in equations (1) and (2) in the SEIS.

Why hasn't the DOE presented these analyses? Why hasn't the DOE solved the relationships in SEIS equations (1) and (2) on pp. E-49 and 50 to determine the vertical scale size of the thermal disturbances produced by WIPP? Thus we could determine  $\theta_0$  and compare that space scale with the distance to the huge brine pocket 600 feet below the WIPP excavations. If  $\theta_0 > 600$  feet after 100 to 1000 years, thermomigration, thermally enhanced desalting of salts at the top of the brine pocket and thermal siphoning of brine into thermally expanded fractures along the upper boundary of the brine pocket all threaten to draw copious brines into the WIPP excavations to destabilize and mobilize WIPP TMI wastes, etc. over the next 30,000 years of significant heating. Small wonder that the DOE did not make these estimates or solve the simultaneous thermally driven real heat and pressure diffusion equations for  $\theta_0$  and  $\theta_1$  thermomigration rates etc.

Why? Through scientific studies are conducted for WIPP, instead of ill-concealed, self-serving whitewashes, the DOE condemns itself to an endless series of unpleasant surprises that have been going on since WIPP started. How about the unexpected fracturing, creep, brine flows, etc. that simple analyses of existing relationships and data that the DOE SHOULD HAVE PREDICTED if their mathematical models were adequate to fulfill the DOE's commitment: "to meet applicable federal standards for the long-term protection of the public and the environment." SEIS, p. iv, vol. I

It is typical of the DOE to make these kinds of public commitments for WIPP, and it is equally typical for the DOE to bluster along repeatedly ignoring threatening conditions, inappropriately assuming away persistent problems and underrepresenting established physical equations and relationships (with rubbles intent or with irresponsible incompetence) neither is acceptable. And if we are to have any hope of securing WIPP safety, the burden of proof must be placed on the DOE to demonstrate that WIPP meets all applicable federal standards for the ... protection of the public and the environment.

I'll bet you that the DOE has figured out a way to make the recently publicized fracturing in WIPP excavations look like an asset for WIPP (4 June 89). They also said afterward that they had expected the fracturing. If I sound repetitive, its because the DOE is repetitive in its reckless neglect, stupid lying and P.R. ~~misleading~~ misrepresentations and

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decisionmaking. I suggest that people try reading one of the MIPP EIS's: the DOE's dramatic approach will become abundantly clear to anyone who does. When the force bend the chicken coop, they do get arrogant.

Is there a "hidden agenda" developed by the U.S. government with the DOE on point? The players (governors of Idaho, Colorado and New Mexico) are to expedite the opening of MIPP in September 1989 by creating a "national security" problem if MIPP doesn't open by then. Such a problem's creation would have to provide "credible deniability" for the DOE paid for the three governments. However, there's the December 1988 meeting of DOE with the 3 state governors. Then the governor of Idaho announced that he will no longer allow radioactive wastes to enter Idaho from the Rocky Flats (plutonium reprocessing) plant in Colorado after mid-1989. So then the DOE wanted started piling up Rocky Flats. All of this time MIPP was finding record more geological problems that please to delay. If not stop MIPP's opening. Near about the DOE promised brief pocket checklist under MIPP? So the governor of Colorado announced that he would not allow Rocky Flats radioactive wastes to pile up there, and MIPP wouldn't be opened in time to meet the DOE's deadline. So at the choice: We can open MIPP in September, 1989 without meeting DOE, so at the choice: We can open MIPP in September, 1989 or we can find scientific requirements for public health, safety, and security. We can find scientific requirements for public health, safety, and security that the DOE is using to force MIPP's opening in September 1989.

This is actually the scientific, irrefragable, irrevocable, and publically treated by the U.S. government the DOE, the NEC, etc. have taken toward the U.S. radioactive waste problem that must be abandoned and replaced with dedication to public health and safety that is not compromised during MIPP decisionmaking.

Requirements designed to insure public health and safety and to maintain a viable USA.

Incidentally, two Nobel Prize-winning; 9 other physicists at leading U.S. universities; an environmental, anti-nuclear, anti-atomic, anti-peace groups; and millions of other individuals have proposed that the U.S. close all nuclear, chemical and biological weapons production plants for at least 5 to 10 years while NVO and Nuclear Pact nations work out how fast and how far to disarm. I enclose a copy of my own publication on the matter that includes Arab-Israeli concerns.

**An Application of the U.S. "Flexible Freeze" Policy to the Production of Nuclear and Chemical-Biological Weapons (A Proposal to President Bush and the U.S.)**

The ravages of 45 years of operation, erosion and high neutron fluxes have caused four major U.S. nuclear weapons production plants to shut down for safety reasons during the last few years.

The Bush administration has been given an unique opportunity to respond compassionately and wisely to Gorbachev's progressive global disarmament initiatives and to extend Arab calls for linkage between nuclear and chemical-biological (C-B) weapons limitations. This time is particularly in tune with the natural flow of things: Five major installations of the U.S. nuclear weapons fuel cycle were not operating at the beginning of George Bush's first term in office. It looks like quick-reopenings would be a singular, expensive and unpopular. This gives President Bush an historic opportunity to take the excessive horrors of H-bombs out of the world's nuclear arsenals and to make the world a more gentle and kind place to live.

sets all other nuclear nations to close their corresponding production facilities, there are two significant impacts on the world's nuclear arsenals:

- (1) the natural radioactive decay half-life of tritium (necessary for H-bombs) would cause the H-bomb inventory of the earth to have a 12.4 year half-life (one-half of the tritium is destroyed each 12.4 years). Thus we would remove the excessive horrors of 1000-times more power and of massive global skinctions from the nuclear threat. And
- (2) there would be a global freeze on the number of A-bombs on earth, and a growing effort to defuse all nuclear arsenals.

**THE PROPOSAL**

The U.S. proposes that all nuclear nations close down their nuclear weapons fuel cycles. The U.S. will leave its five major nuclear weapons installations closed as long as the Soviet Union and other nuclear weapons nations leave their corresponding facilities closed. Dissenters will be dealt with according to the wishes of the participating nations. Further, we propose linkage with proportional C-B weapons reductions.

The U.S. and Soviets are actively working to sign a START Treaty involving 50% reductions on both sides, and we will continue to seek further reductions on a proportional destruction basis. Thus we have a global "flexible freeze" for nuclear weapons, and a natural timescale (12.4 years) is adopted for the H-bomb disarmament timescale.

Arnold, OH; Hanford, WA; Rocky Flats, CO; Savannah River, SC and WIPP, NH.

Further, regarding linkage as proposed by the Arabs, the U.S. proposes that the "flexible freeze" philosophies and practices for global nuclear weapons facilities be applied to all chemical, biological and other weapons of mass destruction. The U.S. will stop all C-8 production if the Soviets and the Arabs agree to do the same. All nations would be subject to the same rights and restrictions in their search for proportional reduction quotas on the same "flexible freeze" basis. Again, specifics will be worked out by participating nations.

Finally, the U.S. will meet the Soviet initiatives for conventional disarmament in Europe and in Asia with proportionate reductions proposed for all U.S. allies. We will also decrease the U.S. military budget by more than 1%.

Thus we say tribute to Gorbachev's Soviet initiatives and to the belief that "good will begets good will". We are thus proposing major reductions that strongly support the Geneva and INF treaties and disarmament initiatives. In addition we extend the offer of friendship as the basis for all international relations, particularly those involving the Soviet Union. We believe that it is time to begin looking toward zero-growth economic treaties based on a world in a stable peacetime economy. We can no longer continue competing on a basis that would clearly destroy humanity and many other species on earth.

Such proposals would lead to much-elevated U.S. prestige, partnership and leadership in the world, greatly-reduced demand for funds throughout the U.S. weapons industry and to an increasingly secure and democratic world. Friendship, democracy and good will make everyone feel more gentle and kind.

The closure of large nuclear weapons plants is easy to verify; it is more difficult with a large chemical or biological plant, but the details can be worked out.

As more and more nations participate in the linked nuclear and C-8 "flexible freeze", the U.S. will present additional proposals to humanize the world's weapons arsenals and to stimulate international friendship.

Let "the thousand points of light" be the lights of a reason, friendship and peace rather than the flashes of a thousand nuclear detonations.

If anyone reading this proposal has a reliable channel to President Bush and thinks that this proposal is a good idea, please do what you can to get this proposal to the President.

Charles Hyder, Ph.D.  
P.O. Box 673  
Riderwood, Md. 21139  
pec'88

Thus we have not only the DOE/MPP record, we find ourselves in the middle of an ongoing "paper tiger" (the national security crisis) that is designed to force the DOE to grant variances on EPA standards for large-scale hazardous waste repositories so that MPP can be manifestly compromised and operated under known unsafe conditions and without regulations. Seems mighty peculiar to me!

Another joke nowhere in the SIS is the environmental impacts of the above unfolding scenario (on MPP's threat to the public) mentioned or discussed. So once again we are locked in to a DOE/MPP strategy that requires that nature must be compromising in order for MPP to be a secure repository for radioactive wastes. That puts us in a position of betting the world's future on a highly unlikely event (the conquest of nature).

Any other DOE strategy (except nuclear war) would have been preferable to this one. DOE is trying to stuff down our throats via the MPP program.

If the DOE continues to ignore our calls for scientific and public integrity, we, the people of New Mexico, must find other nonviolent strategies that will keep radioactive wastes out of MPP until the EPA, USGS, DOE, DOR, ESR, and the rep. radioactive wastes that they are militarized with MPP; or they say to CLASS MPP ~~immediately~~ and to build safe RSR's so we can avoid surface transportation problems and secure the U.S. radioactive wastes where they are.

Finally, if MPP opens the State of New Mexico would become an economic wasteland and Nuclear Sacrifice Area all along I-25, I-40, US-285 and other MPP transport routes. Anyone who can would move away, and most people would transport them. Anyone who can would move away, and most people would transport them. Anyone who can would move away, and most people would transport them. Anyone who can would move away, and most people would transport them.

Could we build a City, Roswell, Actavis, all of southeast New Mexico would come to a virtual standstill. New Mexico would become the first Nuclear Hellfire State in the USA.

As a consequence, the economic impacts excluded from the MPP EIS's? If not, why is there no discussion of those kinds of scenarios in any MPP EIS to date? Hello EPA: "where are you...." See comments on the MPP EIS about DOE's suppression of economic impacts of MPP.

As has been the case for large-scale nuclear technologies (weapons and electric power) in general, they keep adopting programs that are premature, unrealistic, uncoordinated, and marauding; and the DOE's MPP is no exception. What is the big truth anyway?

We can still reverse this trend of failures if we reject the compromising of scientific conclusions and place "the burden of proof" on the U.S. government to show that MPP is a scientifically conservative repository repository for the isolation of releases from the earth's biosphere.

The FEIS on MPP must include basic relevant conservation, requirements, analyses, claims and plans of all activities to describe MPP releases, the natural context, impacts of MPP on the U.S. public and consequent public economic, health, safety and environmental costs.

The top MPP EIS's are designed to mislead the people about the serious nature and number of biological and technological problems already appearing in, around and about MPP. The MPP EIS's contain outrageous efforts to construct information flows and to misrepresent existing and non-existent data, analysis, results, requirements, needs, and assumptions in self-serving ways. Of the authors, publishers and funders of the MPP EIS's. This bookkeeping/ blinding and binding consequences of these deceptive presentations only lead to continuing delays in MPP licensing. Nature cannot

be concealed and MPP SEIS and EIS claims to the contrary are exaggerated. If all of the MPP-relevant quantities assessed-very in unrealistic MPP models and strategies were specified adequately, and if all other relevant MPP quantities are accurately and thoroughly presented to the public in the final MPP EIS, we would have a valid basis for MPP decisionmaking. If we "the people" are not allowed to have a scientifically valid and complete information basis for MPP before an operating license is granted; we will find whatever myoflout and constitutional means we can to prevent the placing of any radioactive wastes in any MPP site and the transport of radioactive wastes to MPP will not be allowed. We "the people" will not allow MPP to operate as long as the U.S. government is not honest with "the people" and as long as the U.S. government refuses to accept its public responsibility for MPP, all of it!

The DOE can speed up this publically controlled process by adopting the public interest programs repeatedly proposed to the DOE about MPP. Otherwise, we will all have a difficult time until the U.S. Congress closes MPP for as long as the MPP cabalman takes to clarify and to specify scientifically valid MPP characteristics and regulations. We can only hope that the DOE and the Bush Administration take an enlightened, publically responsible view of MPP in the next final EIS.

The DOE even left the radioactive heat source term  $\frac{dQ}{dt}(L/MCv)$  out of the heat conduction equation:

$$\frac{dQ}{dt} - kT^2 = \frac{dQ}{dt} \frac{dQ}{dt}$$

without mention in the SEIS for MPP. Thus, their results are not applicable to MPP.

With all of the self-serving exclusions given herein and with the recent publication that cracks were known since December 1987 to be occurring in MPP storage rooms; one would think that the MPP opening in September 1989 would be delayed or cancelled. But that has not occurred. Perhaps that is because the DOE did not include "the cracks" in the MPP SEIS or in their reports to the MPP EIS. Irresponsible public and scientific fraud, and conspiracy to suppress critical information about MPP's inadequacies must not be allowed to characterize MPP decisionmaking any longer. What else is the DOE hiding from us?

This is a clear case where "the people" must protect themselves from a grossly inadequate and unaccounted threat to public health, safety and security. We must not let the U.S. government railroad us on this mistake!

These are the needs of arrogance and tyranny that characterize bureaucratic incompetence. These are the problems and tyrannies that bring about the downfall of nations. These are not the kinds of decisions that President Bush wants to be known for. He is, after all, "the environmental president."

The MPP program is not safe; the MPP site is not scabbe; and radioactive waste must not be placed in MPP in September 1989 or in the foreseeable future! Government insensitivity to public rights, health and safety will not be tolerated in the U.S. either.

TESTIMONY OF JOHN C. COBB, MD, MPH, at the hearings on MPP SEIS, held in Albuquerque, NM, June 13 - 14, 1989

3-2-1

My name is John C. Cobb, of Corralles, NM. I am a physician and former Professor of Preventive Medicine at the University of Colorado, and former Chairman of that Department at the U.C. Medical School in Denver. I have the B.S., and M.D. degrees from Harvard University and the MPH degree from Johns Hopkins University where I was on the faculty of the School of Hygiene and Public Health for ten years. In Colorado, I was a member of the Governor's Scientific Advisory Council, the Lamm/Dirth Task Force on Rocky Flats, the Air Pollution Control Commission and the President's Commission on Environmental Studies of the University of Colorado, among many other State civic and academic responsibilities.

The EPA study of "Plutonium in Human Tissues" was for the EPA also a consultant to NIOSH for the Portsmouth Naval Shipyard Nuclear Submarine Studies and I am currently a member of the Scientific Advisory Board of the Three Mile Island Public Health Fund, and a member of the Scientific Advisory Group to the CDC on Epidemiologic Studies around the Fernald, Ohio Uranium Plant.

It is my opinion that the Draft SEIS on MPP does not justify DOE's plan to start storing radioactive waste at MPP without complying with EPA standards. DOE has not analyzed adequately actinide and long-term storage alternatives; nor has it properly assessed public health and safety issues which it has considered. It has failed to analyze the health risks from the inhalation and ingestion of plutonium dust, the health risks from the inhalation of very small quantities of plutonium dust which would be coughed up and swallowed, thereby exposing the gastro-intestinal tract to the alpha radiation, a significant risk factor for cancer, particularly of the colon.

The methods of handling the radioactive waste during transportation are not adequately described in the draft SEIS, nor have the proposed containers been adequately tested. The handling of RH waste (which requires remote handling because it is so radioactive) with particular areas of concern that is not adequately dealt with, I don't have the time to comment on all the details. I don't have the time to comment on all the details. I don't have the time to comment on all the details.

3-2-1

The draft SEIS ignores the possibility that substantial amounts (even kilograms) of weapons grade plutonium or uranium might be hidden in a waste container by dishonest employees for the criminal purpose of selling it to foreign agents or criminals. The scheme might be for them to pick it up from the marked drum either at the MPP site through other dishonest employees, or en route, by hijacking.

I first became aware of this possibility 15 years ago when I was inspecting the waste management facilities at Rocky Flats. I was told that the workers were not supposed to take the drums out of the site, but that they were doing so. While watching the workers pack waste into the drums and then measure the radiation, it occurred to me that a dishonest employee with a little knowledge of radiation physics could quite easily hide several kilograms of weapons grade plutonium in one of these drums, with appropriate shielding to prevent detection of the radiation from the outside of the sealed drum. The drum could be marked with a secret code, and then retrieved by an accomplice either en route or at the disposal site.

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3-1-3  
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7-3-5-1-37  
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7-13-1-8  
7-14-1-0

7-3-1-2  
7-3-1-2  
7-3-2-5  
7-3-4-1  
7-3-5-4-3

7-3-1-25  
7-3-4-1  
7-12-7-1



When I pointed this out to the manager of the plant, he turned pale and appropriately became very concerned and took it up with his senior staff. Clearly he and they recognized that this was a credible possibility.

In view of the recent investigations of Rocky Flats by the FBI for the Justice Department, by the CAO, and by the State Health Department, I wonder if there is a problem with unaccountable losses of plutonium. Is it being smuggled out and criminally sold? If so, the waste containers are an obvious route that should be investigated; and there are several environmental concerns that have been addressed in the draft SEIS.

1. Trucks carrying waste to WIPP could be hijacked by armed criminals seeking trading sites in plutonium or uranium. They might force open the containers and dump the contents around some lonely road in Southern New Mexico.

2. An ordinary highway accident to a truck carrying such smuggled plutonium could result in much more serious contamination of the environment than is considered in the draft SEIS. If a few kilograms of plutonium ignited, plutonium oxide smoke particles would be spread over hundreds of square miles downwind, rendering the area uninhabitable for thousands of years.

3. The use, or threatened use of stolen weapons grade plutonium or uranium by criminal or foreign agents would be an even more serious problem for the environment and the population, and this should be addressed in the draft SEIS.

This scenario may seem far-fetched, but please recall that there have been reports in the press, but please recall that waste disposal site in Reedy, Nevada, selling the waste to the tools and machinery to local residents; so that the whole contaminated had to be surveyed with radiation detection equipment to discover and retrieve the contaminated materials. Even worse, there were reports in the press of dishonest soldiers or employees at the Rocky Mountain Arsenal in Denver, selling munitions illegally in a similar way. Thus this is an altogether too credible scenario. It may seem frailty and the enormous power and value of plutonium.

In addition to the environmental concerns mentioned above, the final SEIS should address the psychological effects on residents along the WIPP truck route. The psychological effects as they see the trucks bearing nuclear waste roll by every day. My experience with the Three Mile Island Public Health Fund suggests to me that constant psychological stress caused by the fear of radiation can be a serious cause of sickness, even cancer, among people who live near such hazards.

Remember that the Karen Silkwood case was settled in her favor largely on the basis of the psychological stress she suffered due to her fear of plutonium contamination.

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7.2-3

WIPP Statement for Public Hearings, DOE, June 14, 1989

To:

Mr. V. John Arthur  
ATTN: SEIS Comments  
U.S. Department of Energy  
Albuquerque Operations Office  
P.O. Box 5400  
Albuquerque, New Mexico 87115

From:

Kathryn (Katie) Zashling  
Chief, Mental Health Professionals for Social Responsibility  
300 Tenth Street, NW  
Alameda, New Mexico, 87114

I would like to thank you for this opportunity to speak to you regarding my concerns about WIPP. I am speaking to you today on behalf of mental health professionals for social responsibility. We are an association of psychologists, psychiatrists, counselors, social workers, nurses, and other mental health professionals who are deeply concerned about the threat of nuclear war. We are committed to using our unique psychological perspective on human condition to help alleviate this grave threat to our collective well-being. We are engaged in such activities as ongoing exchanges and dialogues with members of the professional community, teaching and training, teaching meditation and contemplation to individuals and groups. We believe that the fear and mistrust that the nuclear war has created in the world tend to have of one another could be dissipated if we would all take the time to understand our fellow human beings at the deepest levels.

The ultimate goal of our organization is the discontinuance of the nuclear arms buildup so that the need to deal with the "garbage" created by the production of nuclear weapons would be a thing of the past. However, we realize that we cannot wait until that time and that we all must deal with the very real problem of disposing of nuclear waste.

Like other citizens who attempt to stay informed about issues like WIPP, we are dependent on experts - scientists, DOE personnel, independent researchers, and the media. We take the time to be expertly informed and thus give us the general public, correct information on this complex topic. We know that it is our responsibility in a democratic society to monitor our government and its agencies to see that it (the government) is doing what we want it to do. And this, we contend, is where there seems to be a problem. There seems to be a credibility gap.

Yesterday, when I was here listening to some of the speakers at this hearing, I gathered all of the blue sheets of information that were published by the DOE. As I read these sheets over last night, I thought about the fact that everything is going along fine at the WIPP site - that the DOE is being extremely careful about the environment and the safety at WIPP and that everything is well thought out and under control.

①

But I have other information that contradicts the information on the blue sheets. I know that some scientists who are very familiar with the salt formations near Carlsbad do not think that depositing transuranic waste at WIPP is safe. I know that the New York Times says that cracks have developed in the ceiling of the salt mines and that unexpected brine is seeping into the storage rooms. I know that dangerous loads of radioactive materials will be transported on the highway near my house and that some of the trucks carrying them are not equipped with accident and emergency personnel are not equipped to handle. I know that the DOE has been accused by the EPA of illegally disposing of dangerous waste material at the Rocky Flats Facility in Colorado.

All of this conflicting information creates dissonance within me as well as members of my organization and much of the general public. This dissonance erodes our trust in our government and trust between a government and its people is as important as trust in a marriage, in a family, or in any human relationship. To have trust, we must all become trustworthy.

I urge the DOE to become trustworthy. I urge you to listen to the experts outside of your organization who have grave, heartfelt concerns about the safety of WIPP and the wisdom of burying nuclear waste in the salt beds. I urge you to continue the dialogue with these experts and the general public until there is more agreement that the correct action is being taken. I urge you to correct the mistakes that have been made and are still being made at other nuclear facilities in the nation so that we can regain trust in your integrity. With trust and honest communication with one another, I believe we can solve this very difficult human problem.

Thank You.

(2)

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① *Clayton Perry*  
 5445 Wincklesboro  
 Albemarle, VA 87121  
 (505) 877-8758

I do not come here today to blame or harass. I do come here to express my concerns about the WIPP site and this whole confusing process. As a species we seem very good at tinkering, that's what I call technology and our technology comes from what we label science. Science is the act of observing what is there and understanding what we see. I do not believe we truly understand the technology of nuclear energy. Nuclear energy should still be in the Research & Development stage for we are still trying to understand it. If we truly understood nuclear energy, then we would not have this nagging question of what to do with the waste, and none of us would be here today.

But we are, and what are we to do about nuclear waste? For it is we who have done this, not the power companies, not the military, not the DOE, but all of us have participated. For many of us have believed that we need nuclear weapons to keep our country safe. Many of us have believed we need more and more electrical power, and thus the need for more ways of harnessing the things of nature that can give us this power.

The ramifications of our technology are now catching up with us; we don't know what to do with our tinkering, we don't know what to do with the by-products, the pollutants. Well, we really don't have a good grasp on the pollutants caused by burning fossil fuels.

And now we have this idea of hiding these <sup>(radioactive)</sup> wastes in the ground. Is this really a good idea, or is it like putting a band-aid on a melonoma and hoping it will go away?

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From the start the WIPP project has been on less than scientific ground. If it had been approached scientifically, then a more methodical, logical, and common sense approach would have been applied. The Caribbean area is not the most stable site for storing this waste. I have spoken with one of the state's most respected seismologists. He told me he would have nothing to do with WIPP from the very start because of the politics involved. As a species we sometimes think only in financial terms: WIPP could mean jobs, etc. What good are the jobs if everyone in the community is dying from strange cancers? But, from the start, this financial factor was of more concern.

This seismologist told me that there is <sup>quite</sup> seismic activity in this area, slight though it may be. He also told me there is an area near the site chosen that was absolutely better for this project. But he also told me that you don't criticize the powers that be and make such suggestions, once something of this magnitude gets rolling. Why? Because, as he put it, "They can ruin your career. They can make you out to be some kind of crackpot." So, the good doctor remains anonymous, and I can't prove any of this conversation. But I heard it with my two ears and I know it's true.

It is true we use electrical power to make our lives better. It is true our tinkering has provided us with more productive lives. But it is time to rethink how we use this power. It is time to make it more of a local entity rather than some large conglomerated mess. By using simpler technologies that we better understand, such as solar and wind generation, we can still have our steers and listen to them too. It will mean that we become more

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responsible as individuals for our own well-being. It will mean that we quit buying into the corporate mind-set. It will mean that some institutions *will* not yield so much power over our lives. It will mean that we utilize our knowledge of our technologies to their fullest and make fossil-fuel burning plants the cleanest they can be, that we harness the heat from these plants and use it to heat public buildings rather than let it dissipate in the sky. We can do it. We just have to insist.

In my own belief system, in my way of walking on this earth, I look at the earth as being alive, not as a lump of rock, dirt and minerals. Mother Earth is dynamic and alive. Even science looks at the earth as being a great memory bank of the life on this planet. Mother Earth just gives and gives and gives. And we take and take and take. It's time to honor our caretaker. It's time to heal her, and I don't think storing waste that is comparable to the power and heat <sup>of the</sup> ~~of the~~ in salt beds with cracked ceilings and seeping water is the answer. Do you?

Do we really need more nuclear bombs? Do we really need more electricity, or do we need to develop technologies that save energy and/or use less electricity?

The poet Robinson Jeffers wrote some beautiful lines that apply to this day. He wrote: "A little too abstract, a little too wise/ It is time for us to kiss the earth again/ It is time to let the leaves rain from the skies/ Let the rich life run to the roots again..."  
It is time for us to kiss the earth again.

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**ADMINISTRATION**  
 Mayor: Ray A. Mistia  
 First Lt. Governor: Henry A. Chavez  
 Second Lt. Governor: Harry Alvarez  
 Secretary: Harry Alvarez  
 Treasurer: Harry Alvarez  
 Commissioner: Harry Alvarez

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 Antonio Aragon  
 Joseph Chavez  
 James Chavez  
 Samuel L. Chavez  
 Allen Ray Chavez  
 Joseph V. Chavez  
 Harry Alvarez

**TESTIMONY BEFORE THE U.S. DEPARTMENT OF ENERGY ON THE BRIEF SUPPLEMENT ENVIRONMENTAL IMPACT STATEMENT, WASTE ISOLATION PILOT PLANT (WIPP), DATED APRIL 1989**

BY  
 RAY A. MISTIA, GOVERNOR  
 PUEBLO OF ACOMA

JUNE 13, 1989  
 HILTON HOTEL  
 1901 UNIVERSITY BOULEVARD, N.E.  
 ALBUQUERQUE, NEW MEXICO

The Pueblo of Acoma is located in west-central New Mexico, approximately 60 miles west of Albuquerque, off of Interstate 40. It is best known as the oldest continuously inhabited village of North America. It sits atop a 300 foot mesa, sometimes referred to as the "Sky City."

The principal concerns of the Pueblo of Acoma regarding the proposed waste isolation project (WIPP) in New Mexico are as follows:

Transuranic (TRU) waste will be transported through I-40 and across Acoma reservation lands. Atchison, Topeka and Santa Fe railroad (AT&SF) also travels the Acoma reservation. The AT&SF railroad tracks and I-40 highway cross over Rio San Jose River. There is danger of water and other environmental contamination in case of accidents, as well as a significant additional risk to our Acoma people.

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We have always been taken advantage of by the United States Government and the dominant special interest groups. It is our natural reaction that the transportation of all hazardous waste across Indian lands has concerned us very much. TRU waste would be stored within underground geologic formations comprised largely of salt. The use of salt for these purposes is counter to the traditional religious beliefs and customs of the Acoma people and certain other Indian tribes in New Mexico, and constitutes a practice offensive to the Pueblo of Acoma.

Additional risks posed by TRU wastes transportation through Acoma lands are unacceptable unless adequate provisions and financial assistance can be made to aid the Pueblo of Acoma in meeting its increased responsibilities for protecting the public and environment within its jurisdiction.

A number of inadequacies exist in current DOE plans for assisting state, tribal, and local governments in meeting their respective responsibilities related to the WIPP. These include needs for: (a) developing appropriate emergency response plans; (b) training of tribal and local safety and other officials; (c) acquiring requisite emergency monitoring and response equipment; and (d) establishing cooperative arrangements for other safety-related activities.

More specific comments concerning the draft SEIS are as follows:

1. The draft SEIS, Appendix D, page D-13, states that routes were selected on the basis of criteria required by Federal (DOE, NRC, and DOT) regulations and as established in consultation with the State of New Mexico and other "corridor states".

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COMMENT:

- a. The Pueblo of Acoma was not consulted by the DOE nor State of New Mexico officials during the evaluation and planning of highway routes.
- b. Alternate routes for shipments from the DOE's Nevada Test Site and/or the Lawrence Livermore National Laboratory in California are not discussed in the draft SEIS. Alternate routing using Interstate No. 10 (I-10) through the southern portions of Arizona and New Mexico should be discussed in the SEIS, including an analysis of road and weather conditions and overall radiological risks as compared with I-40.

2. Appendix C, SEIS, discusses emergency response training for corridor states and Indian tribes to prepare them for coping with TRU waste transportation accidents within their jurisdiction. On page C-5, Appendix C, the statement is made that emergency training courses.... will be taught one to four months prior to initial TRUPACT-II shipments".

COMMENT: A 1 to 4 month lead time is seriously inadequate for training and preparedness by tribal safety personnel. A 12-month advance preparation schedule is strongly recommended.

3. Page C-5, second paragraph, mentions that training for state (and presumably tribal) personnel for the "first Transportation Corridor" and the "Southern Transportation Corridor" is scheduled for, respectively, 1988 and 1989.

Comment: No mention is made for training for public safety personnel along other corridors. When and to what extent will such training be provided?

4. Appendix C does not mention any provisions for supplying radiological monitoring instruments or other emergency equipment to state, tribal, or local safety agencies.

Comment: Provisions should be made for furnishing such equipment as necessary to cognitant tribal and local agencies. Additionally, assistance to tribal and local

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governments should be provided by DOE for periodic maintenance and calibration of radiological monitoring equipment.

5. Appendix D, page D-40 mentions the TRANSCOM Tracking System and that state and tribal governments "will have access to limited functions of TRANSCOM" and that "appropriate software training will be provided...."

Comment: The SEIS should indicate that DOE will facilitate voluntary participation in the TRANSCOM system through assistance to tribal and state governments in acquiring and using the required equipment.

6. Pages 6-41, 6-42, and 6-43 of the Final Environmental Impact Statement for the Waste Isolation Pilot Plant (DOE/EIS-0026), dated October 1980 discuss emergency procedures and financial responsibility for accidents; however the draft SEIS does not discuss this issue.

Comment: Since issuance of the final EIS in 1980, Congress has amended the Price-Anderson Indemnification Act to provide more extensive coverage for private insurance and federal indemnity. The applicability of these new provisions to the WIPP facility and to TRU waste transportation accidents should be discussed in the draft SEIS.

Further, the extent to which tribal and local governments might be burdened with additional emergency response or decontamination expenses and other liabilities in the event of TRU waste transportation accidents should be discussed.

7. Tables 5.6, 5.7, and 5.9 do not provide data for occupational exposures for TRU waste transportation accidents.

COMMENT: This omission should be corrected.

8. Page D-5, Appendix D, states that DOE's contract motor carriers, "will meet weight distribution and dimension requirements".

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7:351-31  
7:354-2

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COMMENT: The SEIS should indicate whether shipments will be within gross vehicle weight (GVW) limits established by the applicable states.

- 9. Appendix D, pp. D-8 and D-9, discusses proposed transportation equipment maintenance and inspection policies.

COMMENT: The SEIS should also discuss plans for cooperation with state and tribal authorities in establishing acceptable locations for rest stops, refueling, and vehicle maintenance as well as "safe havens" for security of vehicles during equipment breakdowns or interruptions of travel due to adverse road or weather conditions.

Therefore, the Pueblo of Acoma recommends that:

- Alternative No. 1: WIPP should not become a repository for the disposal of transuranic waste.
- Alternative No. 2: Pueblo of Acoma recommends stopping all for underground tests at the WIPP site.
- Alternative No. 3: Pueblo of Acoma recommends transuranic waste be stored in facilities other than WIPP.

DATE: 6-12-89

PUEBLO OF ACOMA

*[Signature]*  
RAY C. NISLIA, Governor

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WIPP Hearing outline

*Tom Catherford, NM State Senate*

- 1. ~~Name~~ ~~State Representative~~, followed and concerned about WIPP for 17 years; last year served on the Interim Committee on Hazardous and Radioactive materials; found out then about numerous safety and technical issues that had not been adequately addressed by DOE; and it seems to me nothing has changed much since then. WIPP was not ready to open last year when DOE said it was ready, and the issues raised then still have not been addressed by DOE — either in the Supplemental Environmental Impact Statement or otherwise.

II.

- A. As a legislator, I am concerned about the outside political pressure by states wanting to get rid of their nuclear wastes as well as the DOE that has been brought to bear on opening WIPP before safety standards are fully met. DOE seems to be placing most of its emphasis of getting WIPP open rather than meeting its safety commitments made to the state. I wish instead of running around the state doing PR and offering tours of the WIPP site the DOE would spend our tax dollars addressing these concerns. I also served on the Economic Development and Tourism committee, believe that WIPP will do more harm to the state economically by affecting our image for tourists than it will help create some jobs in Carlsbad. In the last year more jobs have been created in Carlsbad with the revival of the potash industry than at the height of construction at WIPP. Are we so desperate and without any better ideas for economic development that we must invite the nation to use our state as a dumping ground for others waste? How does the image of a dumping ground for all kinds of garbage, nuclear or otherwise, fit our image now as the Land of Enchantment?

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B. As a lawyer, I am troubled by the DOE attitude that it is somehow above the law and it doesn't have to fulfill written agreements made with the states on safety issues. These issues range from assistance to the states to fix up the roads leading to the MPP site, to bypasses that were promised to densely populated communities along the route, to yearly training of our emergency response personnel, to promises to meet all federal, state and local laws prior to opening MPP.

And now the DOE is under criminal investigations for violating what seems to be every imaginable environmental law on the books at the Rocky Flats plant. I used to think that the DOE was, like many bureaucracies that have been around too long, just simply inept. But criminal investigations being conducted against the DOE that may very well lead to an indictment make me think they are just plain crooked -- especially since the DOE went and awarded the operators of Rocky Flats, at taxpayer expense, an \$8.5 million bonus. Back that onto the \$100 billion dollar or more bill that DOE will cost taxpayers to clean up massive contamination problems at each and every one of their facilities.

C. As a citizen, I am concerned that the DOE has managed to lead our Governor around by the nose on MPP. First they get him to run to D.C. a while back and urge Congress to expand MPP to include all the nation's commercial high level nuclear waste. Then Governor Carruthers tried to suppress our only reasonable scientific oversight group -- the Environmental Evaluation Group -- by not letting them raise scientific and technical issues to the DOE without prior approval. Thanks to Senator Rumpman and others, Congress stepped in a

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moved the BSA out from under the Governor's control so they could carry on their work independently. And now the Governor wants to bring reprisals against over 300 businesses in Santa Fe that have joined a businesses against MPP effort! What is happening to our Democracy?

11. I would like to go over a few of the major unresolved issues:

- 1. Environmental Protection Agency disposal standards.

DOE does not want to meet these standards until after five years worth of waste is placed at MPP under the guise of experiments. At best, scientists have stated the experiments are not credible, and at worst, I feel its an excuse for DOE to put waste in before denouncing MPP as a safe site. The SEIS does not discuss the experiments in detail -- that is in another document not sent out to the public. The SEIS does not address what will happen if after the five year experiment MPP does not meet EPA standards. Who would take this waste back? Idaho certainly won't, Colorado won't. What will DOE do? Perhaps the DOE plan would be to leave it at MPP regardless of whether it met these disposal standards. I certainly have no faith that DOE would move these wastes after five years if standards can't be met. DOE keeps telling us all what a safe site MPP is. Fine, if it is so safe, then DOE should meet all the safety standards, including the EPA disposal standards, before the waste is put in.

2. What if MPP doesn't open in September? DOE will not make the final decision on when or if MPP will open. There are many other players, most of whom will not have made final decisions on major safety issues by DOE's planned September opening date. (1) Congress has to pass a law

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withdrawal bill. Just this week in Washington D.C., Congressional oversight hearings on MIFP chaired by Congressman Sykes from Oklahoma revealed that MIFP could be delayed for many more months because DOE has been unable to provide documentation to assure that the design and construction of MIFP are safe; (2) Nuclear Regulatory Commission has to certify the TRAMPAC transportation containers. DOE has to get a permit for the mixed hazardous and radioactive wastes before emplacement at MIFP -- a permit that at best will not be given for at least nine months to a year!. There are more. But DOE's DCLs fails to address what will happen if MIFP doesn't open in September. DOE says Governor Andrus of Idaho has threatened to close his borders to any more interim storage of nuclear wastes from Rocky Flats that is needed for MIFP, thereby threatening to stop production of nuclear weapons there. First of all, DOE seems to be paying an awful lot of attention to Governor Andrus, but when New Mexico Governors have raised safety concerns about MIFP in the past, DOE just ignored them. But Andrus threat suits the DOE purpose of creating a political climate that pushes to open MIFP up before virtually any of the safety standards are compiled with. What will DOE use for an excuse if Colorado Governor Romer, as he has threatened to do, closes down the Rocky Flats plant because of the mess DOE has created there as revealed in the criminal investigation?

III. In closing, I would say that DOE has got some work to do before it opens MIFP. First of all, DOE should comply with all safety standards before we open MIFP, so that we don't get stuck with a bad site and its too late to do anything different. DOE should fulfill all its promises to the state on highway, bypass and emergency response assistance.

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However, I wish I could believe that DOE will be responsive to the concerns raised over the years by elected officials, independent scientists, Congress and citizen groups. I don't believe DOE has demonstrated, by its track record, that it can be trusted to do the job right. What we really need, since MIFP is the first new DOE facility to be constructed in over thirty years, is to set a precedent on how to do things right -- from the beginning. DOE doesn't have much experience in doing things right. They have no experience in having to abide by the same environmental and safety laws that private enterprises has had to comply with. So why try to make an old dog perform new tricks. Let's get a new agency, with credible independent scientific oversight at the federal level, with no bad history, to take over from here to see that when and if MIFP opens, it sets precedent for the best way for the nation to dispose permanently of its nuclear waste and one that reduces to a minimum the risks to today's citizens and future generations.

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**Governor shuns anti-WIPP businesses**




**Carruthers 'prefers' pro-plant contractors**

SANTA FE, N.M. (AP) — Gov. Bruce Carruthers said Monday he would not award state contracts to companies that do business with the Waste Isolation Pilot Plant (WIPP) in Wyoming.

Carruthers said he would not award contracts to companies that do business with the WIPP, a controversial nuclear waste repository. He said he would award contracts to companies that do not do business with the WIPP.

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**WIPP HEARINGS**

WIPP HEARINGS

WIPP HEARINGS



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My name is Laurie Cubbin. I moved to New Mexico in 1987 from Atlanta Georgia, where I had lived and been very politically active for several years. I moved here because I am an incest survivor, and New Mexico, Albuquerque in particular, has a very supportive therapeutic community, dealing with issues not only of physical abuse, but also betrayal of trust. I find it ironic that the place I have come to for healing is the center of a controversy swirling with lies and fear. In 1983 I participated in civil disobedience and was arrested at the Savannah River Plant. During our trial, people were called as expert witnesses to testify to things they had personally observed or participated in while working in the nuclear industry, both power and defense. William Lewless, former nuclear waste management project engineer at Savannah River Plant, told how vital public safety information was suppressed, specifically the radioactive contamination of groundwater at the site, as it didn't support the image DOE and Dupont wanted to project. Dr. Carl Johnson, epidemiologist and former state director of public health in Colorado, testified that his studies of radioactive contamination at Rocky Flats nuclear weapons facility correlated with the increased rates of cancer among residents of the Rocky Flats area, and concluded that "There is no level of radiation which is safe." This is echoed by Dr. John W. Gofman, nuclear physicist, in an affidavit used in the 1977 trial of nuclear plant protestors in Oregon in which he also says "I have carefully examined the performance of the regulatory processes in nuclear energy and conclude that these processes do not work and do not provide any protection to the public from injury by nuclear energy." When I hear John

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Arthur of the DOE talk about environmental protection and safety as priorities of the Department of Energy, I think about the desired public image and find I have no reason to believe him. Where is the accountability in this system? In having these hearings, is the DOE really willing to listen, to the point of saying "Hey! People are REALLY concerned about the safety of nuclear energy. Let's step back from nuclear at any cost, and see what those costs are." Is fast but dirty power worth the cost not only in health, but in trust? The DOE has a reputation as an institution, the main goal of which is not truth or public interest, but to perpetuate itself. Most people, if they can bear to think fully about this subject, have strong fears about the nuclear industry, the wastes produced by it and the DOE. Fear and denial of responsibility are the roots of most all abuse, whether it be of children, animals, or the earth. The reason I'm here today is not the hope that you'll hear my testimony and close down WIPP, but that our collective voice will have an impact on you, and on others who haven't spoken out yet because of fear and hopelessness. The strongest way I know to effect change is by breaking through the denial that anything is wrong, and I can stop betrayal of confidence only by demanding accountability and truth. Thank you for your time.

②

NEW MEXICO THE GARBAGE STATE

You want to dump it on my head.  
 You want to dump it on my pregnant cat.  
 You want to dump it on my bed and say  
 "Don't worry today!"  
 You think we don't know where it's at.

You want to ship it here in trucks.  
 They'll come from everywhere night and day.  
 And if it crashes, spills out--Hard luck--  
 Just try to clean it up!  
 I wish you'd find another sucker state.

You want a dump in our backyard  
 A million old 55 gallon cans.  
 No rust or leaks, out of sight out of mind  
 You hope but you're blind--  
~~It's~~ it's just another short-term dream.

You want to dump it on our bed  
 Of salt or land, it's still New Mexico.  
 And it's the Land of Enchanted Wastes  
 For big-cited states--  
 New Mexico the garbage state. (?)

The Land of Enchanted Wastes.  
 New-Mexico-the-sucker-state.  
 New Mexico the garbage state. ?  
 The Land of Enchanted v-a-a-t-e-assesses.

c 1989 Larry Goodell

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*Garbage Bag Submitted  
 As Exhibit*

14-Jun-89: EX-00221, PAGE 2 OF 2

COMMENTS ON THE MIPP SEIS  
Albuquerque, Mexico  
June 14, 1989

My name is Lea Reynolds. I hold a doctorate in economics from the University of Michigan. I have 10 years of research and teaching experience in the University setting -- on the faculty at the University of Utah, at the University of Eastern Washington, and here at the University of New Mexico --, and 5 years of experience working as a professional economist in the private sector. I am currently on a part-time job with the City of Albuquerque. I was the Chief Economist in the MI Department of Finance and Administration. I offer the above to establish my credentials as a professional economist only. The views I express here are my own.

I have a long-term interest in MIPP. I spent part of my first summer in Albuquerque working with Southwest Research and Information Center to prepare comments on the 1979 Draft. Many of our comments back in 1979 are still pertinent:

The current SEIS gives but scant attention to socio-economic impacts. Out of over 1000 pages of text, 1 paragraph only is given to describing the socio-economic environment in Lea and Eddy counties; 3 pages are devoted to a discussion of the socio-economic impacts of the proposed alternative and 1/2 page evaluate the socio-economic impacts of the alternative, but these hardly constitute analysis.

The analysis of socio-economic impacts is confined to the region of the MIPP site, to Lea and Eddy counties. To be meaningful, the geographical scope of the analysis must be expanded. MIPP will have socio-economic impacts, both positive and adverse, well beyond the borders of the two county region. MIPP will involve new facilities throughout the country. It involves the transportation of these wastes -- some 34,000 truckloads could ultimately be destined for permanent storage -- across some two dozen states, through major population and industrial centers, near reservoirs and aquifers, by major tourist attractions, recreational areas, near areas set aside as wilderness.

The analysis of socio-economic impacts of the proposed action is based on the merits of an input-output model. In my 1979 comments, I discussed the inadequacies of the input-output model used for assessing the economic impacts of MIPP on a particular region of the state. Despite the matter-of-fact presentation of the SEIS, the economic impacts, based on a standard multiplier analysis, are most certainly too high, raising questions about the meaningfulness of the out-year projections.

Moreover, the exclusive reliance on input-output analysis ignores potential adverse impacts of MIPP. I criticized the Draft EIS for being too sanguine in its appraisal of the potential harm to the tourism industry in the immediate area -- to those hotels, restaurants, gift shops, etc. that depend on the some 800,000 people who annually visit Carlsbad Caverns. As nuclear wastes destined for Carlsbad will be transported along New Mexico Interstates and in close proximity to many areas of tourist and recreational interest, the potential adverse impacts to tourism are most certainly too high. The potential adverse effects on tourism to Carlsbad are most certainly too high. It is not possible to quantify, or to ignore the issue altogether.

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7.2-9

7.2-16

7.2-20

7.2-1  
7.2-20

MIPP Comments, page 2

Another possible adverse impact relates to mineral resources. In 1979, we criticized the Draft EIS for providing inadequate analysis of the site's potential denial of valuable natural resources such as oil, gas, potash and langbeinite found at the MIPP site. In the SEIS, such concerns are answered by pointing to the DOE decision to reduce the buffer zone around the MIPP site, a decision which opened up acreage to virtually unrestricted exploration, drilling and mining activity. No analysis is provided of the costs, in terms of public health and safety, of eliminating DOE control over this area.

Any analysis of the socioeconomic effects of MIPP is incomplete without some quantification of the costs associated with the increased risk of exposure to radiation of contamination of water supplies, etc. Many pages in the SEIS are devoted to calculating risks arising from normal operations, from transportation without incident, from accidents, from pipeline disturbance of the MIPP site, but no mention is made of the pipelike costs imposed on that population by the increased risk of a "catastrophic" in the wake of the Valdez disaster. Is the failure to assess the potential costs of mobilizing resources to deal with a major transportation accident or breach of the MIPP site that releases radioactive and other toxic substances into the environment. Surely, the data exist on the basis of which to estimate costs of containment, clean-up, potential damages.

How would it be enough to analyze the costs associated with major disasters. The SEIS should present strategies -- actually a concrete step by step action plan -- for mitigating potential adverse impacts. The deficiencies of the SEIS in this regard are perhaps no where more evident than in the area of transportation. There simply is no analysis of alternatives -- of rail versus truck, or alternatives to the majority of bi-passes, or areas in which trucks will come from Idaho, Minnesota, watersheds and rocky flats, many thousands of truckloads of nuclear waste will come through the Big I and within a mile or two of downtown Albuquerque. An accident somewhere along the interstate within the metropolitan area would have disastrous consequences. What alternatives are being explored? What efforts is DOE making to train physicians and emergency personnel to deal with this type of accident? How many annually receives some \$500 million in federal subsidies -- to plan and coordinate -- to handle all types of major emergencies. Surely additional funding will be required.

One final comment. DOE is proposing to proceed with the "test phase," before meeting EPA requirements for opening the facility for the tests are permanent storage of nuclear wastes. I would assume that the tests are conducted in earnest, that a possible outcome would be the discovery of enhanced by artificial DOE but come up with one major objection to the test phase, namely the cost of constructing the facility. But costs of proceeding with placement of 10% of the wastes at MIPP before demonstrating compliance are most certainly understated, as the costs of transporting the wastes to, and probably from, the site are not included. The failure to analyze fully the benefits and costs of even

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7.2-20  
7.4-1

7.2-3  
7.2-31

7.2-25  
7.12.9-11

9.1-5  
7.3-2  
7.12.9-1  
7.12.9-2  
7.12.9-11  
7.15.4-1  
7.15.4-3  
7.15.4-4

5.1.1-1  
7.2-30

NIPP Comments, page 3

those limited alternatives presented in the SEIS only adds to the evidence that the "testing phase" is a ploy used to expedite the opening of NIPP for storage of wastes that are causing political and other problems in Idaho. In Colorado, all nuclear weapons facilities around the country are being closed. If we are to follow the economic and proposed course of action, the action is not the cost. The costs have been inadequately analyzed. Nor has DOE evidenced efforts to mitigate the potential adverse effects.

7.2.9

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Andreas Middleton  
945 Zona Vista S.E.  
Albuquerque, N.M. 87106

Although I am not a native New Mexican I feel that I have lived in this state long enough to become all too familiar with the proposed WIPP site at Grants. For this reason I felt it was my responsibility to come here today, to voice my opposition to the entire first permanent nuclear waste dump.

For too long it seems the people of New Mexico have been cajoled and flattered into believing that the WIPP site will be beneficial to them. But I ask the question, at what cost? The people of Colorado have learned at what cost. Only this week we have all read in our newspapers about the illegal burning of hazardous wastes at Rocky Flats, and the illicit discharge of pollutants into 2 creeks that flow into major water supplies serving 4 metropolitan areas. Showing with a frightening reality that either the D.O.E. and its competitors, Rockwell, are either incompetent or show a total disregard for the environment and all life sustained by it. Idaho has learned at what cost. They no longer want to be the garbage can for nuclear waste and look greedily to New Mexico for a solution. Are we willing to take over that unsavory position of keeper. Nevada and Utah have learned at what cost. Three Mile Island, Chernobyl, Windscale, the Drexel disaster, all have learned at what cost. But perhaps these disasters although familiar names seem far away. They are read about in the newspaper, sympathized over and forgotten.

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32-1

But the UTPP site is here, in our state, threatening us and our children. It is not a question of out of sight out of mind. It is with us not only for our life time but will remain a legacy of this generation for the next 200,000 years.

It is all so easy to believe that this time it will be different. After all, aren't we supposed to learn from our mistakes? By studying history we learn to avoid our previous errors, or is it true that history repeats itself. Already we learn that the D.O.E. will not subject the site to EPA standards for safety. Instead, it wants to place waste into UTPP for a 5 year trial period to ascertain if it meets these safety standards. A Catch - 22 situation. There are cracks appearing in the salt beds which, we are reassured by the D.O.E. can be corrected. What they fail to mention however, is the fact that this correction procedure may interfere with the proposed closure of the salt beds around the waste.

There has been insufficient study to determine if the aquifer will carry plutonium wastes to the Famosa River - a source of drinking water for people in both Western Texas and Western New Mexico. How this sound as if lessons have been learned? I fear not. And many of us are potentially at risk. A staggering figure was presented to us that at least one shipment of radioactive waste will be travelling through New Mexico each day for the next 20 years. Shipped in containers that appear to have been inadequately tested. Not only this but travelling through towns and on roads that are ill-prepared to handle any form of radioactive spillage. Using techniques as dated and as inadequate as the 'Pack and Cover' concept of the 1950s on how to deal with a nuclear attack. This at

a time when there are more cars and trucks on the roads than ever before. Some of these shipments will be travelling through Albuquerque on I-25 and I-40 through our neighborhoods.

With so many problems to combat, why are the D.O.E. pushing for a September opening? What is a delay of 2 years if it ensures real safety, when we will have the waste for 200,000 years. Why choose the ill-labeled site at all when it seems so inappropriate. Could it be that New Mexico is proving to be politically expedient. After all, wasn't it just 2 days ago that Gary Garretts was reported as saying that my business who opposed UTPP would not be given any state contracts. Perhaps New Mexico doesn't have the wealth of other states or the political know how but we are citizens with a right to voice our opinions and doubts as much as anybody else.

We live in a unique state where residents have a long association with the land. We are the lucky ones to live here. For this reason I urge you all, New Mexicans and non New Mexicans, all who love this state to raise your voice against the UTPP site. Let's not permit another piece of Mother Earth. If you care for New Mexico, its people, and its survival stand up now and oppose the UTPP site until it can meet all EPA safety standards. Do it now before it is too late.

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3.1-3  
3.1-10

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7.3.1  
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7.3.8

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4.1-3  
8-7

1-3



EX-00225-  
RANDON L. WILKIE  
3901 IRONIA SCHOOL, NE  
APT. A 408  
ALBUQUERQUE, NM  
08110

Statement for WJPP Hearing

June 14, 1989

I am opposed to the storage of radioactive residues from our nuclear industries at locations other than at the sites where such residues are originally generated.

By using this local storage, the very complex transportation problems are eliminated.

By using local storage, the citizens living near the waste generation and storage sites can easily be kept fully aware of the growing presence of waste and the numerous associated hazards and keep Albuquerque pressure on local and national public officials to properly protect their health and safety.

Certain knowledge that waste will be stored locally at a generation site, and the location of such a site would be the best possible way to insure that no action be made in advance by affected citizens. These Albuquerque hearings, perhaps models of the kind of public interest we would see in communities where nuclear industries are proposed for the future, should the principle of local waste storage be adopted.

Shipping waste to one or two locations in the country gets the waste out of the mind for most citizens of the nation. That is why there are so few citizens of, say, Massachusetts here today.

Burial of waste in underground vaults is particularly insidious because it gets the waste out of sight even of the local residents. Consider the reaction of Carlsbad residents to a putative alternate plan to store the waste scheduled to be buried on the surface near their city. The question for residents would be "Will the waste be buried when the first waste arrives?" Instead of the question "Will the first waste grandchildren be safe?" and "Will the human residents living near here be safe 1000 human generations hence when the plutonium is half decayed?" The latter two questions are far easier to defer indefinitely, and these questions have no answers because we aren't smart enough about geology and container integrity.

The states of Nevada and New Mexico are particularly powerless to bring about effective legislation for the control of dump sites, because of their small representations in Congress.

The only real recourse for a savvy citizen of these states will be to leave. Certainly I will want to leave the apartment I now occupy which is located about 300 feet from Interstate 40 and the WJPP site. I am happy that I am no longer a land owner in this state. This makes me free to pull out of the state when the WJPP waste starts moving through.

1-2

1-2  
3-6-1  
5-2-1  
5-2-1  
5-2-2

EX-00225-

The principal to be observed here is that waste be kept where the people are so they can keep an eye on it and think about it every day. Even more pertinent would be the location of waste where the people live and work. Thus greater vigilance would be assured, and the allocation of funds to insure maximal safety.

As a scientist, I am reasonable confident that containers can be designed to hold nuclear waste without leakage for a few years -- maybe ten -- provided that internal gas pressure increases due to unforeseen chemical reactions do not explode the containers.

If surface storage is adopted, pressures can be monitored on all inner and outer walls of container wall materials can be examined periodically for corrosion and radiolysis damage. Double-walled containers can be used in which an empty space between the inner and outer walls can be continually monitored to detect the slightest leakage before leaked material has even begun to attack the outer container.

If we approach the storage of waste in a truly responsible fashion -- beyond that our progeny need to deal with our mistakes -- beyond that we periodically inspect the containers and perhaps replace them periodically -- it may well be that the cost of nuclear power and nuclear weapons will be so greatly increased that these industries will not be seen as viable economic options.

By leaving the waste treatment and storage problems in the hands of government, we see the true cost emerging decades later in "irresponsibility." The estimated clean up cost is about \$150 billion dollars, and this is only a DOE estimate. Soon you as a taxpayer, will be digging down in your pocket for at least \$400 to pay your per capita share of the cleanup cost. Your kids' share is also \$400 each.

Guess what it will cost our progeny if WJPP fails after the salt tunnels collapse.

In all of this there is a moral question of shifting responsibility for our societal use of poorly understood technology to other people -- both now and in the future -- who have no voice in the decision to use such technology.

An analogue in economics is our national-scale shifting of unpaid bills for energy, water, sewer, to our \$2.5 trillion national debt. The standard of living of our progeny will drop because they will be saddled with paying the bills for our irresponsible and profligate living.

How much will the standard of living of our progeny drop due to nuclear wastes left for them to handle?

1-2

7-12-6-5

3-6-1  
5-2-1  
5-2-2

3-1-5

5-2-1  
5-2-2

EX00226

Judy Kaul  
1407 Hazeldine SE, 87106

You board an airplane from Albuquerque to Washington, D.C., a  
9:00 AM flight. You are seated next to me. I am a direct  
connection to the nation's capital. ~~My~~

As you board you notice there aren't any flight attendants  
but that's o.k., you know how to find your own seat. All  
the passengers finish boarding, and the door closes  
automatically, and the plane begins to roll down the runway.  
A voice comes on over the intercom.

Good afternoon, ladies and gentlemen. This is recorded  
announcement. You are on flight 1989 from New Mexico to the  
nation's capital. We welcome you aboard this very special  
flight, and we are pleased to inform you that this plane is  
the latest design and it is completely automated and  
completely safe. We hope you enjoy your flight, and please  
feel assured that nothing can go wrong, can go wrong, can go  
wrong, can go wrong.

At that moment your life flashes before your eyes.  
Your beloved car is spewing carbon monoxide into the lungs  
of your neighbors,  
your air conditioner keeps you cool but contains freon gas  
that is destroying the ozone layer,  
your electricity is from Palo Verde nuclear power plant  
brought to you mindlessly by PNM,  
You see the 360 aluminum cans per year you have thrown away,  
lying scattered throughout the state, the nation and the

EX00226

planet, aluminum cans that don't biodegrade, they stay and  
stay and stay for years after the name of the brand has  
finally worn off.

Maybe archeologists in millennium to come will find remnants  
of our non-biodegradable beer cans. Artifacts of the last  
half of the 20th Century, and they'll call it the period of  
irresponsible technology and waste management of the United  
States of America. Our legacy.

But maybe not. Maybe there won't be archeologists or  
historians or any memory of the human race at all. Maybe  
there won't be anyone to learn the lessons of large scale  
irresponsible technology and waste management, because maybe  
there won't be anyone left, nor any life supporting  
atmosphere or gene pool to recreate the intelligence and the  
beauty that the human experience has known.

At this moment New Mexico is being invited, indeed being  
offered incentives, possibly being coerced to take us into  
a large scale irresponsible technology and waste  
management. It's tempting to just go along with the powers  
that be, and squander the earth which should be the  
inheritance of our children.

But we're not.  
We're at the task of using our human intelligence and looking  
for solutions together. We are a democracy. We are



It seems to me that the "powers that be" have a need to "save face"; they don't want to feel ashamed by admitting they made a mistake. I believe it takes much more integrity to admit a mistake and correct it. I would feel much more respect for one who can see the real truth and act on it out of love for himself and his/her fellow human.

My friends and I would like to ~~write a song~~ <sup>sing</sup> a song I write. ~~even though it's not very good. They~~ <sup>The words</sup> ~~they~~ <sup>came</sup> ~~came~~ <sup>from the</sup> depths of ~~my~~ <sup>our</sup> hearts, which ~~is~~ <sup>are</sup> as pure as the heart of a child. The song is called Does DOE love me? and it ~~is~~ <sup>is</sup> sung to the tune of the old Church hymn, Yes, Jesus loves me.

DOE loves me, this I know - Does DOE love me?  
Cause the SES Report tells me so; Does DOE love me?  
They assure me all is well, but Does DOE love me?  
If it ever ceases it's a living hell. I wonder if it's so?

Scientists make atomic bombs - Does DOE love me?  
Send the waste in leaky tanks; Does DOE love me?  
Do they want to save my home or Does DOE love me?  
Kill me with Plutonium? I guess it isn't so!

Karla Harper  
207 Amherst ME  
Albany Ave. N/M 57106  
June 14, 1989

(2)

Statement for Public Hearing Regarding WIPP EX00227

I heard on the news this morning that no matter how many people speak out against the WIPP project, it's going to be carried out anyway. What a blow! I've been living with the notion that I live in the United States of America - the land of the free where the voice of the average citizen can make a difference. I may as well be in Red China being run over by a tank. I certainly feel like a powerless peon being run over by a big machine. President Bush is reprimanding the Chinese government for showing no concern for its individual citizens. What a hypocrite! He may not be using tanks & machine guns on us, but what he's doing is just as bad, or even worse - allowing us to die a slow death - a death of spirit, and possibly a death by degenerative diseases caused by radioactive materials. (1)



continue to create the worse  
that is the source of the flood.

The DOE wants us to bear  
the burden of their insanity.  
They want your children, our  
land, our future the jeopardy  
to a ~~to a~~ taken resistance to the  
flood which will consume us.

I say "NO"

The earth says "NO!"

We must begin somewhere.

We must as a people, as a  
part of the earth ~~to~~ start to  
~~that~~ say no to the gradual  
destruction of our home. ②

3.1-8

1-2

3.6-1

We must say No more  
to the creation of these  
wastes that must buried in  
the ground for our safety.

You gentlemen from the DOE  
now that likely have ~~not~~ have  
personal opinions + possibly  
official opinions ~~and~~  
are wiff. And considering  
who you work for I can  
pity much guess what those  
opinions are.

I ask you to take a  
~~step~~ moment and look into  
your hearts, Can you ~~see~~ ③

3.6-1

3.1-8

advocate the positioning of all  
 life for any cause. Can you  
 live with even one accident  
 at will in the next 25 years.  
 One Death I ask? One  
 foot of contaminated land?

The accident will happen!  
 Hopefully we will be human  
 enough to stop ~~it~~ this  
 insane death wish before it  
 does.

Gentle men I ~~am~~ an  
~~elder~~ ~~with~~ you to let you  
 go of your serious stern  
 faces for a moment and <sup>(4)</sup>

ask yourselves "Is it  
 worth it? Ask agalms  
 again until you get an  
 answer from your heart.

We have a chance to  
 start ~~to~~ transforming our  
 society into one which is  
 concerned for the future of  
 our planet of our people.

~~Humanity~~ ~~has~~ Humanity has  
 always ~~to~~ known the importance  
 of preserving the earth. Lao

Tzu wrote is the Tao Te  
 Ching

Does one want to take the world  
and temper with it?

I see we will not succeed,

The world is a sacred vessel which  
none should spoil,

One who tempers with it spoils it,  
One who grasps it loses it.  
There is a time for surging ahead and  
for staying behind,

A time for breathing softly and a time  
for breathing strongly,

A time for vigour + for withdrawal.

A time for soaring upwards and for  
flying low.

Thus the Sage shuns excess  
and savagess

Leo Tan

①

And now we as humans  
have more power to Temper with  
the earth than ever before. ~~And~~  
This power can also be used  
to bless the earth.

~~Let us learn how to~~

Let us learn how to

Neutralize this waste &  
stop producing more of it.

In closing I would like to  
ask everyone here to pray for  
the end of this murder of  
our planet. Pray for the  
Planet, Pray for our children,  
and their children

①



THIS LAND IS YOUR LAND     with by: Woody Guthrie

CHORUS: This land is your land  
This land is my land  
From California to the New York Island  
From the redwood forests, to the Gulf Stream waters,  
This land was made for you and me,

(1) As I went walking that ribbon of Highway  
I saw above me an endless skyway  
I saw below me that golden valley  
This land was made for you and me -

CHORUS

(2) I roamed and I tumbled and I followed my footsteps  
Through the sparkling sands of her diamond deserts.  
And all around me, a voice was singing  
This land was made for you and me.

CHORUS

(3) The sun was shining  
And I was strolling  
And the wheat fields waving  
And the dust clouds rolling.  
As the fog was lifting  
A voice was sounding,  
This land was made for you and me.

CHORUS

Dr. Miriam Weber M.D.     EX00231  
322 TRUMAN ST. ME.  
ALBQ, N.M. 87108

I am a neurophysic doctor.  
I am speaking to you because I am concerned  
about the D.O.E.'s plans to transport and store  
nuclear and other hazardous wastes to the  
WIPP site for the following reasons:

First- D.O.E. proposes to use the WIPP site  
as an experimental site to test gas generation  
from nuclear and hazardous wastes. Many scientists  
have spoken out saying that their tests can  
be done as effectively above ground. Once the  
wastes are deposited, and if gas generation  
does take place, then we must face the difficulty  
of removing these wastes. The difficulty rests in  
the political pressures that will arise to keep  
wastes at the site rather than remove them  
as the D.O.E. promises it will do. If removal  
becomes necessary, who would take these wastes?  
Colorado or Idaho? I believe that no  
state would take them and that N.M. would  
keep them by default. Under such circumstances,  
the experiment would be the equivalent of a  
permanent repository.

Secondly- The transport of nuclear and

(1)

hazardous wastes along our highways and past our towns and cities poses an undefined threat to public health and safety. The D.O.E. claims that there will be so little exposure of the materials to the general public that at almost only one person will die of cancer in the twenty-five years that the wastes are shipped. Is the D.O.E.'s version of a worst case scenario based on valid technical assumptions? The D.O.E. does not take into account the minute quantity of plutonium necessary to cause cancer and disease, as well as its long half-life, and its potential to contaminate for years. Nor does it deal with the reality of human error which could cause greater numbers of accidents and more damaging accidents than D.O.E. estimates.

As a doctor, I am concerned about the health problems that will result from nuclear and hazardous waste contamination. The D.O.E.'s emergency medical plan for victims of accidents or spills that occur during the transport of wastes is sketchy and inadequate. This plan does not adequately address the possibility of many people being simultaneously exposed at an accident site. This could happen when the wastes are transported past cities and towns. If such an incident did occur how would the specific wastes be quickly identified so that the appropriate entities could be used to treat the victims?

②

7.3.51

7.3.1-1  
7.3.2-2  
7.3.2-7

The larger concern radioactive substances remain in the body unneutralized and intact the greater is the chance of cancer and disease. Timely intervention is critical. How quickly could victims be treated or transported to nearby medical facilities? When I think about how deadly some of these substances are (such as plutonium), I am concerned that timely treatment may be very difficult to administer.

In conclusion: If the D.O.E. is to be regarded as a responsible agency, it must have a better plan for dealing with inevitable transportation accidents in order to insure the public's safety. And, it must have its WIPP site designated as an EPA approved storage site, not an experimental site, before it deposits wastes there.

Thank-you

William Weber M.D.  
June 14, 1989.

③

3.1-3

7.3.2-2  
7.3.2-7

SY MICHAEL DAVID LIPKIN (1)  
325 1/2 VASSAR ST.  
ALBUQUERQUE, N.M. 87106  
WILPP HEARINGS 14 JUNE 81  
ALBUQUERQUE HILTON HOTEL

WHEN THE TOTAL COST TO BUILD AND MAINTAIN NUCLEAR ENERGY AND NUCLEAR DEFENSE SYSTEMS IS COMPARED TO THE TOTAL VALUE SUCH SYSTEMS CAN PROVIDE FOR THE WORLD — ARE THEY REALLY WORTH THE EFFORT?

DOES THE WORLD REALLY NEED MORE AND CHEAPER ENERGY — PER CAPITA — OR, DOES THE WORLD NEED SYSTEMS THAT MAKE BETTER USE OF ALTERNATIVE ENERGY RESOURCES SUCH AS SOLAR, GEOTHERMAL, WIND, WOOD, FOSSIL FUELS AND GRAVITY.

AN OVERWHELMING AMOUNT OF EVIDENCE SUGGESTS THAT A PLETHORA OF CHEAP ENERGY WILL DEGRADE THE KIND OF CARING — CONSERVING MENTALITY THAT WILL BE NEEDED BY FUTURE POPULATIONS TO ASSURE THE SURVIVAL OF THE HUMAN SPECIES AND THE REST OF THE LIFE ON THIS PLANET.

(2)

HOW ~~GOOD~~ CAN THE RAPIDLY GROWING POPULATIONS OF THE WORLD MEET THEIR REAL ENERGY NEEDS WITHOUT BUILDING NUCLEAR ENERGY SYSTEMS?

THINK ABOUT THIS. — WE HAVE BEEN BUILDING NUCLEAR WEAPONS TO PREVENT NUCLEAR WAR — THE BOMBS ARE MADE SO WE WON'T HAVE TO USE THEM.

WOULDN'T IT BE BETTER TO NOT MAKE THE BOMBS SO WE WON'T HAVE TO USE THEM?

SURE, NUCLEAR WASTE COMES FROM MANY KINDS OF RESEARCH, NOT JUST BOMB MANUFACTURING. THE ATOMIC COMPLEX IS MADE OF ELECTRICAL GENERATING PLANTS, ~~RESEARCH~~ SCIENTIFIC RESEARCH AGENCIES, MEDICAL RESEARCH COMPANIES AS WELL AS WEAPONS LABS. THE PEOPLE IN THIS ATOMIC COMMUNITY SUPPORT EACH OTHER AND OFTEN JUSTIFY THEIR JOBS WITH SPECIOUS ARGUMENTS.

(3)

FOR A MOMENT, IMAGINE THE WORLD AS IT MIGHT HAVE EXISTED 10,000 YEARS AGO, IMAGINE THE LAND SURFACES COVERED WITH PRISTINE, PRIMAL FORESTS.

THE HUMAN POPULATION OF THE EARTH WAS MUCH SMALLER THEN. THE WEATHER WAS DIFFERENT TOO.

SINCE THAT TIME WE HAVE ACCELERATED OUR PER CAPITA CONSUMPTION OF ENERGY. NOW, WE ARE BURNING OUR PLANET UP BY CONSUMING FOSSIL FUELS AND WOOD AND WE ARE BURNING IT IN A NUCLEAR SENSE BY LIBERATING HEAT WITH ELECTRICAL DEVICES OPERATING WITH ELECTRICITY GENERATED BY NUCLEAR POWER STATIONS.

OUR FORESTS ARE DISAPPEARING FASTER THAN THEY CAN BE REPLACED TO BUILD OUR HOMES, FUEL OUR FIRES, AND CLEAR LAND FOR AGRICULTURE.

(4)

IF YOU PUT ALL THE FIRES WE BUILD EACH DAY ON THIS PLANET, INTO ONE SINGLE LARGE AREA, IT WOULD SEEM AS THOUGH THE WORLD'S LARGEST EVER FOREST FIRE IS RAGING. AND, TO MAKE MATTERS WORSE, THE BURNING SURFACE AREA IS INCREASING WITH EACH PASSING DAY.

THIS IS ONE OF THE STRONGEST ARGUMENTS SUPPORTING THE NEED TO DEVELOP NUCLEAR ENERGY. THIS IS A SPECIOUS ARGUMENT.

WE WILL NEED VAST AMOUNTS OF ELECTRICAL ENERGY TO FIX ALL THE PROBLEMS THE PEOPLE OF THE EARTH HAVE CREATED AS A RESULT OF THEIR ATTEMPTS TO SURVIVE. THIS TOO, IS A SPECIOUS ARGUMENT.

(5)

THE SECRET TO LIVING IN A WORLD FREE OF THE PROBLEMS DEPENDENCY UPON NUCLEAR ENERGY SYSTEMS CAUSE IS BOTH SIMPLE AND VERY DIFFICULT — WE MUST LEARN HOW TO DO MORE WITH LESS.

AT THIS POINT, I WOULD LIKE TO BRING YOUR ATTENTION TO THIS HANDKERCHIEF TO ME THIS IS MUCH MORE THAN A HANDKERCHIEF. IT COULD BE

1. A PURSE
2. SWEATBAND
3. WATER FILTER
4. BAGGAGE
5. EVAPORATIVE COOLER
6. PARACHUTE
7. PATCH FOR WORN CLOTHING.

THIS KIND OF THINKING, WHEN APPLIED TO THE DESIGN AND ENGINEERING OF ALL THE KINDS OF SYSTEMS WE BUILD, CAN MAKE A WORLD INDEPENDENT OF NUCLEAR ENERGY SYSTEMS.

WE REALLY CAN DO MORE WITH LESS!

THERE ARE TWO SOURCES OF POWER THAT ARE RARELY GIVEN ADEQUATE IMPORTANCE IN THE MASS MEDIA.

PROXIMITY POWER IS THE FIRST, THIS IS THE POWER LIVING CLOSE TO OUR NEEDS PROVIDES. WE SPEND LESS ENERGY SATISFYING OUR SURVIVAL NEEDS.

THE SECOND POWER SOURCE IS GRAVITY. GRAVITY IS UBIQUITOUS DEPENDABLE AND PREDICTABLE. GRAVITY IS CLEAN, AND USING IT DOES NOT GENERATE WASTE THAT MUST BE GONDED FOR CENTURIES.

I PROPOSE WE USE THESE TWO POWERS FOR MAKING OUR CITIES MORE VIABLE. WE CAN CONNECT NEW COMPLEX DESIGNS, THAT MAKE PROXIMITY POWER WORK, WITH RAMPS, DOWN WHICH FREE WHEELING OR FLOATING VEHICLES MOVE. EX00232

(7)

PLEASE DREAM WITH ME FOR A MOMENT.

YOU WAKE AS USUAL ONE FUTURE MORNING, AND AS YOU GO OUT YOUR DOOR TO GO TO WORK, YOU NOTICE YOUR CAR IS MISSING, ITS GONE, DISAPPEARED. SO IS YOUR GARAGE, THE STREET IN FRONT OF YOUR HOUSE, AND THE GAS STATION ON THE CORNER.

THE SCENE LOOKS AS THOUGH SOME POWERFUL ALIEN BEINGS CAME DURING THE NIGHT, AND REMOVED EVERY BUILDING, ROAD, PARKING LOT, AND SYSTEM THAT EXISTS TO SERVE AUTOMOBILES.

ALL BUILDINGS NECESSARY FOR THE SURVIVAL OF URBAN DWELLERS WERE KEPT AND MOVED INTO THE CLOSEST, MOST DENSE KIND OF WORKABLE, AND HUMANE CONFIGURATIONS.

NEW BUSINESSES AND TRANSPORTATION SYSTEMS WERE PUT IN PLACE TO ASSURE THE VIABILITY OF THE CITY.

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9-3

(8)

BECAUSE THIS "NEW" CITY TAKES MORE ADVANTAGE OF VERTICAL SPACE, SCENIC VIEWS OF FARMS, PARS, AND GARDENS ARE ABUNDANT.

OKAY, THIS IS A SCIENCE-FICTION SCENARIO - BUT MAYBE, JUST MAYBE, THIS COULD BECOME A COMMON KIND OF CITY IN THE FUTURE.

IMAGINE HOW MUCH ELECTRICAL ENERGY IS NEEDED TO BUILD AND OPERATE CITIES THAT DEPEND UPON AUTOMOBILES AS THEIR MAIN FORM OF TRANSPORTATION.

STREETLIGHTS, GIANTIC ADVERTISING SIGNS, TRAFFIC LIGHTS, AND MANY OTHER ELECTRICITY CONSUMING SYSTEMS ARE NO LONGER NEEDED WHEN WE ELIMINATE AUTOMOBILES FROM OUR CITIES.

THIS MEANS SOLAR AND RENEWABLE ENERGY SOURCES BECOME MORE FEASIBLE,

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9

IN CLOSING, MAKING OUR CITIES  
LESS DEPENDENT UPON AUTOMOBILES  
IS ONE WAY WE CAN DO MORE  
WITH LESS AND, IN THE PROCESS  
REDUCE THE AMOUNT OF  
NUCLEAR WASTE WE MAKE.

WE CAN BUILD A MORE  
BEAUTIFUL WORLD WITHOUT  
RESORTING TO NUCLEAR POWER!

Michael David Cohen

Smoke\$ the bear extra

In some future type there will be a continent called America  
It will have great centers of power. The human race of that era  
will get into troubles way over its head, and practically wreck  
everything in spite of its strong intelligent nature.

Moffets Evensong

The earth is in torment. Our desperate globe cannot be healed  
by power, aggression, plunder, blast and manufacture things  
for progress & its own sake, leisure & general prosperity  
therefore the earth shall die

Johnsons A press from the stardom age

Today meet water-holes turn poisonous  
Alloy the black skin has fallen  
& now in the haze of light the lived river & the lake are swollen  
& red w/their carpet of dust r desolating away.

Soon there will be no shelter  
We must pack & move in search of kinder country  
then will begin the dread migration  
never knowing which way is best  
to set foot because the perils can never be foreseen  
or wholly guessed, for who can tell what colour of the air harbours  
the most pain?

We fear that we may have brought w/us those breeding poisons  
of the worlds blight that blanch the earth & pale the light  
& already the leaders confer in the common interest  
for these were decent; did as they were told.

Say  
Shedders Money Goes up Stream

I am hearing people talk about reason  
These are people who do business w/in the law  
who love speed, danger & tricks  
who know how to twist arms, get fantastic wealth  
hurt w/ heavy shoulders of power  
Is this reason?

Lowells Fall

Back and forth goes the clock  
Our end drifts near the moon lifts radiant w/ terror  
The state is a diver under a glass bell  
A father is no shield & his child we are wild crying together  
Nature holds up a mirror I swallow takes a crumb  
It's easy to tick off the similes but the clock hands stick  
we have talked our extinction.

Mark Strand When the vacation is over for good

It will be strange  
 knowing at last it couldn't go on forever  
 The certain voices calling us over & over that nothing would change  
 And remembering too because by then it will all be done w/  
 The way things were & how we had wasted time as though there was  
 nothing to do  
 When in a flash the weather turned & the lofty air became unbearably heavy  
 the wind strikingly dumb, And our cities like ash  
 and knowing also what we never suspected  
 that it was something like summer At its most August  
 And even then because we will not have changed much  
 wondering what will become of things  
 & who will be left to do it all over again  
 And somehow trying, but still unable, to know just what it was  
 that went so completely wrong  
 or why is it we are dying

Daryl Kise The survivors

Some days the seas is everywhere & getting worse  
 Through the static we used to call the music of the spheres ...  
 Sing... will nobody sing in radioactive rain.

Gary Snyder For all

Ah to be Alive

I pledge allegiance to the soil

One ecosystem  
 in diversity  
 under the sun  
 w/joyful interpretation of fall,

DRAFT TESTIMONY ON WIPP BY DAVID K. DUNAWAY, PH.D.

I AM A PROFESSOR AT THE UNIVERSITY OF NEW MEXICO, BUT SPEAK  
 AS AN ORDINARY CITIZEN, REPRESENTING NO ORGANIZATION OR  
 BRANCH OF SCIENTIFIC RESEARCH. THUS I WILL BE BRIEF.

THE ROOT OF ALL OUR PROBLEMS WITH THE WASTE ISOLATION PILOT  
 PROJECT IS THE MISTAKEN AUTHORIZATION OF NUCLEAR POWER  
 PLANTS, NUCLEAR ENERGY TEST AND RESEARCH SITES, AND NUCLEAR  
 MEDICINE TO BEGIN OPERATION BEFORE THE FEDERAL GOVERNMENT  
 DEvised AND TESTED A SAFE PLAN FOR THE DISPOSAL OF NUCLEAR  
 WASTES.

NEW MEXICO IS BEING ASKED TO ACCEPT THE BURDEN OF THE  
 FEDERAL GOVERNMENT'S CAPRICIOUS AND UNPLANNED ACTIVITIES IN  
 FOSTERING NUCLEAR POWER. THIS IS A NATIONAL MISTAKE WHICH  
 THE CITIZENS OF NEW MEXICO SHOULD NOT BE ASKED TO REMEDY  
 UNTIL THE POINT THAT THE FEDERAL GOVERNMENT CAN ASSURE--IF  
 SUCH A THING IS POSSIBLE--CONTINUED PROTECTION AND  
 SURVEILLANCE OF THESE WASTES FOR A PERIOD OF 100,000 YEARS.

MY SPECIFIC OBJECTIONS TO THE DRAFT SUPPLEMENTAL  
 ENVIRONMENT IMPACT STATEMENT ARE, FIRST OF ALL, THAT THE  
 DOE HAS NOT CONVINCED ME OR MANY OF MY FELLOW CITIZENS THAT  
 TESTS DONE AT THE WIPP SITE OFFER CONVINCING PROOF THAT THE  
 WIPP SITE IS READY FOR THE DEPOSIT OF NUCLEAR WASTE.



MY MAJOR JUSTIFICATION IN SAYING THIS IS THAT THE DOE HAS ATTEMPTED TO POSTPONE ITS COMPLIANCE WITH EPA STANDARDS AT THE SITE. NO NUCLEAR WASTE SHOULD BE DEPOSITED IN WIPP UNTIL THESE STANDARDS FOR PROJECTED RADIOACTIVE RELEASES CAN BE MET. ONCE THAT RADIOACTIVE WASTE IS DEPOSITED AT THE WIPP SITE, THE AREA SURROUNDING THE WASTE BEGINS TO BE CONTAMINATED AND IS UNSUITABLE FOR OTHER PURPOSES.

THE SECOND GROUNDS FOR MY OBJECTIONS ARE THAT THE SOURCES FOR THE WASTE HAVE NOT BEEN VERIFIED TO BE OF THAT "LOW-LEVEL" CATEGORY FOR WHICH THAT SITE WAS DESIGNED. I REFER IN PARTICULAR TO THE SEVERAL THOUSAND UNLABELLED BARRELS OF WASTE DESTINED FOR WIPP THE CONTENTS OF WHICH THE DOE'S ONE CONTRACTOR IN ROCKY FLATS HAS ATTEMPTED TO CAMOUFLAG. NO ONE KNOWS WHAT SITS IN THESE BARRELS. UNTIL A COMPLETE INVENTORY IS TAKEN, NO DEPOSIT OF MATERIALS AT THE WIPP SITE CAN BE JUSTIFIED.

MY THIRD AND FINAL OBJECTION IS THAT THE DOE HAS NOT COMPREHENSIVELY EXAMINED INTERIM AND LONG-TERM ALTERNATIVES TO THE STORAGE SITE. THE DRAFT SES DOES NOT DISCUSS SUCH ALTERNATIVES DESPITE THE APPARENT CITIZEN INTEREST IN AVOIDING A DEPOSIT OF LOW-LEVEL WASTES AT THIS TIME.

THANK YOU FOR YOUR ATTENTION TO MY TESTIMONY. THE WIPP SITE SHOULD NOT OPEN UNTIL THE EPA STANDARDS CAN BE MET, UNTIL ALTERNATE STORAGE PLANS ARE EXHAUSTED, AND UNTIL A COMPLETE INVENTORY IS TAKEN AND VERIFIED OF THE WASTES THE DOE WISHES TO STORE.

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7.9-3-3

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5.3-1

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Let me begin with two premises.

1. We have over 40 years of nuclear waste. It will not go away. We must deal with it.
2. Our decisions must be based on the very best information we have at the present time.

Given those underlying assumptions, I will discuss five factors that, as a whole, frame and define my views on WIPP. In order, they progress from global to specific.

FACTOR 1. Nuclear power world-wide is here to stay. It is in our interest to work with all nations to further its safest creative use for the well-being of all of us. There is no question that wider use of nuclear power to generate electricity will forestall and lessen the "greenhouse" effect, surely a major threat to our tenure here on earth. Continuing to burn fossil fuels at the rate we do is untenable. Nuclear powered electric plants in this country have been extremely safe, even with the constant factor of human error.

FACTOR 2. Many people are passionately afraid of and opposed to nuclear power as being different in kind, not just in degree of danger. They also distrust Federal approaches, attitudes and actions in all matters concerning WIPP and by extension safety measures in and around nuclear component factories. The information from Rocky Flats and the WIPP site itself is not good.

Citizen pressure has cancelled, delayed and closed down nuclear power plants and has already been effective in shifting patterns of nuclear waste disposal plans - witness this gathering. I believe citizens' concerns should be dealt with and that you, as decision makers, must include in your deliberations the concerns of troubled citizens who will be living with the consequences of your decisions. That leads me to factor 3.

FACTOR 3. The DOE must do a better job. There have been lapses in security, sloppiness in carrying out directives, poor monitoring and less than open discussion of what has transpired and what is now in progress. Without massive changes in attitude and approach, the public is never going to support any proposal from DOE for fear that all information is not given accurately and openly. We must be able to assemble a team that is smart and skilled in science and technology and can also work well with lay people to address their concerns as plans are made. All of which leads me to factor 4.

FACTOR 4. Our actions in any arena can be based only on our present knowledge. We cannot wait for an ultimate, perfect, permanent solution for many of our problems. There is no way we can assure that no risk will ever occur at a nuclear power plant, a waste disposal site, or for that matter, on an oil rig or in a coal mine.

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I believe we must start using interim measures - present best - for waste storage while continuing to research more effective ways to treat, reuse, neutralize or dispose of our waste.

I suggest a massive federal mobilization of money and brains to deal with nuclear safety and waste disposal which is a massive growing problem for our country. We poured money, brains and urgent time into the development of nuclear energy. We can do no less to clean up our mess.

FACTOR 5. Given the foregoing factors I believe that at one point WIPP should and will open. Ultimately other sites, publicly quite different in design and circumstances, will open. Before WIPP's opening occurs, I believe that important safety measures must be in place and that our Federal government must prove its concern, working with citizens all along the way as these measures are planned and completed.

Money for roads must be appropriated so that construction can proceed quickly. Trucks must go through extensive tests. The issue of mixed hazardous waste must be faced and resolved. In-depth emergency training along with appropriate equipment, must be provided to personnel along transportation routes. Some testing conditions must occur concerning the technical safety of the WIPP site itself. A smart means to monitor and evaluate WIPP must be initiated. Citizens want and deserve regular reports and more than "good faith" efforts.

To recap my message:

1. Nuclear power is here to stay and can be harnessed for beneficial uses.
2. People's fears of nuclear radiation must be taken into consideration and resolved to the best of our ability.
3. DOE must do a better job, technically and in public relations.
4. We must mobilize massive long range efforts to deal wisely and well with waste and at the same time start with the best interim steps we have to deal with present problems.
5. WIPP will open, but first the Federal government should prove to us that all possible and reasonable safety measures are in place and working well.

Bernie Beerhouser  
Councilor, City of Santa Fe

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5-3-1

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7-12-9-1  
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June 15, 1989  
Submitted by Carol Miller  
American Public Health Association  
13-Jun-89; EX-00301, PAGE 1 OF 3  
DELAY WASTE ISOLATION PILOT PROJECT (WIPP); A NUCLEAR WASTE REPOSITORY. UNTIL SAFETY IS ASSURED

The American Public Health Association,

Having passed thirteen policy resolutions regarding radiation hazards since 1954 (1.), and

Providing leadership in efforts to monitor and abate radiation hazards for more than thirty years, and

Noticing with alarm the attempt by the Department of Energy to rush the opening of the Waste Isolation Pilot Project (WIPP), in Loving, New Mexico before there are Environmental Protection Agency standards promulgated to address the siting and operation of nuclear waste repository facilities; and

Noting that DOE internal testing has found an unforeseen brine seepage that may compromise the suitability of the entire site, and

Understanding that there is no completely safe mechanism to transport nuclear waste and that the DOE selection of truck transport constitutes a potential health hazard to large numbers of people; (2.) and

Recognizing that 1607 radioactive waste shipments planned for transport to the WIPP site, in the first three years of operation, will pass through at least twenty three states and constitutes a potentially significant national health hazard; therefore,

1. Urges the Department of Energy to delay the opening of WIPP until its safety is assured by federal health agencies independent of the Department of Energy; and
2. Urges the Department of Energy to immediately carry out the baseline health studies it promised communities close to the WIPP site. These studies must be completed prior to the storage of any waste; and
3. Calls upon the Environmental Protection Agency to develop and implement, with public involvement, standards that assure the safe operation of nuclear waste repositories; and
4. Urges Congress to mandate the development of technology and procedures for the safe transport of nuclear waste, which includes containers that pass DOE and independent laboratory testing, prohibits the transport of nuclear waste trucks through populous areas, and to use alternate/bypass routes around population centers.

REFERENCES

1. American Public Health Association, Public Policy Statements, January 1988. Resolution numbers 3409, 3604, 5703, 5611, 5906, 6106, 6117, 7207, 7308, 7909, 8117, 8124, 8214.
2. Department of Energy, Albuquerque Journal, August 21, 1988. "WIPP Class Excess Fears of Disaster Officials."

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**New Mexico Public Health Association**  
P.O. Box 26433 Albuquerque, N.M. 87125

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**RECORDED NAME ON THE WASTE ISOLATION PLICE PLATE (WIPP)**

At its 116th Annual Meeting, held in November 1988, the American Public Health Association (APHA) adopted a policy statement calling for delay in the opening of site until safety is assured. As the nation's first permanent nuclear waste repository, WIPP will set precedent regarding siting, siting, safety, and public health. WIPP and the four plants listed in the resolution.

1. Schedule for WIPP's opening  
Despite many unresolved issues -- including geotechnical questions about the site's suitability raised by brine seepage and brine reservoirs, handling of "mixed" (radioactive and hazardous) wastes, and lack of certified safe shipping containers -- the Department of Energy (DOE) intends to open WIPP in September 1989, since the original October 1980 opening date was not met. According to DOE, there is no imminent health and safety danger at its existing waste storage sites. In its 1980 WIPP Final Environmental Impact Statement (FEIS) and in its April 1989 Draft Supplemental FEIS, DOE states that there are no environmental reasons why wastes cannot continue to be stored "for several decades or even a century" at the Idaho National Engineering Laboratory (INEL), where such of the existing transuranic waste is stored. DOE's rush to open WIPP apparently is based on political expediency: trying to show that the waste problem is being solved and beginning to remove wastes from INEL in response to Idaho Governor Cecil Andrus's demands.

The New Mexico Public Health Association (NMPHA) believes that public health concerns should not be sacrificed to political expediency. Therefore, NMPHA has urged DOE to delay opening WIPP until the following conditions are met: Safety concerns are justified because existing DOE facilities were not required to meet independently established and enforced health standards and toxic materials into the environment for many years. The resulting contamination threatens public health and will cost taxpayer's tens of billions of dollars to clean up. Federal health standards that should be met include compliance with Department of Transportation and Nuclear Regulatory Commission requirements for waste transportation packages; Environmental Protection Agency (EPA) standards for transportation, storage, and disposal of mixed radioactive and toxic materials under the Resource Conservation and Recovery Act (RCRA); and EPA standards for permanent disposal of nuclear wastes.

2. Need for baseline health studies  
In 1981, as part of a settlement of the State of New Mexico's WIPP lawsuit, DOE agreed to provide funding and assistance for conducting baseline health studies of people living near the WIPP site. Such studies could document current levels of radiation in the environment and provide reliable data on the current health of residents for comparison to health conditions during WIPP's operations. Instead of funding such studies, DOE initiated its own Radiological Baseline Program in 1984 to develop radiation monitoring facilities near the WIPP site. Since health data will be needed, DOE should fund independent conduct baseline health studies prior to WIPP's opening.

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7.12.10-1

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3. Environmental Protection Agency disposal standards  
EPA is legally required to develop standards to limit releases to the environment from waste repositories for transuranic and high-level wastes. EPA promulgated such standards in 1985: 40 CFR 191, Subpart A for storage and Subpart B for disposal. As a result of a lawsuit by the Natural Resources Defense Council, Conservation Law Foundation of New England, the Environmental Policy Institute, and the states of Texas, Minnesota, Maine, and Vermont, in 1987 the First Circuit Court of Appeals reversed the Subpart B requirements because, among other reasons, they did not limit radionuclide releases to ground water as such required by the Safe Drinking Water Act. EPA is expected to promulgate revised standards in late 1989 or early 1990. The standards should be applied by using data from any sites and computer models to project possible release scenarios for 10,000 years. For any other repository, such performance assessments to demonstrate compliance with the standards would have to be completed before the facility could be constructed.

DOE's position until 1987 was that WIPP would comply with the EPA disposal standards. Since 1987, DOE has maintained that it must replace some wastes at WIPP in order to collect some of the necessary data for the performance assessments. However, during the past two years DOE has been unable to produce even one public document to justify why wastes must be replaced, how such wastes would be needed, what specific experiments would be done and for what period of time, what specific data would be provided and how that data relate to performance assessment requirements.

Because any other repository must demonstrate compliance with the EPA disposal standards before wastes are emplaced, because DOE does not have any reasonable justification for such experiments, and because no plans exist to retrieve, remove, and store such experimental wastes at any other site, NMPHA believes that EPA should set standards to protect public health and that DOE should demonstrate compliance with recomputed EPA standards prior to emplacement of any wastes at WIPP.

4. Transportation safety issues  
The APHA resolution recognizes that there is no completely safe way to transport nuclear wastes. Given DOE's current estimates that there would be more than 34,000 truck shipments to WIPP, accidents will certainly occur. Such a large increase in shipments requires additional measures to safeguard public health.

Therefore, the NMPHA urges that, at a minimum, all waste shipping packages be required to pass physical and computer model tests and that the Nuclear Regulatory Commission independently assure the safety of the shipping containers. Further, to limit the immediate risks to public health, waste transportation through populous areas should be prohibited and, where necessary, bypasses or alternative routes should be constructed prior to shipments of any wastes to WIPP. Finally, adequate training and radiation monitoring equipment should be provided to emergency response personnel along all WIPP transportation routes before any wastes are shipped and such training and equipment should be continually updated throughout the operational life of WIPP.

April 1989

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2871 Plaza Blanca  
Santa Fe, NM 87505  
June 11, 1989

The Waste Isolation Pilot Program (WIPP) presents a multitude of serious potential health and safety problems, risks to the general public, which have not been addressed fully.

One such hitherto ignored problem is the following: This projected project will extend over 20-25 years and involve thousands of truckloads of radioactive waste (including plutonium) transported over thousands of miles interstate and two-lane highways thru some 20 or more states. It is imperative that trained emergency personnel be in constant readiness along all of these truck routes to respond immediately to the ever present risk of accidental spills. Logistics and technical levels of training must be kept at constant update. Clearly the Federal Government must assume this responsibility.

The past history of the Dept. of Defense end of DOE performance and responsibility in the 40 years of nuclear weapons manufacture has left a trail of nuclear waste contamination of the environment of incredible magnitude. All five of these production facilities are presently shut down; Hanford Washington, Idaho Engineering, Rocky Flats, Ohio Feed Process, Savannah River. Senator John Glenn has stated that-- "in the name of national defense we have been poisoning our citizens", and the cost now will be billions of dollars for clean up.

Further revelations have now come to light. The FBI has (as of June 6, 1989) filed an affidavit, following search, charging criminal violations at Rocky Flats involving

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illegal burning of radioactive waste and illegal discharge of hazardous wastes into streams and lakes supplying domestic water to Broomfield a city of 27600 people and other Colorado towns. They further charge cover-up by DOE and Rockwell International Corp. the plant operator.

New. (June 11, 1989) NM Governor Carruthers and New Mexico Tourism and Economic Development Head, John Dendahl, place themselves squarely as supporters of this ongoing debacle when they/an attack upon New Mexico businesses which have raised honest questions about WIPP, in effect impugning and penalizing citizens' free speech.

Can the people NOW or Ever trust DOE to carry out this new promise and responsibility to make WIPP safe?

John Collignon, M.D. *John Collignon*

Harold Brown, M.D. *Harold Brown*  
FOR Physicians for Social Responsibility (PSR)  
New Mexico/Santa Fe

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Peter Goodwin  
Councilor, District 1  
City of Santa Fe  
Santa Fe, NM 87501

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Re: Statement Before DOE Hearing, June 15, 1989,  
Supplemental Environmental Impact Statement

I appreciate this opportunity to comment on your Supplemental Environmental Impact Statement for the WIPP Site. My statement is brief.

My one single point that I want to transmit to you as someone representing a district of 8,000 registered voters and a community of 60,000 people is that you must stop being so callous towards human life.

You must stop being sloppy with your methods and you must stop being sloppy with your thinking. You must stop being negligent in the conduct of your activities.

This supplemental report is suspect and those were the reasons why. And there are 600 hundred more people here to tell you the same whys. You have a thankless job dealing with hazards to human life, and you have managed to lose your credibility to deal with them.

What, then, can you do?

Start by valuing the human factor. Start by making this Hearing more accommodating the lives and fears of this community. Start by going the extra mile and abide by regulatory criteria and your contractual agreements. Start by assuring the public through your actions that you mean to be responsible.

Only in taking care of this business will you be allowing yourselves to take care of your own.

That is all I have to say on behalf of myself, my district, and this community. Thank you.

Sageemaya Dandi, 1492 Canyon Road, Santa Fe NM 87501

15-Jun-89; EX-00304, PAGE 1 OF 8  
WIPP Testimony

Gentlemen, before I proceed I wish for you to understand the position in which I place myself in order that you might accurately understand from whence I speak. I was born just outside of Chicago in 1944. In seven years of riding a bicycle on U.S. highways, I have covered over 100,000 miles. I have suffered catastrophic injuries six times, never been at fault and never received monetary compensation. This past year, I engaged in a telephone conversation with my Honorable Congressman Bill Richardson. I told him, "I am not an American .... I am a bicyclist. Anywhere, on the earth that I live, I expect to be treated fairly."

I am elated that the DOE is here for citizen input. I have tried every method I know to get the federal government address the issue of responsibility for Movement and Public Highways. This is the first time, other than in tangential ICC regulations, that the issue of federal rights, individual's property rights, and the issue of state's rights to regulate transportation have inapplicably met.

If I might paraphrase Will Rogers, my knowledge comes from the newspapers. So, please correct me if I am wrong, but as I understand our structure of governmental society, the DOE, a subsidiary of federal government, has the right to invoke two words - "national security" or "national defense" and do

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anything that they want regardless of what these hearing might reveal.

We have a wonderful system of free enterprise and Capitalism in the United States. It is a system to which the entire world is gravitating. I want to read to you a definition of capitalism which comes from the New Merriam Webster Dictionary in our local Public Library:

Capitalism -- an economic system characterized by private or corporate ownership of capital goods, by investments that are controlled by private decisions rather than by state control, and by prices, production, and the distribution of goods that are determined mainly in a free market.

If I, and my many brothers of the bicycle, had not suffered so inextricably and execrably, I suppose I should find it humorous that public highways in the United States, which cater to automotive transportation, is the only place where the concept of property does not exist.

1. If we as human beings believe that we have the right to create any substance defined as hazardous, and furthermore submit that for our safety that the substance must be moved, we have an unparalleled responsibility to establish safety in movement on public highways. And we are going to redesign the automotive transportation system.

2. I charge that the paved roadway section of public high-

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7.3.6.1-1

ways in the United States, is the most dangerous section of space on the planet where any human can be. Moreover, New Mexico highways are the most dangerous of any of the states in this nation.

3. It is well within the realm of intelligent life on the planet, to re-engineer a transportation system which will entirely eliminate the possibility of a 3,000 lb. mechanical device from slamming into a human being.

4. The Department of Energy in callous disregard to its own SEIS document (check page 8), which states that rail transportation would be safer than trucking, is attempting to move the most dangerous substance known to man, by a method which is the most dangerous of all the transport systems, in a space that is the most dangerous on the planet.

Such actions challenge the intelligence of reasonable and prudent people, and the democratic process that gives legitimacy to the United States.

Wise men can debate and argue and have opinions about what would be the best space for something to be in. One could be right or all could be wrong. But the issue which defies debate is movement. All of the facts are clearly in front of us in transport. If we cannot establish a system of safety in movement then we all need to draw a circle and remain inside.

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7.3.6.1-1

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7.3.6.1-1

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Both state and federal Highway Transportation officials have confirmed that automotive transportation is doubling every 15 years. Moreover, in high-growth areas such as sun-belt states, the growth is much more rapid. If I might submit these two copies of newspaper clippings: (1) One, from USA Today, contends that the United States is "Losing Its War On Gridlock."

An axial Gridlock is a word that has been created over the past 25 years, solely the result of the automotive transportation system to meet the demands placed upon it.

(2) The second, from the Albuquerque Trib/Journ, shows how deaths on New Mexico highways have increased 33% during the first four months of this year. Has the Department of Energy figured in such an increase in its figures for projected accident data?

Likewise, here is a December 30, 1988 article about a truck driver I named C. C. Ryder: COCAINE CHARLIE RYDER! He was stopped near El Paso after ramming nearly 20 cars with his tractor trailer. The article states that when arrested he was incoherent, perhaps euphoric. Also, that a cache of cocaine was found in the cab of his truck at the time of his arrest. What if some such person, with no insurance, slams into a nuclear truck?

Clearly, the era where a branch of government can blame an individual for responsibility for the devastation of property on public highways has come to an end. If we have to have automotive transportation, then WE HAVE TO PAY FOR IT.

Automotive transportation on public highways has made a mockery of the concept of law.

In my opinion, our divisions of government is too inextricably

7.3.3-1  
7.3.6.1-1

31-5  
7.3.2.1-2  
7.12.9-6

7.3.2.1-2  
7.3.6.1-1  
7.12.9-6

enmeshed to fail to address the issue. In Income Tax and Social Security and Immigration and Nationalization. All of these presumably federal systems is now linked to the 10th Amendment to our U.S. Constitution. The very interesting words are, as follows:

The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people.

I would specifically like to call attention to the last four words of the Amendment: "or to the people." Heretofore, the States have interpreted this Amendment to mean that they could promulgate automotive transportation, regardless of the issue of property.

Now it would seem to me from the wording of this amendment that neither federal nor state governments could invalidate nor supersede a local democratic vote on the issue until the amendment is changed. Certainly federal or state entities' attempts to circumvent "property" by virtue of the ambiguity of the Price-Anderson Act, would stand little chance of voter approval. Local communities in Santa Fe County and New Mexico are heavily dependent on tourism and recreation.

That is no longer the case. No people in a democratic society of free enterprise will accept a federal government withering from the grasp of responsibility of property while contending "the authority" to invoke federal rights in the sovereign domain of local peoples.

31-5  
7.3.2.1-2  
7.3.6.1-1  
7.12.9-6





**HOW USA IS LOSING THE WAR AGAINST GRIDLOCK**  
THE TALE OF 5 CITIES: 7A



**COVER STORY**  
**L.A. jams are 'sheer terror' on the roads'**

More cars, more people mean half of continuing jams will be at a dead stop

**LOS ANGELES** - At 7:30 a.m. on Monday, June 15, Los Angeles commuters were stuck in traffic jams that were as long as the city itself.

The jams were the result of a combination of factors, including a major earthquake in the city last week, a major fire in the city last week, and a major flood in the city last week.

The jams were the result of a combination of factors, including a major earthquake in the city last week, a major fire in the city last week, and a major flood in the city last week.

**Electronics prices take a jolt up**

Prices for electronic components have risen sharply in recent months, according to industry analysts. The rise is attributed to a combination of factors, including a major earthquake in the city last week, a major fire in the city last week, and a major flood in the city last week.

**Sakute to fallen heroes**



A man in a military uniform stands in front of an American flag, paying tribute to fallen heroes.

Presentation at MIPP - SEIS Public Hearing  
Santa Fe N.M., June 15, 1989

By: Rex Allender, Executive Director  
Center for Rational Energy Alternatives, (CREA)  
Suite 410, 110 2nd St. SW, Albuquerque, N.M. 87103

My name is Rex Allender, and I am the Executive Director of Americans for Rational Energy Alternatives (AREA) a pro energy organization. Our organization is made up of members who are interested in and supportive of all forms of energy which can be used as an alternative to American dependence upon foreign oil imports.

I would like to make two general points. The first is about nuclear energy itself. Listening to what some of the opponents say about MIPP I am struck by the thought that they probably hope by attacking or crippling or delaying the MIPP project by whatever means they may contribute to the general demise of anything nuclear in America. *to the point of I* I don't believe this will happen. The move toward nuclear power generation is well underway in the industrial nations of the world. The nuclear genie is out of the bottle and we won't be able to put it back in. There is no stopping or turning back the clock to a simpler time of life, regardless of what some of us might like. Therefore we as a society and a government must face up to this fact of life and deal with the issues it raises in a logical and rational manner - and deal with them now.

I would like to illustrate this point with something you may find interesting. What I'm going to read is an excerpt from a speech contained in the Congressional record in 1875. "A new source of power,...called gasoline, has been produced by a Boston Engineer. Instead of burning the fuel under a boiler, it is exploded inside the cylinder of an engine

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...This begins a new era in the history of civilization ... Never in history has society been confronted with a power so full of potential danger and at the same time so full of promise for the future of man and for the peace of the world. The dangers are obvious. Stores of gasoline in the hands of people interested primarily in profit would constitute a fire and explosive hazard of the first rank. Horseless carriages propelled by gasoline engines might attain speeds of 14 or even 20 miles per hour. The menace to our people of vehicles of this type hurtling through our streets and along our roads and poisoning the atmosphere would call for prompt legislative action, even if the military and economic implications were not so overwhelming."

I think we as a nation have survived the kinds of fears expressed about gasoline in 1875 and I suggest we can survive the nuclear issue as well. We just need to get on with it.

My second point is about the MIPP project.

Our immediate problem about the storage of transuranic waste will not go away. We must have a permanent storage site - the longer we delay in starting a storage program, the more costly and difficult the ultimate solution becomes. We have the ingredients at hand for such a storage program:

1. The TRUPACT II container for transporting the wastes, which has gone through extensive testing and is now under review for certification by the Nuclear Regulatory Commission. We have viewed some of the testing processes and gone over the data about TRUPACT II and are convinced that the container will be safe and useable for its purpose.
2. A well designed transportation system, with detailed monitoring, to get the wastes to the storage location. The monitoring process, through satellite tracking, is certainly state-of-the-art. We do believe however that the training process for first responders should be done on a continuing basis throughout the life of MIPP to compensate for changing local personnel. Also, the upgrading of the state roads on the route should be

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7.3.1.1-177.3.2.2  
7.12.5-1

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funded and constructed as soon as possible.

3. The best kind of storage site, in the salt beds at Carlsbad, which reputable and dispassionate professionals agree is a safe site for ages to come. The fact of the age of the salt beds - some 200 million years - indicates the permanency of the site.

4. A program for limited storage and testing of wastes in order to verify the process itself before committing to full term storage. It is certainly a rational method to test in place the storage process as opposed to doing it empirically or outside the salt beds.

We certainly agree that in our society there is every right for discussion, pro and con, of major issues like this. And this subject has certainly been discussed at great length over the past few years. But there comes a time when discussion should cease, decisions be made and we get on with it. We have talked enough - we must get on with it.

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7.12.1-2

1-1

Rex Tilousi  
HAVASUPAI VICE-CHAMAN  
Representing Havasupai Tribal Representative

Written Testimony  
Department of Energy - SEIS hearings

We, the Havasupai people, are here to speak of the beginning. The beginning of the end of the planet and all life on mother earth.

We the Havasupai people believe we were put here upon mother earth for a reason, and as keepers and gardeners of the Grand canyon. We feel we were put here to care

For the land for we feel that our mother earth, mother who our under the moon is all in our relations. We want to see our mother earth and the elements that are within our mother earth should be kept within the earth and not be taken out and turned into waste and dumped back into our mother earth. It is not the way of all Indian peoples.

The mine that is now being proposed upon the rims of the Grand Canyon, where we live

The tailings the waste that is going to come from these mines will run down to where we live just like the waste buried at waste will travel to the lands and waters of other peoples.

IN YEARS TO COME THE WASTE IS GOING TO EAT THE MESS OF THE HAVASUPAI PEOPLE. NOT ONLY THE GIBBS OF THE PEOPLE BUT ALL LIFE UPON MOTHER EARTH. MAY WE ALL CONTINUE TO WALK IN THE BEAUTY THAT MOTHER EARTH HAS PREPARED FOR US.

*Rex Tilousi*  
Havasupai Tribe  
P.O. Box 10  
Supai, Arizona 86435

# 307.

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Give me the freedom  
 of all the waters  
 Give me the freedom  
 of the streams  
 Give me the freedom  
 of the undisturbed garbage  
 Give me the freedom  
 of our earth  
 Give me the freedom  
 of all the birds  
 Give me the freedom  
 of the ones that should be free

Many pray to God  
 & think to Al  
 some remain silent  
 that is their way of praying  
 Let's see when you realize  
 " when the time will come  
 that we won't have any bird site  
 work in the earth to be put out

Give me the freedom "  
 Love the Pastor & Hisay -

EX 00308

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Pastor Submitted by Myke Pison

WEPP MUST MEET NEW  
 E. P. A.  
 STANDARDS

# THE ESSENCE OF HOPI PROPHECY

*The entire Hopi prophecy takes many days to tell, and many lifetimes to fully understand. This is a summary of some essential points.*

## The Balance of Life

An caretaker of life we affect the balance of nature to such a degree that our own actions determine whether the great cycles of nature bring prosperity or disaster. Our present world is the unfolding of a pattern we set in motion.

Our divergence from the natural balance is traced to a point preceding the existence of our present physical form. Once we were able to appear and disappear at will, but through our own arrogance we took our powers as instruments of creation for granted, and neglected the plan of the creator. As a consequence we became confined to our physical form, dominated by a continual struggle between our left and right sides, the left being wise but clumsy and the right being clever and powerful but unwise, forgetful of our original purpose.

## The Cycle of Worlds

This suicidal split was to govern the entire course of our history through world after world. As life resources diminish in keeping with the cycles of nature, we would try

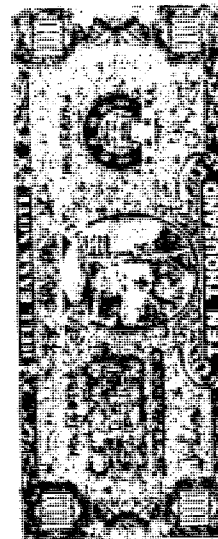
to better our situation through our own inventions, believing that any mistakes could be corrected through further inventions. Through our cleverness, most of us would lose sight of our original purpose, become involved on a world of our own design, and ultimately oppose the order of the universe itself, becoming the mindless enemy of the few who would still hold the key to survival.

In several previous worlds the majority have advanced their technology in this way, even beyond what we know today. The consequent violations against nature and fellow humans caused severe imbalances which were resolved in the form of war, social disintegration and natural catastrophe.

As each world reached the brink of annihilation, there remained a small minority who had managed to live in ready compliance accord with the infinite plan, as implied in the name, Hopi. Toward the final stages they would encounter signs of disintegration within, as well as criticizing others and severe threats from without, aimed toward forcing them to join the rest of the world.

## Our Present World

Our common ancestors were among the small group who



## TESTIMONY FOR THE RECORDS OF THE HEARINGS ON THE SUPPLEMENT TO THE ENVIRONMENTAL IMPACT STATEMENT

by  
Thomas Francis Tarbet  
for  
THE PLANTING STICK PROJECT

THE PLANTING STICK PROJECT  
PO BOX 100  
SANTA FE, NEW MEXICO 87505

INTRODUCTION

Democracy is now dead. The manner in which the Waste Isolation Pilot Project at Carlsbad came into being has driven this fact home to us in incontestable terms.

When New Mexico's Governor Tony Anaya first took office, he was shocked to learn that at no point in the development this effort did the people of New Mexico have the chance to refuse WIPP, should they see fit to do so. Nor does the Constitution of the State of New Mexico allow a popular referendum.

As a result of this situation, many New Mexico citizens have been become involved, at tremendous personal sacrifice, in a desperate effort to learn exactly how this occurred, and discover whether there remains any means by which to regain control of their lives and destiny.

At the time of this presentation, approximately \$780,000,000 has been taken from the United States taxpayers at point, and sunk into an enterprise of great and incalculable impact on the local environment as well as the entire biosphere. The grand irony is that this is being done as part of the effort to defend democratic principles through military force. If those principles are to be sacrificed in the attempt to save them, we would be the idiots of the universe not to ask why the effort is made in the first place.

On the face of things, it may be argued that by being allowed to speak their minds at a hearing such as the present one, we are engaged in the democratic process. But when viewed in those terms the hearing becomes a hollow charade.

The truth still stares back at us: The people have no control. Even at a public hearing financed from their wages through taxation which they have no accented legal option to refuse, their words can be ignored at the whim of strangers. The only hope is that something can be said that the conductors of this hearing will take to heart. Something more eloquent than the writing on our respective psyches.

I propose that we consider the thoughts of the title-holders of this land. Upon hearing of the first atomic blast, through private messengers who saw its light firsthand, they sounded an alarm to the world. Hardly anyone heard it at first. Modern people are very deaf. But its echoes can still be heard.

All that must be said concerning their message to the world cannot be considered in the time allotted. But the time will be well spent if the need is planted in a memorable way. Since these messengers of fate caution us to remain lighthearted through the trials of which they warn us, I have included, in each packet of information being given to you, one bookmark for ten thousand dollars. It is a bribe. Its significance is explained in an enclosed note, as a token to call your attention to the major premise of the Hopi Message of Peace.

TESTIMONY

"Those who deny freedom to others deserve it not for themselves, and, under a just God, cannot long retain it."

These words, attributed to Abraham Lincoln, may be found on literary tracts distributed by traditional Hopi in the decades immediately following the development of the first nuclear weapons. By touching upon the highest aspirations of the culture of their oppressors, the traditional leaders of the Hopi nation sought a common ground from which to convey certain facts that might otherwise seem incomprehensible. Facts on which would depend the lives and fortunes of both sides of the issue of forced acculturation.

Lincoln's words appeared to reflect the basic principle of the Hopi Way, that no person should exert force over another, in a manner that emphasize the underlying cause of the actual pattern of events in our world, of which the prophetic teachings of the Hopi are simply a reflection. A basic theme is that to be an oppressor is to reap future oppression. By cheating the indigenous nations, in the past and in the present, (as in the case of puppet governments selling out Indian resources), the United States has bargained away the liberty and prosperity of its people.

Hopi Prophecy is not speculation. Nor should it be mistaken for "psychic prediction" and other mystifications. It is the very survival knowledge to which the Hopi owe their continued existence for uncountable millennia, which they offer the world at this critical time. Properly understood, this knowledge could bring the arms race and the entire rule of ignorant force now rampant in our world, to an acceptable conclusion.

The Art of Peace practiced by the true Hopi is the exact opposite of rule by force. Through a higher order of causality, of which the visible world is the manifestation, harmony within the individual and in the local community is known to have a powerful pacifying influence throughout the world. It is a basic tenet of Hopi life that we do more to bring peace by cleaning up our internal affairs than by intervening in the affairs of others.

For centuries the Hopi have demonstrated that the social order of an entire nation (and therefore the world) could be based upon this simple fact. By the same token, they are actually aware that the violation of the liberty of others, even in the interests of peace and prosperity, results in increased conflict in the future, and could even cause the elimination of human life, if not all life, from this world. This is no more unmissable the existence of nuclear energy once released to the uninitiated.

The Hopi warn the millions of recalcitrant immigrants throughout the land that their time is limited and that apart from a radical change in their ways, the ending of their reign is destined to be extremely painful, and that the experience does not end with death.

The deepest spiritual tradition of the Hopi reveals that the very essence of human existence is caretaker-ship of this world. Apart from our primordial relationship with the forces that shape us in that role within the grand design, we would have no physical form at all, and no knowledge of our present world. To neglect that role is to invite our own premature and extinction.

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To allow the rule of ignorant force to destroy the world that has been placed in our care would have intolerable consequences beyond death. Since death is not the end of the soul's experience, participation in an economic order that has this effect is but a prelude to a deeper state of victimization.

Certain prophets in the Hopi village of Oraibi recognized the United States of America to be ruled by such a self-destructive system. Beside years of enticement and coercion, these prophets, and the families that respected their spiritual lineage, refused to relinquish their self-determination, or the spiritual covenant upon it is based. Other Hopis were more easily persuaded, and cursed these prophets, evicting them from the village which the ancestors of both had built more than a thousand years earlier.

So it was that in 1906, the Oraibi Spiritual Union, under the leadership of the Fire Clan, went into exile at the place called Hotevilla five miles northwest of Oraibi. There, amidst great hardship inflicted by the United States as well as by the "progressive" Hopi, they built a new village where they plan to remain until the completion of the worldwide Day of Rectification anticipated in their prophecies, after which they are to return to Oraibi. Their aboriginal title to the land from which the buried treasures are being taken by the makers of the modern "sourd of ashes" remains completely uncompromised, but as yet unrecognized by the United States.

News of the atomic explosion at White Sands received by private messengers, followed by reports of the bombing of Hiroshima and Nagasaki, corresponded with symbols in the pattern of world events that guides their actions as caretakers of life, indicating that the time had come for the Hopi to address the world at large, concerning the fate of those who base their security on the use of force. Their prophetic instructions, handed down to them in their ancient oral tradition of higher learning, indicated that they should in their own hands, against the use of the prophesied "sourd full of ashes, capable of boiling the ocean and burning the land," and to urge that the Hopi people not be allowed to abandon what they call the Path of Everlasting Life, for both these actions could literally end life on earth.

The Creator's Lifepan, as it is sometimes called, was carved into a sandstone boulder near Oraibi village shortly before the exile of the Oraibi Spiritual Union. Young Hopi boys were taken there on the way to the corn fields, and told of the two paths of life facing them in the years ahead. The pattern on the rock served as a matrix for a vast array of Hopi traditional thought, but this basic distinction between the two paths was common to every interpretation.

When the time came for the Hopi to address the world, the Creator's Lifepan became the core of a body of Navajo (oral tradition of a legendary, historical and prophetic character) presented by traditional Hopi leaders and spokesmen to the general public as well to public leaders. This collection of tradition from several lineages in several villages, most of it never compared until after the "sourd of ashes" omen, came to be known as The Hopi Message of Peace.

Much of the details of the Lifepan at Prophecy Rock remain private religious knowledge among certain Hopi clans. What is presented here is the part intended for the public, as a guide to the perplexing issues facing the modern

world. But it is forbidden knowledge in the eyes of the so-called Hopi Tribal Council, whose mind in the military-industrial game would be greatly diminished by public knowledge of these truths.

It is of the utmost importance not to overlook the fact that the Hopi Tribal Council, although overwhelmingly rejected by a majority of Hopi, in their traditional manner of abstaining from foreign affairs of which they disapprove (only ten percent even voted in the election to install it in 1936), was urged into operation at the behest of mineral companies who pressured the Department of the Interior. This false front is allowed to exert its voice in the name of the Hopi people through international news media, whereas the traditional leaders are not recognized. The public, and ruling officials in every aspect of American life, are thus deceived.

Moreover, the exponents of the Council frequently go out of their way to dissuade the public from listening to the true titles-holders of Hopi land. It is an uncomfortable issue for those who want to think Hopi uranium, for example, can be honestly purchased. It is more than an issue of fair play or legality. It is an issue of survival, and even "heaven or hell" for all Americans.

The citizens of New Mexico never has a chance to decide whether to choose the installation of the Waste Isolation Pilot Project. Yet they, like taxpayers throughout the land, are forced to pay for it. Democracy was failed. Lincoln was right. And this is just the beginning of the final stages in the disintegration of the American system. Democracy is being demolished in the attempt to protect it through military means.

Therefore, 1) to offset the disadvantaged communication options of the few remaining true titleholders of Hopi land, 2) to offer a guide to the perplexed, and 3) to allow each individual the opportunity to reconsider the consequences of his or her role in the cannibalistic system forced upon the indigenous "bloodlines" of the North American continent, and ultimately all continents, thus to assuage our burdened fate in the light of Hopi Prophecy, The Hopi Lifepan is herewith entered into the record of the hearings on the Supplement to the Environmental Impact Statement for the Waste Isolation Pilot Project.

KEYS TO THE HOPI LIFEPLAN

[1] Masaw, the controller of the fire within the earth, who is the actual owner of the earth according to the Oraibi tradition, holds the reed through which the first people came into this world, from a previous world destroyed through human arrogance. His stature is comparable to Christ for Oraibi. He taught them how to live on the Path of Everlasting Life. The covenant with Masaw is the root of their title to the land, which they (and all humans) merely hold in trust as caretakers. His words, "I am the first and I shall be the last" mark his role in the time of Purification, since he holds the entire affair in his hands.

Masaw is also a trickster. His series of prophecies, most of which have been fulfilled in the modern world, might all be true but the last one. He does not require blind belief, but great intelligence and commitment from whoever would remain in this world.

[2] The circle, which represents the Sun Clan, is situated to the left of Masaw (Fire Clan), as a reminder that they would assume leadership after the fire clan. Yuktum, who led the exile from Oraibi and founded Hotsavilla, is Fire Clan. He was succeeded by Kotsahonye, his Sun Clan son, as acting chief of Hotsavilla.

[3] The equal-armed cross indicated the four directions.

[4] The square is the land to which the first people came.

[5] The Path of Everlasting Life.

[6] The shortlived path of quick prosperity.

[7] The headless figures indicate that the people are cut off from the leaders of this quick prosperity system. It is uncontrollable and thus doomed. This image also refers to a prophecy that in the time of world Purification the heads of the wicked people would be cut off.

[8] The steps to the "throne of riches" which anyone can climb, but which drops off the other side. Also, the "sizzle" path of shortsighted schemes that go awry, only to be remedied with more of the same (each next turn), never returning to reality, but ending in destruction.

[9] The two circles indicate (according to Kotsahonye) the first two of three "shakings of the world" (now interpreted as World Wars I and II) prior to the third and final shaking.

[10] The Day of Purification in which humanity either destroys itself, or purifies itself in time to enter an era of lasting peace, the "Mystery Zap" that hatches as "the whole world shakes and turns red, and turns against the people hindering the Hopi." The stirring of the "bloodlines of the continents," the indigenous nations of the world, to eliminate the rule of ignorant forces thrust upon them through industrial exploitation, which will come to an end.

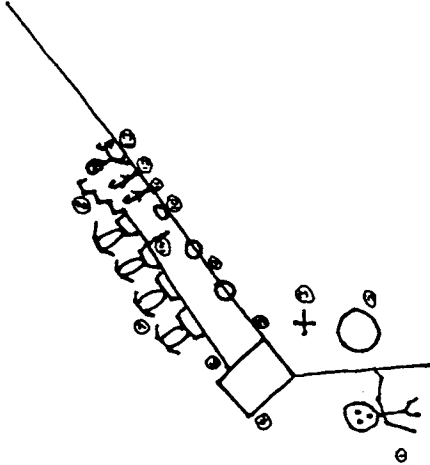
[11] A "faded" cornstalk represents the previous world.

[12] A ripe cornstalk represents the present world.

[13] The farmer with his planting stick, ceremonial corn cobs attached, literally planting the future world on the Path of Everlasting Life. His bent back symbolizes old age, thus longevity, as well as relative powerlessness compared to the headless rulers of the doomed life path, but the ability to outlast their dominance. Unlike the headless giants, his economy is under personal and local control, not subject to the manipulations and whims of an erratic and often vicious market, but promoted by the forces of nature, both seen and unseen.

[14] The attempt of the inhabitants of the path of shortlived wealth to escape and return to the Path of Everlasting Life. Although the goal is in sight, although we may recognize the potential for peace on earth, the return path does not quite reach the Path of Eternal Life. The ultimate in courage, persistence and intelligence is required to escape annihilation, and the hell that follows. Modern man will not find peace until he can cut a true path to reach the keepers of the true title to the land.

The actual number of true followers of the Hopi Way, as a result of forced acculturation, and usurpation of their aboriginal title to the land, is now reduced to a handful, soon to pass away without heirs. Soon they will not be there for the modern world to reach. He intruders will then have no control or refuge as the process of annihilation unfolds, and will die, and continue being the victims of the rule of ignorant force in the realm beyond the grave.





THE HELL BARKNOTE

The chinese are said to believe that hierarchy is everywhere, even in heaven and in hell. As a gesture both serious and humorous, they burn Hell Bank Motes to send cash to the place they presume their relatives have gone, with which to bribe the officials of hell and secure a comfortable position.

The attached Hell Bank Mote is both serious and humorous as well. With the demise of the version of democratic self-government envisioned by the Founders of the United States, there is no hope apart from the recognition of a larger, all-encompassing issue. We destroy human freedom as well as the biosphere, simply because we don't really think this has consequences beyond death. Until the gates of birth and death become transparent, it is pointless to "reason" another person into realizing what lies beyond. Talk on the subject is either brushed aside, or blindly believed, both of which contribute to human disorientation, and so the destruction continues.

If the traditional Hopi are correct in their view that humans exist in order to be caretakers of this world, and we violate that condition, causing the premature and painful end of the human species, what are the consequences beyond that great megadeath? This Hell Bank Mote is just a token by which to remember that question. If you consider it deeply enough, the gates of birth and death will indeed become a little more transparent.

The Hell Bank Mote is enclosed in a copy of The Essence of Hopi Prophecy. Please choose which of these two items you think will serve you best.

Mr. Arthur  
DOE-SEIS Project  
PO Box 5400  
Albuquerque, NM 87115

Dear Mr. Arthur,

I am very concerned about the WIPP project and the validity of the SEIS. I have studied the SEIS since it's release in late April. I have been extensively studying the whole issue of bombs and waste for about the last year.

I am a concerned citizen who feels deeply and thinks realistically, yet hopefully, about the state of the environment and the pollution of our air, water and soil. The WIPP issue concerns me primarily from a health perspective.

As Senator John Glenn has said, "Those who would choose to poison their own people in order to make nuclear weapons should be asked, what are those weapons supposed to protect us from?"

The poisoning of our own people is amply documented in Deadly Defense: Military Radioactive Landfills, GAO/RCED-88-197BB, in The Shadow of The Cloud (excerpt enclosed) and in many other places.

It is time now, to change this situation. It is time now, to stop lying about, denying, withholding, suppressing, and misrepresenting information that concerns the health and safety of people and of our environment. It is time to stop acting as if nothing is wrong. It is time now, to make health and safety your (our) number one priority. If bombs can not be made without poisoning people and the environment then you (we) have no business making them.

It is time now, for this country to reconsider the policy of Flexible Response and First Strike Capability which, if continued with the same lack of concern for health and safety, means the ongoing poisoning of people and the environment, the continued erosion of our economic strength and the failure of our government to win the war against such real social enemies as hunger, malnutrition, disease, homelessness, drug addiction, crime, domestic violence and illiteracy. To quote Senator John Glenn once again, "We cannot afford to risk permanent harm to our citizens and our land in the name of national security."

As you know, there is a huge problem with buried waste. This waste is poisoning people today. This must be dealt with immediately. The \$35-65 billion necessary to do so must be spent as your top priority. Also, the nuclear disaster that happened in the Urals in late '57 or early '59 gives me great cause for alarm regarding the potential for explosion in this buried waste (see excerpt from Nuclear Disaster in the Urals). The Urals disaster also calls into question all of the "water problems at the WIPP site. A site that was supposed to be bone dry forever is leaking. In addition, with a highly

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7.8.5-2

pressurized (2,000 psi) brine pocket (more than 15 million gallons) below the site and the Rustler Aquifer above the site, there is a great potential for a disaster involving water interaction with the waste and a potential explosion as a result.

Next, you (we) must find a way to satisfy and efficiently deal with deadly bomb waste. I suggest a Manhattan Project that brings together top scientists from the world over to discover and implement new ways of neutralizing, isolating, transmuting, and rendering the wastes harmless to people and the environment. Geological disposal is not the answer, unless the right methods (perhaps as done in Iceland) and site(s) are chosen and independently verified to be safe, before any waste is emplaced in them. If safe disposal is not possible, then we have no business generating these wastes. Acceptable risks must be acceptable to all the people exposed to the risks and not just to the DOE. And people must be told the truth about the risks of exposure to radionuclides and hazardous chemicals. I hope that you soon release to the public your full information concerning the health records of all your atomic workers nationwide. I hope that you release whatever information you (and the Canadian Atomic Energy Commission) have on the Pelteau Effect. With a full disclosure of the health consequences to workers, to the public, to the environment (the effect of radiation on Ozone depletion, etc.) we can more truthfully and realistically assess the building of bombs (and the use of nuclear power plants). Do the risks of building nuclear bombs and generating nuclear power, in reality, far outweigh the benefits gained? Will health and safety become the DOE's priorities or will it continue to be building more bombs, no matter what the health and safety costs? How many bombs do we really need? Do bombs really bring us security? Can we stop making them? Can we decommission, bomb(s) for bomb(s) with the Russians until parity is reached at some mutually acceptable level? Can we survive the environmental crisis brought on through our arrogance and greed which has blinded us to the negative consequences of unbridled bomb building and technological advancement with little ecological awareness? We have forgotten that we are a part of, and not the lord over, the "web that has no weaver", the world ecology. We have forgotten God, in our own self, and in all creation. We have lost our living connection to the Earth. We have gotten caught in a "mind-blind" and have forgotten our heart. I hope and pray that we will wake up in time.

Getting on to WIPP, I see WIPP as the DOE's golden opportunity to do the job (of safely disposing bomb waste) right. This means no waste emplacement until the WIPP site can meet the newly promulgated EPA standards. And this must be verified by an independent agency such as the EEG. Also the DOE must fully and openly discuss the effect of the cracks found in WIPP as reported in the NY Times on June 3rd. The information on these cracks was known by the DOE since December, 1987 and yet it was not reported on in the SEIS, the very document that is supposed to assess the safety and workability of the WIPP project. This is one more example of the DOE's hiding vital information that concerns the health and safety of workers and the public at a DOE facility.

1.3  
3.1.2  
3.1.3  
3.1.4  
3.2.1  
3.6-2  
5.2.1  
5.2.2  
7.8.5-1

Additionally, the SEIS is weak in the following areas: discussing the impact of brine seepage into the waste emplacement rooms; the effect of the pressurized brine pocket under the site; supporting documentation for meeting the no migration clause; bounding case scenarios which do not represent maximum credible accidents at the site or during transportation (creating an order of magnitude error low by 2-5 powers of ten); no inclusion of human error in any of it's accident scenarios (creating an order of magnitude error low by 3-5 powers of ten); process flaws, such as illegal segmentation in not analyzing the total impact of the WIPP project in a combined, overall fashion; unsupported assumptions concerning the action of operators during accidents; unsupported assumptions concerning the WIPP's ability to safely isolate waste from the accessible environment for 10,000 years; not considering the Pelteau Effect in health risk assessment of radionuclide exposure in BEIR III modeling or through the use of ICRP standards (creating an order of magnitude error low by 1-3 powers of ten); the lack of a thorough analysis of alternatives; selecting a proposed action with more negative health and environmental impacts without thoroughly suggesting mitigation measures; heavy reliance on key documents that are only in draft form, such as FSAR, WAC and the Test Plan; the TRUPACT-II is not yet certified; the use of 100% truck when train transport is safer; the use of RADTRAN modeling which uses excessive averaging and fraction multiplication to mask the actual consequences of an accident; the failure to address the negative socioeconomic impact of transport on northern NM, regardless of whether there is a spill or not; the failure to analyze the negative consequences of a "crust" accident; analysis of RH-TRU waste transportation health risks without even having the transport container built; there is no independent oversight or monitoring of DOE's satellite tracking system. DOE has a long history of secrecy and cover up of accidents; DOE has failed to show how they intend to comply with RCRA transportation and disposal standards; WIPP does not address the main problem of "nonremovable" buried waste. This is the waste that is poisoning people and the environment right now.

I could go on, but I think you get the point. There are many problems with the SEIS and with WIPP. These problems must be resolved, prior to the emplacement of any waste at WIPP, otherwise, in a short time (relative to the 10,000 year requirement) we will have another polluted DOE facility. Also, for the first time, the WIPP entails a significant nuclear gamble of the highways of 23 states. Lets take our time here. With the 20-30 years that the waste designated for WIPP can safely remain where it is, let's look for safer alternatives to the nuclear waste problem. And in the meantime, let's do something for the workers and the public exposed to polluted soils and groundwater at Hanford, SRP, FMPC, RFP, INEL, Mound, LLL, and at the Y-12 Plant.

References Enclosed:

1. Doady, Dafanas, Military Radioactive Landfills
2. Nuclear Health and Safety, GAORCED-88-197BR

2.3.1-2  
7.8.2-1  
7.8.5-2

- 3. The Other Westinghouse: Weapons and Waste
- 4. Excerpt from In the Shadow of the Cloud
- 5. Excerpt from Nuclear Disaster in the Urals
- 6. Concerned Citizens For Nuclear Safety -- written testimony submitted for the hearing in Santa Fe
- 7. The Petkau Effect -- written testimony compiled by Public Data Access
- 8. Document A, Information from Bernd, Gideon and Margen concerning health risks, permissible doses, etc.

Thank You for this opportunity for public input. You (and we) have a difficult road ahead. If we can cooperate for the good of all, we will succeed.

In Health and Safety,

*Dr. R. C. Mand*

Dr. Robert Chamberlain Merck, B.S., N.D.  
Wholeistic Foundation of Santa Fe



*Submitted by Dr Mand  
Reference # 3*

# The Other Westinghouse: Weapons and Waste

Jonathan Pressler  
and The River City Nonviolent Resistance Campaign



Reference # 4 Submitted by Dr. Manick

# SHADOW OF THE CLOUD

Photographs and filmstrips of American atomic bombing in Japan

**B**etween 1945 and 1946, an estimated 225,000 U.S. servicemen were exposed to nuclear weapons testing during military operations in Japan. Approximately 250 of these were American atmospheric nuclear weapons tests. The United States and the Soviet Union stopped surface testing in 1952 due to international pressure, but underground testing continues.

Under estimates 115,000 military personnel were assigned to Hiroshima and Nagasaki and were exposed to the aftermath of the atomic bombing used at the end of World War II. Still other servicemen were POWs in Japan in the Hiroshima area and witnessed the U.S. use of the atom bomb in war time.

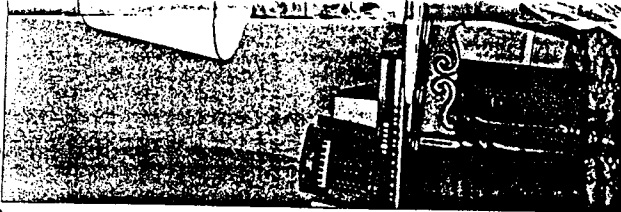
Old photos and films show military personnel in the Nevada desert test sites waiting toward the mushroom clouds, through dust and debris, with no protection other than a rifle and a helmet. These men witnessed test series such as Ranger, Buster-Jangle, and Tumbler-Snapper. Other servicemen spent their four of duty on ships or stationed on bases or near irradiated lagoons in the Pacific. They were ordered to set up or to the beaches to watch the tests, such as Shero Able and Baker at Operation Crossroads, Shero Wigwag, and the 17-hat Big Wing series. They slept on the ship decks, exposed to the atmosphere

TEXT AND PHOTOS BY JIM LEKAGER

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IN EAST WEST HIST. NEWS

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### MALE AND DOUGS BEHAR, SON DOUG

They participated in Operation Crossroads, Shero Able, on an 18-year-old Navy boiler fitter, connecting unit under "Shero" Baker, during, and after tests Able and Baker. Baker was the only one to survive the impact from which under for the boiler was driven. Baker was the only one to survive the impact from which under for the boiler was driven. Baker was the only one to survive the impact from which under for the boiler was driven.

"I don't recall feeling ill when I was in the service, but I've been ill ever since I was diagnosed. I've had a lot of pain over the years and I just look it. I've suffered terribly."

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reference # 5 Sketched by Dr. Hand

NUCLEAR DISASTER IN THE URALS

This information comes from a book of the same title by Zhenes A. Meckveder published in 1979 by W.W. Norton & Company.

A large reactor for the production of plutonium was put in operation in the Chelyabinsk region of the southern Ural mountains in 1947. An explosion of nuclear waste stored underground occurred sometime between late 1957 to early 1958. According to the CIA, a nuclear accident had indeed occurred in the Uralis in 1958, but unnamed CIA experts claimed it was a reactor accident.

Dr. Meckveder reports that the heat of the buried wastes turned groundwater into steam, producing an explosion powerful enough to contaminate hundreds of square miles. The explosion released millions of curies of radiation and exposed a heavily populated industrial region to severe radiation.

The US had two dangerous situations developing at the Hanford Reservation which are somewhat analogous to the Uralis disaster. The first accident is known as the Tank 106-T leak, in which 435,000 liters of concentrated liquid waste escaped from a storage tank. This leak was noticed in June of 1973. The leaked waste contained 40,000 curies of cesium-137, 14,000 curies of americium-241, and 4 curies of plutonium, as well as a small quantity of other isotopes. Further investigation revealed that other tanks had also leaked no less than 500,000 curies of radioactive waste into the soil under the tanks.

If such a leak had occurred in an area where the water table was closer to the surface (at the Hanford site, the water table is 200 feet below the tanks), the ground water would have quickly spread the contamination to a vast area.

The second near-disaster seems to be very similar to the Uralis explosion. This occurred not in the tanks with highly active liquid waste, but in one of the trenches where the less active waste was stored. The volume of low-level waste was much greater, and it would have been very costly and required very large tanks to store the perhaps one billion liters of this liquid. Therefore a cheaper, simpler means of storage was worked out. It was simply allowed to soak into the dry earth that constituted the floor of the trench. Since the water table was so deep, it was felt that the ground would provide sufficiently stable and permanent storage for all the radioactivity. However processes taking place in the ground over a period of many years created an unsuspected situation in one of the large trenches. The plutonium in the wastes was oxidized and slowly seeped into the soil. Over a period of many years approximately 100 kilograms of plutonium accumulated not far below the dirt floor of trench Z-9. This was a quantity sufficient to produce nearly a hundred small-size atom bombs each with a destructive force equal to the bombs dropped on Japan in 1945. The volume of soil containing plutonium at trench Z-9 was approximately 1,800 cubic feet.

According to the WASH-1520 report, a chain reaction could have been set off if water had soaked into the plutonium-rich soil. The rapid heating of the water could turn it to steam and the pressure of the steam could produce an explosion, discharging the radioactive soil to the surface in a "mud-volcano type explosion."

Thus, what was only a remote possibility in one case could have become a reality in the other. There is more snow in the Chelyabinsk region than at Hanford, and the water table is closer to the surface. The danger inherent in the use of nuclear energy has been with us now for decades and, in spite of many popular efforts to curtail its spread, governments persist in expansion programs for its use while telling their people that little or no threat exists. The radiation leakage at Three Mile Island is one of the most recent examples of this potential for disaster. Even as massive amounts of radiation were being released into the surrounding atmosphere, people were told it was a "controlled leak" and that there was little danger. At that same time, a spokesman for the Soviet Union declared that the possibility of such a disaster has never existed in his country because of their superior precautions. Then we had Chernobyl. The governments of both superpowers have been caught in their own disclaimers more than once.

#6  
SEE WRITTEN  
TESTIMONY  
Submitted by  
CCNS

# GUEST EDITORIAL Submitted by Dr. M. M. THE PETRAU EFFECT Reference # 7

Jay M. Gould  
Ernest J. Sternglass

## Low-level radiation and mortality

The Chernobyl accident was the largest disaster ever caused by humans. Within a few weeks, the atmosphere (nuclear) fission products equal to about a tenth of the amount released by all bomb tests since 1945. Low-level radiation from the Chernobyl accident arrived in the United States by about May 9, 1986. An increase in infant mortality was observed almost immediately (1). Deaths of 80,000 to 40,000 are estimated to have occurred in the four summer months of 1986 according to evidence drawn from many disciplines: bacteriology, medicine, radiation physics, statistics, epidemiology, and even astrology.

There is a strong correlation between the number of deaths and the health effects of radiation. The correlation is found in many parts of Europe, chilling stories of the effects of high radiation levels from Chernobyl, accompanied by uncorroborated evidence of human and animal malnutrition; but no firm statistical data on human mortality or infant mortality. The only data on human mortality or infant mortality had reached the United States to produce desirable effects on health. We found that there was, indeed, a 5.5% increase in mortality in the United States in May 1986 over May 1985. The increase of 100% since 1984, has a probability of less than 1 out of 100,000 of occurring by chance.

For each station we had assembled, from official sources, comprehensive data based on radiation and mortality. These permit the quantification of deaths associated with low-level radioactivity at specific times and places from the very best possible sources. The data have been analyzed in a way that shows that the increase in radioactivity from these of other, more slowly varying,

environmental and socioeconomic features. The increase in infant mortality is also associated with milk-moistening stations in each state (2). The concentration of 1:131, which has a short half-life, peaked in mid-May. Other radioactive isotopes like cesium-137, strontium-90, americium-241, and barium-140 were also present.

Changes in infant mortality rates in the South Atlantic states to June and July of 1986 over the corresponding months of 1985 were recorded (Figure 2). There were also significant declines in the number of live births in the 10 leading regions of the United States in the period May 1985 to May 1986 for the total number of deaths as well as for two selected age groups and for those selected causes of death. All of these increases are statistically significant, at least at the 0.001 level. The figure also shows that such increases were observed in the United States and in the United Kingdom (increasing deaths by May 1985 and May 1986).

Statistical significance tests were based on the provisional 1005 samples of all death certificates analyzed in detail by age and cause of death by the U.S. National Center for Health Statistics (NCHS) for the four-month period May-August 1986. The least NCHS estimate of the number of deaths in those months is 677,500, a 5.7% gain over 1985, which because of the large number involved is statistically significant ( $P < 0.001$ ). Although the number of deaths in the United States in May 1986 was also a statistically significant decline in the number of

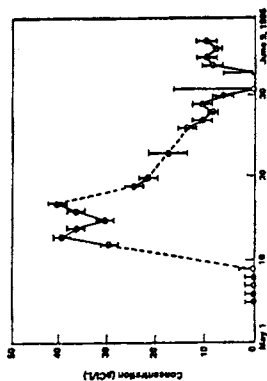


Figure 1. Concentration of I-131 in fresh farm milk, May-June 1986 in the New York metropolitan area. Data from the Environmental Measurements Laboratory of the Department of Energy.

Figure 2. Change in infant mortality in the South Atlantic states in 1986 relative to 1985

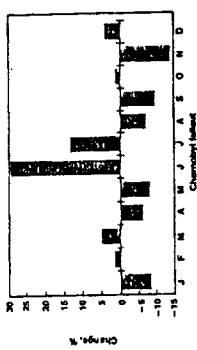


Figure 3. Changes in mortality rates, May 1986 over May of corresponding years, 1984 and May 1985

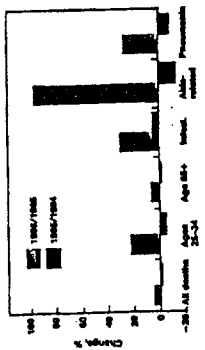
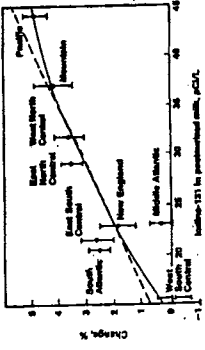


Figure 4. Regional percent change in mortality rates, May 1986 over May of corresponding years, 1984, (Source: EPA and NCHS)



live births in June of 1986 and a sharp increase of 8% in the national infant mortality rate. By September of 1986, most of the immediate mortality effects appeared to have dissipated.

In Figure 4 we show the percentage change in the total mortality rate for the four U.S. regions of the United States for May-August 1986 compared with May-August 1985, vs. the values of the 1:131 levels in pasteurized milk as reported by EPA. The points shown represent the population-weighted averages of the peak concentrations of 1:131 in May and June of 1986 in each state and region. The derived line is a linear fit to the data and the solid line is the logarithmic fit that best represents the trend of the data. The error bars represent highly standard deviations. The regression coefficients are highly significant. The regression coefficients are 0.87 ( $P < 0.001$ ) for the West South Central, which increases to 0.94 if the Middle Atlantic division is omitted.

For the United States as a whole, the largest monthly increase in the infant mortality rate (IMR) came in June 1986 with an 8.2% increase over July 1985. The largest Middle Atlantic region, which comprises New York, New







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December, 1966 CEP Publication N96 - 12

## Public Health

# Nuclear Emissions Take Their Toll

By Jay M. Gould with Brian Jacobs, Celia Chien and Steven Cai

**C**hernobyl has raised the universal question of what is the true impact on public health of nuclear emissions. This newsletter, the fifth in a series of reports and analyses by the Council on Economic Priorities on the geographic distribution of nuclear emissions in the US, is the first of the evidence linking nuclear emissions in the US to increases in mortality rates.

A state is often too crude a geographic unit for the measurement of environmental dangers since these dangers are generally local and seldom impact to the same degree on all or most localities in a state. As a preliminary effort, however, statewide and county variations in total (total and cancer mortality rates can be compared to appraise current regional variations in public health.

### Economy Determines Mortality

The advance of any modern industrial society can be traced in terms of the geographic distribution of its mortality rates over time and the consequent increase in the gravity of its population. This is true of the US over the past two hundred years or more, and certainly so in the 20th Century when the official mortality statistics became representative of the total population. The US total mortality rate stood at 172 deaths per 1,000 persons in 1900 and declined at an average annual rate of one percent to stand at 87 deaths per 1,000 persons in 1964. The annual decline in mortality rates can be compared to the population age structure over time. Thus the mortality rate, when adjusted for differ-

### The Calculation of Excess Mortality

ences in population structure, has been generally declining in the US since 1900. The excess mortality rate is calculated as the difference between the actual mortality rate and the expected mortality rate. The expected mortality rate is based on the mortality rate of the general population in the same geographic area in the same year. The excess mortality rate is calculated as the difference between the actual mortality rate and the expected mortality rate. The excess mortality rate is calculated as the difference between the actual mortality rate and the expected mortality rate.

The British Atomic Energy Commission has been extremely negligent about public health and has not taken any steps to protect the public from the radiation hazards of its nuclear reactors. The Atomic Energy Commission has been extremely negligent about public health and has not taken any steps to protect the public from the radiation hazards of its nuclear reactors. The Atomic Energy Commission has been extremely negligent about public health and has not taken any steps to protect the public from the radiation hazards of its nuclear reactors.

Council on Economic Priorities, 38 Irving Place, New York, NY 10003 (212) 476-1113

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**Cancer Rates Steadily Increasing**

As the overall US mortality rate reflects the gradual aging of Americans, the cancer rate has been increasing steadily since 1950. The cancer rate is increasing even after adjusting for age and now accounts for about 22 percent of all deaths.

These mortality rates, used to evaluate the health of the population, are closely interrelated. Historically, the decline of the average annual four percent death rate has been accompanied by an increase in the average annual four percent cancer rate. This is true for the entire US and for all states. The increase in the cancer rate has also contributed greatly to the overall increase in the average annual four percent death rate.

**Infant Mortality Limited To Nil**

Of the three mortality rates, the DMR is by far the most sensitive to both economic and environmental changes. It is the only mortality rate that has declined in the past 20 years. The DMR has declined from 100 in 1900 to 10 in 1964, a 90 percent decline. This is a remarkable achievement, especially in view of the fact that the DMR has declined in all states and in all major cities.

TABLE 1: INFANT MORTALITY RATES IN THE US, 1915-1979

Year	Av. # Deaths per 1,000 Births	Annual % Rate of Change
	All Babies	All Babies
1915-1919	14.4	-4.9
1920-1924	14.4	-4.2
1925-1929	13.5	-3.7
1930-1934	12.5	-4.2
1935-1939	11.5	-3.3
1940-1944	10.5	-3.6
1945-1949	9.5	-4.2
1950-1954	8.5	-3.9
1955-1959	7.5	-3.6
1960-1964	6.5	-3.2
1965-1969	5.5	-2.7
1970-1974	4.5	-1.8
1975-1979	3.5	-1.3

Source: Vital Statistics of the U.S., 1980, Vol. 1, Summary, Part 4, Section 2, Infant Mortality, page 1.

ing out of the long secular decline in the average annual DMR that occurred in the 1950s and 1960s.

When the DMR was first shown to exhibit a long secular decline, it was assumed that nuclear changes in the late 1940s, following the atomic bombing of Hiroshima, had caused the decline. This assumption was called into question after the ban on atmospheric bombing after the war and the development of the average annual four percent death rate. The DMR has declined in all states and in all major cities.

The DMR has declined in all states and in all major cities. This is a remarkable achievement, especially in view of the fact that the DMR has declined in all states and in all major cities. The DMR has declined in all states and in all major cities.

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This newsletter investigates the status of...

The average annual mortality rates have been calculated in both time periods for these two groups of states. The results are summarized in Tables 3 and 4. The tables suggest that emissions from nuclear reactors have had a statistically significant adverse impact on mortality rates in the 1975-1982 period, where such emissions reached high levels.

According to Table 3, which summarizes the rates in the nuclear and non-nuclear states, the infant mortality rate in the nuclear states was 22.2 per thousand births in the 1965-69 period, compared to 22.5 in the non-nuclear states. The difference is statistically significant (p < 0.05). In the 1975-82 period, however, the infant mortality rate in the nuclear states was 22.2 per thousand births, but related somewhat more to the later period of the study (0.89 percent, as against 0.83 percent for the nuclear states).

While these differences appear small, in Table 4 they translate into distributions of infant mortality rates by state. The calculations yields when the observed deaths would have been in the nuclear states if they had had the same percentage change in mortality rates as occurred by the nuclear states.

As a percentage of the actual difference arrived at between the two groups of states with respect to cancer mortality, while the cancer mortality rate in the nuclear states was somewhat below that of the non-nuclear states in the 1975-82 period, at first glance, this appears surprising because we would expect at least a five-year lag of cancer mortality from the year of exposure, suggesting that the cancer mortality rate in the nuclear states in the 1975-82 period should be higher than in the non-nuclear states. The observed cancer rates in the late seventies may reflect the much higher baseline and yet unexplained emissions levels from military reactors. They may also reflect the fact that the 1970-74 years, indeed the impact on public health of military reactor emissions deserves separate study (see from page one book).

Because the infant mortality rate is a cumulative volume of emissions may be higher than that of civilian reactors. However, so much is not known about the treatment and disposal of the huge stockpiles of military waste, we must

reported by Brookhaven and cannot be assumed to have reached peak levels in the late seventies as in the case of civilian power reactors. Again, Brookhaven does not report on emissions from the reactors in the 1975-82 period, but states that they have had a small but statistically significant adverse impact on mortality rates in the 1975-1982 period, where such emissions reached high levels.

The year 1965-69 was chosen as the base period because it was the first time that nuclear reactors were in operation in the United States. Both Nevada and Utah, which have no nuclear reactors, were included in our non-nuclear states. Some residents of both Nevada and Utah are employed at nuclear reactors in the Nevada desert. These men continued without interruption after the atmospheric test ban in 1963. In fact, these men are the only group of people in the United States who are employed at nuclear reactors in the Nevada desert. These men continued without interruption after the atmospheric test ban in 1963. In fact, these men are the only group of people in the United States who are employed at nuclear reactors in the Nevada desert.

While these differences appear small, in Table 4 they translate into distributions of infant mortality rates by state. The calculations yields when the observed deaths would have been in the nuclear states if they had had the same percentage change in mortality rates as occurred by the nuclear states.

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TABLE 3: SUMMARY OF CHANGES IN US, NUCLEAR AND NON-NUCLEAR STATES

1965-69	US		NUCLEAR STATES		NON-NUCLEAR STATES	
	401995	310289	401995	310289	401995	310289
Total # Infant Deaths	112512	112512	112512	112512	112512	112512
Total # Live Births	22,510	22,180	22,510	22,180	22,510	22,180
Average Annual Infant Mortality Rate (Deaths Per 1000 Live Births)	831192	747666	831192	747666	831192	747666
Average Annual Population	196644	153742	196644	153742	196644	153742
Average Annual Mortality Rate	936.11	936.11	936.11	936.11	936.11	936.11
Total # Cancer Deaths	1549534	1256009	1549534	1256009	1549534	1256009
Average Annual Cancer Rate (Deaths Per 100,000)	157.44	161.40	157.44	161.40	157.44	161.40

TABLE 2: AVERAGE ANNUAL MORTALITY RATES, 1965-69 AND 1975-82, BY STATE AND REGION

STATE	1965-69	1975-82	% CHG	1965-69	1975-82	% CHG
ALABAMA	22.5	22.2	-1.3	157.4	157.4	0.0
ALASKA	22.5	22.2	-1.3	157.4	157.4	0.0
ARIZONA	22.5	22.2	-1.3	157.4	157.4	0.0
ARKANSAS	22.5	22.2	-1.3	157.4	157.4	0.0
CALIFORNIA	22.5	22.2	-1.3	157.4	157.4	0.0
COLORADO	22.5	22.2	-1.3	157.4	157.4	0.0
CONNECTICUT	22.5	22.2	-1.3	157.4	157.4	0.0
DELAWARE	22.5	22.2	-1.3	157.4	157.4	0.0
FLORIDA	22.5	22.2	-1.3	157.4	157.4	0.0
GEORGIA	22.5	22.2	-1.3	157.4	157.4	0.0
IDAHO	22.5	22.2	-1.3	157.4	157.4	0.0
ILLINOIS	22.5	22.2	-1.3	157.4	157.4	0.0
INDIANA	22.5	22.2	-1.3	157.4	157.4	0.0
IOWA	22.5	22.2	-1.3	157.4	157.4	0.0
KANSAS	22.5	22.2	-1.3	157.4	157.4	0.0
KENTUCKY	22.5	22.2	-1.3	157.4	157.4	0.0
Louisiana	22.5	22.2	-1.3	157.4	157.4	0.0
Maine	22.5	22.2	-1.3	157.4	157.4	0.0
Maryland	22.5	22.2	-1.3	157.4	157.4	0.0
Massachusetts	22.5	22.2	-1.3	157.4	157.4	0.0
Michigan	22.5	22.2	-1.3	157.4	157.4	0.0
Minnesota	22.5	22.2	-1.3	157.4	157.4	0.0
Mississippi	22.5	22.2	-1.3	157.4	157.4	0.0
Missouri	22.5	22.2	-1.3	157.4	157.4	0.0
Montana	22.5	22.2	-1.3	157.4	157.4	0.0
Nebraska	22.5	22.2	-1.3	157.4	157.4	0.0
Nevada	22.5	22.2	-1.3	157.4	157.4	0.0
New Hampshire	22.5	22.2	-1.3	157.4	157.4	0.0
New Jersey	22.5	22.2	-1.3	157.4	157.4	0.0
New Mexico	22.5	22.2	-1.3	157.4	157.4	0.0
New York	22.5	22.2	-1.3	157.4	157.4	0.0
North Carolina	22.5	22.2	-1.3	157.4	157.4	0.0
North Dakota	22.5	22.2	-1.3	157.4	157.4	0.0
Ohio	22.5	22.2	-1.3	157.4	157.4	0.0
Oklahoma	22.5	22.2	-1.3	157.4	157.4	0.0
Oregon	22.5	22.2	-1.3	157.4	157.4	0.0
Pennsylvania	22.5	22.2	-1.3	157.4	157.4	0.0
Rhode Island	22.5	22.2	-1.3	157.4	157.4	0.0
South Carolina	22.5	22.2	-1.3	157.4	157.4	0.0
South Dakota	22.5	22.2	-1.3	157.4	157.4	0.0
Tennessee	22.5	22.2	-1.3	157.4	157.4	0.0
Texas	22.5	22.2	-1.3	157.4	157.4	0.0
Utah	22.5	22.2	-1.3	157.4	157.4	0.0
Vermont	22.5	22.2	-1.3	157.4	157.4	0.0
Virginia	22.5	22.2	-1.3	157.4	157.4	0.0
Washington	22.5	22.2	-1.3	157.4	157.4	0.0
West Virginia	22.5	22.2	-1.3	157.4	157.4	0.0
Wisconsin	22.5	22.2	-1.3	157.4	157.4	0.0
Wyoming	22.5	22.2	-1.3	157.4	157.4	0.0
USA	22.5	22.2	-1.3	157.4	157.4	0.0

TABLE 4: CALCULATION OF ANNUAL EXCESS MORTALITY IN NUCLEAR STATES 1975-82

1945-49	1950-54	1955-59	1960-64	1965-69	1970-74	1975-82
Annual IAR (Deaths per 1000 Live Births)	21.14	23.70	25.18	27.58	31.44	33.44
Average Annual Mortality Rate (Deaths per 100,000)	94.86	916.60	94.09	931.45	916.10	931.45
Annual IAR (Deaths per 100,000)	161.40	142.44	161.40	142.44	161.40	142.44
Average Annual IAR (Deaths per 100,000)	13.44	13.44	13.44	13.44	13.44	13.44
Annual IAR (Deaths per 100,000)	181.45	160.10	181.45	160.10	181.45	160.10
Annual IAR (Deaths per 100,000)	3183	3183	3183	3183	3183	3183
Annual IAR (Deaths per 100,000)	411468	411468	411468	411468	411468	411468
Annual IAR (Deaths per 100,000)	49133	49133	49133	49133	49133	49133
Annual IAR (Deaths per 100,000)	3114	3114	3114	3114	3114	3114
Annual IAR (Deaths per 100,000)	1510780	1510780	1510780	1510780	1510780	1510780
Annual IAR (Deaths per 100,000)	2115	2115	2115	2115	2115	2115
Annual IAR (Deaths per 100,000)	4532	4532	4532	4532	4532	4532

In this table we have calculated the "excess" mortality in nuclear states as the difference between the actual mortality rate and the expected mortality rate. The expected mortality rate is calculated by the ratio of the actual mortality rate to the average mortality rate of the nuclear states. The actual mortality rate is calculated by the ratio of the actual mortality rate to the average mortality rate of the nuclear states. The expected mortality rate is calculated by the ratio of the actual mortality rate to the average mortality rate of the nuclear states.

Year	Actual Mortality Rate	Expected Mortality Rate	Excess Mortality Rate
1945-49	21.14	13.44	7.70
1950-54	23.70	13.44	10.26
1955-59	25.18	13.44	11.74
1960-64	27.58	13.44	14.14
1965-69	31.44	13.44	18.00
1975-82	33.44	13.44	20.00

We do not have emissions data as yet for military reactors, which, in any case, should be included in the calculations. We can, however, attempt to do a preliminary calculation for the civilian reactors. We can, however, attempt to do a preliminary calculation for the civilian reactors.

examined that the associated public health problem may be of the same order of magnitude as those of the civilian reactors.

What do these results signify? First, the small differences between the mortality changes of the two groups of states are not statistically significant. The other two can be seen to be the result of different nuclear emissions density? There is no clearly defined mortality gradient in Table 2 among each of the so-called nuclear states to have been observed. This becomes evident by considering the ratio of change for each state for the three different mortality rates shown in Table 2. It can be said that a state that is more than the nation if the ratio is greater than 1.0, and the ratio was less than that of the nation or if greater than that of the nation. Thus, the 30 nuclear states have 90 opportunities to be more than the nation and 90 opportunities to be less than the nation. (As examples, the mortality rate of Connecticut performed worse than the nation with respect to all three mortality rates, and Vermont better on all three.)

But the non/nuclear states can be seen to do better than the nation in only 54 percent of all cases, and the nuclear states do better in about 31 percent of all cases. How can these apparently contradictory results be reconciled with the results of Tables 3 and 4? Can it be that the nuclear states have a mortality rate between the two groups of states shown by Table 3 reflect other than nuclear emissions? There is a simple explanation of this paradox.

There are a total of about 90 civilian states in the United States. The effect of these states on the mortality rates of the nation will be primarily found in residents of those relatively few countries of those relatively few countries.

in addition to the country in which the reactor is located, an average of two or three countries lying within 25 or 30 miles from the reactor. Those adjacent countries lying to the north and east are favored in accordance with the prevailing wind direction in the US. For example, nuclear reactors in the US probably determined the state.

Some 175 countries have been chosen as a first step to defining a nuclear country, one that would be more directly comparable to the nuclear country. These include, in particular, the countries that are most likely to be affected by the nuclear emissions.

TABLE 5: NUCLEAR COUNTRIES: SUMMARY OF CHANGES IN PUBLIC HEALTH MEASURES, 1945-49 AND 1975-82

1945-49	NUCLEAR COUNTRIES		NON-NUCLEAR COUNTRIES		TOTALS
	NUCLEAR COUNTRIES	NON-NUCLEAR COUNTRIES	NUCLEAR COUNTRIES	NON-NUCLEAR COUNTRIES	
Number of families	71	114	175	790	310
Number of Births	129248	148004	277252	1329895	1707147
Number of Infant Deaths	2115	2115	2115	2115	2115
Number of Fetal Deaths	14.5	14.5	14.5	14.5	14.5
Number of Infant Deaths per 1000 Births	16.3	16.3	16.3	16.3	16.3
Number of Fetal Deaths per 1000 Births	10.8	10.8	10.8	10.8	10.8
Number of Infant Deaths per 1000 Births	16.3	16.3	16.3	16.3	16.3
Number of Fetal Deaths per 1000 Births	10.8	10.8	10.8	10.8	10.8
Number of Infant Deaths per 1000 Births	16.3	16.3	16.3	16.3	16.3
Number of Fetal Deaths per 1000 Births	10.8	10.8	10.8	10.8	10.8
Number of Infant Deaths per 1000 Births	16.3	16.3	16.3	16.3	16.3
Number of Fetal Deaths per 1000 Births	10.8	10.8	10.8	10.8	10.8
Number of Infant Deaths per 1000 Births	16.3	16.3	16.3	16.3	16.3
Number of Fetal Deaths per 1000 Births	10.8	10.8	10.8	10.8	10.8
Number of Infant Deaths per 1000 Births	16.3	16.3	16.3	16.3	16.3
Number of Fetal Deaths per 1000 Births	10.8	10.8	10.8	10.8	10.8
Number of Infant Deaths per 1000 Births	16.3	16.3	16.3	16.3	16.3
Number of Fetal Deaths per 1000 Births	10.8	10.8	10.8	10.8	10.8
Number of Infant Deaths per 1000 Births	16.3	16.3	16.3	16.3	16.3
Number of Fetal Deaths per 1000 Births	10.8	10.8	10.8	10.8	10.8
Number of Infant Deaths per 1000 Births	16.3	16.3	16.3	16.3	16.3
Number of Fetal Deaths per 1000 Births	10.8	10.8	10.8	10.8	10.8
Number of Infant Deaths per 1000 Births	16.3	16.3	16.3	16.3	16.3
Number of Fetal Deaths per 1000 Births	10.8	10.8	10.8	10.8	10.8
Number of Infant Deaths per 1000 Births	16.3	16.3	16.3	16.3	16.3
Number of Fetal Deaths per 1000 Births	10.8	10.8	10.8	10.8	10.8
Number of Infant Deaths per 1000 Births	16.3	16.3	16.3	16.3	16.3
Number of Fetal Deaths per 1000 Births	10.8	10.8	10.8	10.8	10.8
Number of Infant Deaths per 1000 Births	16.3	16.3	16.3	16.3	16.3
Number of Fetal Deaths per 1000 Births	10.8	10.8	10.8	10.8	10.8
Number of Infant Deaths per 1000 Births	16.3	16.3	16.3	16.3	16.3
Number of Fetal Deaths per 1000 Births	10.8	10.8	10.8	10.8	10.8
Number of Infant Deaths per 1000 Births	16.3	16.3	16.3	16.3	16.3
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Number of Infant Deaths per 1000 Births	16.3	16.3	16.3	16.3	16.3
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Number of Infant Deaths per 1000 Births	16.3	16.3	16.3	16.3	16.3
Number of Fetal Deaths per 1000 Births	10.8	10.8	10.8	10.8	10.8
Number of Infant Deaths per 1000 Births	16.3	16.3	16.3	16.3	16.3
Number of Fetal Deaths per 1000 Births	10.8	10.8	10.8	10.8	10.8
Number of Infant Deaths per 1000 Births	16.3	16.3	16.3	16.3	16.3
Number of Fetal Deaths per 1000 Births	10.8	10.8	10.8	10.8	10.8
Number of Infant Deaths per 1000 Births	16.3	16.3	16.3	16.3	16.3
Number of Fetal Deaths per 1000 Births	10.8	10.8	10.8	10.8	10.8
Number of Infant Deaths per 1000 Births	16.3	16.3	16.3	16.3	16.3
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Number of Fetal Deaths per 1000 Births	10.8	10.8	10.8	10.8	10.8
Number of Infant Deaths per 1000 Births	16.3	16.3	16.3	16.3	16.3
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Number of Infant Deaths per 1000 Births	16.3	16.3	16.3	16.3	16.3
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Number of Fetal Deaths per 1000 Births	10.8	10.8	10.8	10.8	10.8
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Number of Fetal Deaths per 1000 Births	10.8	10.8	10.8	10.8	10.8
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Number of Fetal Deaths per 1000 Births	10.8	10.8	10.8	10.8	10.8
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Number of Fetal Deaths per 1000 Births	10.8	10.8	10.8	10.8	10.8
Number of Infant Deaths per 1000 Births	16.3	16.3	16.3	16.3	16.3
Number of Fetal Deaths per 1000 Births	10.8	10.8	10.8	10.8	10.8
Number of Infant Deaths per 1000 Births	16.3	16.3	16.3	16.3	16.3
Number of Fetal Deaths per 1000 Births	10.8	10.8	10.8	10.8	10.8
Number of Infant Deaths per 1000 Births	16.3	16.3	16.3	16.3	16.3
Number of Fetal Deaths per 1000 Births	10.8	10.8	10.8	10.8	10.8
Number of Infant Deaths per 1000 Births	16.3	16.3	16.3	16.3</	

TABLE 6: THE STATISTICAL SIGNIFICANCE OF CHANGING MORTALITY RATES

Table with 5 columns: IHR, FMR, TMR, CMR. Rows include Mortality Rate, Nuclear Counties, Ratio of Change in Mortality Rate, Observed Mortality Rate, Standard Deviation of the Difference, and Chance Probability.

In this table, we are testing the differences between a mortality rate expected in the nuclear counties... The null hypothesis is that the mortality rate in the nuclear counties is the same as the mortality rate in the non-nuclear counties.

A more detailed, properly formatted study would, of course, try to account for the differences in the number of deaths involved... The null hypothesis is that the mortality rate in the nuclear counties is the same as the mortality rate in the non-nuclear counties.

TABLE 7: REACTORS AND LOCATIONS

Table with 5 columns: REACTOR, IHR, FMR, TMR, CMR. Lists various reactors such as Big Rock Point, Fort St. Vrain, Beaver Creek, etc., with their corresponding mortality and frequency rates.

Continues close to next than see reactor.



with Westinghouse in the US. He estimated that 400,000 infants had died because of the testing. The AEC asked scientists at the LLL to review Sternglass's charge, hoping that they would discover the estimate. Dr. Arthur Tamplin did reduce the estimate of infant deaths (on page) to 4,000. His department Chairperson, Dr. John Goffman, defended Tamplin against the AEC which found the number still too high for its public image.

Dr. Sternglass contended to Dr. Bernel that even though Westinghouse was (and still is) in the nuclear reactor business at the time, he was not presumed as an expert on nuclear weapons testing. On the other hand, Drs. Tamplin and Goffman eventually were forced out of LLL, apparently for their refusal to change their estimates of infant deaths due to the weapons testing. Dr. Goffman has recently declared (1983) that he thinks now that Dr. Sternglass's number, 400,000 infant deaths, was more nearly correct than Tamplin's lower estimate.

The Governor of Utah has filed a suit against the US government for the excess cancer deaths in Utah. Nearly 1,200 individual lawsuits have also been filed. These suits are primarily for cancer deaths. Many other human tragedies such as miscarriages, abortions, thyroid dysfunction, aplastic anemia and hormonal diseases related to radioactive pollution of the living space have yet to be recognized and documented, much less brought to litigation. It takes a long time for the public to discover what is happening to themselves and to their living space.

Dr. Alice Stewart is a central figure in the dispute in the political-scientific-military world over nuclear industry liability for injury caused by low level radiation. She carefully collected information on children born in England and Wales and through rigorous analysis showed damage from radiation at levels of 1/50 to 1/100, the levels assumed to be safe by the nuclear industry-commercial establishments. By 1970 Dr. Stewart had studied some 16 million children, and through her painstaking documentation and dogged persistence had moved the medical world to recognize the harmful effects of medical X-ray of women during pregnancy.

The Hanford installation was studied by Thomas Mancuso, Alice Stewart and George Kneale to evaluate the hazards of radiation in the workplace. Unlike most death certificate studies, the Hanford Worker Analysis contained yearly reported readings on radiation exposure badges for each worker. Hence it was possible to correlate death-cause with radiation exposure level. The findings of the Hanford study provoked a veritable storm of defensive behavior on the part of both the US government agencies and the nuclear industry. Cauters did occur more frequently than the radiation research scientists had predicted. The US government agencies moved quickly to counteract the expected impact of this finding on their nuclear weapons program. Dr. Mancuso's funding for his follow-up studies of Hanford workers and workers at other installations were terminated. Please refer to pages 89-96 for more details on the "Mancuso Affair".

US military control over radiation-related health research, seen by it as vital for the continuance of US military nuclear strategy, was secretly threatened by the Mancuso Hanford worker analysis. Projections of health effects for workers exposed to small fractionated doses of radiation could no longer reasonably be based on A-bomb survivor data when direct information on healthy workers exposed at this low level became available. The house of cards was in danger of falling since human willingness to help radioactive material is basic in all military nuclear planning. Direct human experience to help radioactive material technology should logically replace the optimistic predictions and comforting myths which have supported nuclear growth. An audit always replaces a forecast. However resistance to this logical change is strong.

The generally accepted nuclear industry estimate of a cancer-disabling dose from radiation is 500 rad exposure. The Mancuso, Stewart, Kneale estimate is 33.7 rad. An independent analysis done by Dr. John Goffman on only those Hanford workers who survived more than 15

years after their radiation exposure (ie, those not dying before the cancer developed) put the estimate at 43.5 rad. Since nuclear workers are permitted to receive 5 to 12 rad dose of radiation per year, they could double their general cancer risk in three to nine years. Because most workers do not receive the maximum permissible dose each year, it has been argued in the past (by nuclear proponents, relying on the 500 rad doubling-dose estimate) that it is unlikely that workers would accumulate enough radiation exposure to double their cancer risk in a lifetime of work in the industry. However, the lower doubling estimate significantly increases the probability of doubling cancer risk even for workers with exposures well below standards, making this employment more hazardous than the government and nuclear industry has stated. The implications of the Hanford worker study are that the actual nuclear worker cancer fatalities will be 10 to 16 per 10,000 workers per year at 20% of the permissible dose level. This is clearly unacceptable employment.

The following is an attempt to estimate the numbers of "early" victims of the Third World War, beginning with Hiroshima and Nagasaki in 1945:

155,521	immediate civilian fatalities
2,140	pregnant women with their children killed
147,033	aborted embryos and fetuses
1,523	civilians who died between 9/45 and 1/50 from bomb injuries
200	interceptable and severely congenital malformations
1,364	children with milder congenital malformations
1,350-4,090	cancer victims among survivors
1,000-21,600	genetically damaged offspring each generation (after equilibrium) until death of the family line

The Hiroshima and Nagasaki victims number about 322,000. Genetically damaged children will continue to be born and in their turn produce damaged offspring for generations to come.

The production and testing of nuclear bombs since 1945 has resulted globally in even more deaths and casualties:

68,000 - 95,000	embryonic, fetal and infant deaths
2,527,000 - 6,620,000	cancer victims (some of whom die in pre-cancer states)
18,000 - 22,000	children with severe congenital malformations
420,000 - 8,900,000	genetically damaged children each generation (after equilibrium) until death of the family line
10,000,000 - 22,000,000	(calculated to the year 2000)

The global victims of the radiation pollution related to nuclear weapons production, testing, use and waste conservatively number 13 million. The current rate of weapons production globally (1985) generates between 7,000 and 15,000 victims yearly (between 20 and 40 a day) even without further nuclear weapons testing.

These estimates include the miners and nuclear workers whose radiation-related illnesses have never been acknowledged by either government or industry. Most victims are unaware of the toxic substances added to their air, water or food. Even if aware of exposure, most victims are unable to prove that their sickness is related to their exposure.

**Information from Radiation and Human Health. A comprehensive investigation of the evidence relating low-level radiation to cancer and other diseases by John W. Gofman, MD, PhD (published in 1981)**

When experts disagree, whom shall we believe? While it is widely agreed that ionizing radiation produces serious effects like cancer and leukemia, one is constantly bombarded with variants of the two following statements, in spite of an enormous body of scientific information proving them false:

1. "Oh yes, ionizing radiation does indeed produce harmful effects, but only if the dose is very high. We do not know the effects of low-level radiation."
2. "There was a release of radiation today, but the amount was small, and no harm will be done to the public health."

Scientists, public health officials.....are thoroughly confused by such statements, particularly when they read or hear statements by this author and other scientists asserting that we do know the effects of low dose radiation and that both evidence and logic tell us that there is no harmless amount of radiation exposure. Whom do we believe?

It is not necessary to believe any expert on faith, when the evidence is available for all to examine. Since the author thinks that evidence, not faith in certain authorities, should be the foundation of opinion, he has endeavored in this book to present all the existing human evidence.

To the best of his knowledge, the author has included every study of radiation and cancer development which meets the criteria of providing some reasonable estimate of radiation dose, and of reporting a meaningful follow up period for the exposed persons. Negative studies (those that find no effect from radiation) as well as positive studies have been included. Studies excluded are listed, so that the reader can determine if the exclusion was appropriate.

Whether or not we can assess the effects of ionizing radiation, those effects inexorably go on being whatever they are. The desire of this author is to come as close as possible to figuring out the truth about those effects.

The author feels deeply concerned about the activities which pollute and destroy the exquisite information machinery, ( the human complement of 46 chromosomes) from which all future humans must originate. The author knows that it is just by chance, in the random shuffling of mankind's genes, that he did not receive the damaged genes and chromosomes that produce very low intelligence, severe emotional disorders, early death, or major physical disorders. Luck, not merit. Those of us who were lucky may express our gratitude not only by helping those who were unlucky, but also by working to protect the integrity of the species' genetic materials from unnecessary injury.

With ionizing radiation, electrons are removed from their atoms, and endowed with energies that are huge (10 to 1,000,000 times normal) compared to those in ordinary chemical reactions. Such electrons demand for great distances (hundreds of times greater) compared with normal atomic distances of angstroms. These electrons have the chemical capability to break any type of bond one might care to visualize. Once that marauding electron has ripped an electron out of an atom in a molecule (creating a "free radical"), that molecule is itself at such a high energy level that it can produce all kinds of chemical reactions that would never have been possible without the ionizing radiation.

Radiation:

1. beta rays- electrons traveling at high speed
2. alpha rays- helium nuclei (2 protons with a plus two charge)
3. gamma rays- highly energetic X-rays (millions of electron volts per photon versus thousands)

There is a curious misconception in some quarters about alpha particles. Those who endeavor to assure the public about the safety of nuclear power and nuclear bomb building are fond of a little demonstration they make. They place an alpha-emitting source near a machine that counts the emissions, and show the counter whirring. Then a piece of paper is placed between the source and the counter, and the whirring ceases. What the public is supposed to conclude from this demonstration is the "weakness" of alpha particles for causing biological damage. "After all, they can't even make it through a sheet of paper." The reader by now knows how ludicrous this demonstration is. The reason the alpha particles do not get through the paper is that they are so effective in damaging chemical bonds in the paper that they transfer all of their energy in just the thickness of the sheet of paper. The appropriate conclusion is that alpha particles should be expected to be very damaging in going through tissue. If an alpha-emitter is lodged, for example, in the lining epithelium of the bronchus (where lung cancer originates), three or four sensitive cells there will get an enormous blast of energy as one alpha particle expends its energy in passing through them. To be sure, however, an alpha-emitter on the surface of the body cannot produce radiation injury to internal tissues.

Health effects are cumulative, that is, health effects increase with an increase in the total amount of radiation delivered to a particular tissue. Age at irradiation is all-important in determining cancer induction by radiation: the younger are far more sensitive than the old. The scientific literature is rife with a lack of appreciation of the importance of age at irradiation.

#### The "Permissible Dose"

An early ICRP recommendation was that the permissible dose for occupational exposure should be calculated according to this formula:

Dose accumulated at a particular age = (5) x (age minus 18) rem.

with a maximum permissible yearly dose of 12 rems and 3 rems per quarter. There is not a shred of scientific substance behind this elaborate result of 5-rem and 12-rem annual doses. Nor is there any basis for the 3-rem-per-quarter limitation, in the author's opinion the reason for all these variations of permissible dose is to make it appear to the worker that someone somewhere must know what he is doing in setting dose limits.

The real issue is the use of the word permissible. Workers are encouraged directly and indirectly to believe that permissible means safe. The reader of this book now knows that there is not a shred of evidence whatsoever for any safe dose of ionizing radiation with respect to cancer induction: cancer is expected to be in excess in proportion to the dose received.

(Karl Z. Morgan suggested a reduction of the permissible exposure to plutonium and other transuranic elements. Karl Morgan has stated that there is 20 times more damage caused by plutonium than was suspected at the time of standard setting.)



GAO

United States General Accounting Office

Briefing Report to the Chairman,  
Committee on Governmental Affairs,  
United States Senate

July 1988

NUCLEAR HEALTH  
AND SAFETY

Dealing With Problems  
in the Nuclear Defense  
Complex Expected to  
Cost Over \$100 Billion

Submitted  
by  
Dr. Mandel  
Reference  
# 2



GAO/RCED-88-197BR

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15-Jun-89: EX-00310, PAGE 33 OF 33

DEADLY DEFENSE  
DANGEROUS RADIOACTIVE WASTEWATERS

A Citizen  
Guide  
By the  
Radioactive  
Waste Campaign



13-JUN-89, EX-00311, PAGE 1 OF 3  
SANTA FE COUNTY  
RESOLUTION NO. 1989-49

650518

A. RESOLUTION

OF THE COUNTY OF SANTA FE ADDRESSING THE TRANSPORTATION OF WASTE ISOLATION PILOT PLANT (WIPP) SHIPMENTS THROUGH THE COUNTY OF SANTA FE, AND RECOMMENDING THAT CERTAIN ON-SITE AND OFF-SITE HEALTH AND SAFETY CONDITIONS BE MET PRIOR TO THE SHIPMENT OR ENFORCEMENT OF ANY RADIOACTIVE MATERIALS AT THE WIPP FACILITY.

WHEREAS, the County of Santa Fe recognizes the potential danger of the transportation of radioactive materials through the County of Santa Fe; and

WHEREAS, the County of Santa Fe recognizes its obligation to protect the health, safety and welfare of the general public within the County; and

WHEREAS, WIPP shipments containing radioactive materials are scheduled to pass through the County of Santa Fe; and

WHEREAS, in recognition of the attendant risks involved in the transportation of radioactive materials, the Department of Energy is obligated to improve the health and safety of the Waste Isolation Pilot Plant on-site and off-site, as specified in Federal regulations, in agreement with federal agencies, and in agreement with the State of New Mexico; and

WHEREAS, it is the understanding of this body that many measures necessary for the safety, health and welfare of the general public have not been completed; and

WHEREAS, the County of Santa Fe and the Public Safety Board recognize their responsibility to protect the public health and safety, and also the Department of Energy's responsibility to ensure the safe transportation and disposal of nuclear waste; and

WHEREAS, U.S. Highway 285 through Lamy, NM is a congested road with non-restricted access, and intersection with State Road 41, and numerous driveways, it is inadequate for the safe transportation of hazardous waste.

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650519

NOW, THEREFORE, BE IT RESOLVED BY THE GOVERNING BODY OF THE COUNTY OF SANTA FE.

A. Prior to WIPP shipments of radioactive materials passing through the County of Santa Fe it is recommended that the Department of Energy address the following on-site and off-site health, safety and other conditions:

(1) The Department of Energy demonstrate compliance with the Environmental Protection Agency's Environmental Radiation Protection Standards for Management and Disposal of Spent Nuclear Fuel, High Level and Transuranic Radioactive Wastes;

(2) The WIPP land withdrawal bill, including an amendment requiring compliance with Federal Environmental Protection Agency Standards 40CFR-191, Sub-part A, and Sub-part B as re promulgated, be passed by Congress;

(3) The Waste Isolation Pilot Plant is completed, including the completion and approval of the Safety Analysis Report, the completion of the Fourth Shaft, and the construction of the Worker's Health and Safety Building;

(4) The Environmental Evaluation group certifies the monitoring program for the environmental impact of the WIPP site;

(5) The economic impacts of WIPP be addressed by the appropriate agencies;

(6) The United States Department of Energy, the United States Department of Transportation, and the State of New Mexico specifically define the highway routes to be used, and the permitted shipping times;

(7) The containers used in shipping are certified by the Nuclear Regulatory Commission;

(8) The United States Congress appropriate funding for, and completes the construction of, the Santa Fe Bypass and the Los Alamos/Santa Fe Relief Route, both of which are WIPP project relief routes for the safe transportation of nuclear wastes;

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- (9) The appropriate authorities institute a continuous training program for personnel engaged in responding to spills and for health providers in the area.
  - 8. Upon adoption by this body, copies of this Resolution shall be immediately transmitted to the Governor of New Mexico, the New Mexico Congressional Delegation, the secretary of the U.S. Department of Energy, and any other persons or agencies deemed appropriate.
- PASSED, APPROVED AND ADOPTED this 22nd day of August, 1989.

*[Signature]*  
 HANK HINDS  
 COUNTY CLERK  
 SANTA FE BOARD OF COUNTY COMMISSIONERS  
 SANTA FE COUNTY COMMISSIONER, DISTRICT #2

APPROVED AS TO FORM:  
 MORRIS OSBORNE

*[Signature]*  
 County Attorney

ATTEST:

*[Signature]*  
 JEFF E. JORDAN, County Clerk

681026  
 COUNTY CLERK  
 STATE OF NEW MEXICO  
 I hereby certify that this instrument was duly filed for record in the County of Santa Fe, New Mexico, on the 22nd day of August, 1989, at 1:16 p.m. and was duly recorded in book 200, page 527, 528.

Witness my Hand and Seal of Office  
 June 21, 1989  
 County Clerk of Santa Fe County, N.M.  
*[Signature]*



7:12:51  
7:12:52

Sirs - I am trained as a calligrapher, teacher, lecturer, educator in creativity & self-esteem - I have served in numerous community organizations around the country - as a local director, as a commissioner of the state of Wisconsin, with the Peace Corps, I have recently been named to "Academy of Women of the Twentieth Century".

I am not a scientist, but am a concerned American who for some time have been deeply involved in the nuclear waste issues on the citizen level, working full time on the steering committee of CCEES, Concerned Citizens for Nuclear Safety, for which I receive no money.

We must deal with nuclear waste, using common sense, honesty, logic, human values. We must cooperate with one another in seeking solutions - there is no longer time for arguing after the fact. The global crisis threatens the future of the planet - but the environment in grave danger - the human species threatened with imminent extinction. We must become responsible caretakers on behalf of the earth - common sense must prevail. Political expediency must not influence decisions that affect thousands of generations just because 700 million has been spent in building KIPP, does not mean it is the solution to our nuclear waste problem, KIPP is not inevitable, it is not to look at this anymore, we need to be ethical & use integrity, we need to listen to such = prudent, reliable scientists as to grave dangers & above all consider the future of our civilization. Sirs, the idea of geological burial is not the answer for nuclear waste, as Mrs. Morcio, et al. argue.

The SES report is incomplete in addressing the 3 alternatives, it does not address the vital subject of research into transmutation or neutralization of nuclear waste. It seems logical that a test force, the size & priority of the area = nation project be created immediately to deal with cooperative solutions for waste management on site. This should include physicists, chemists & in nations from all countries, to be coordinated by United Nations.

We are told that it is safer to keep stockpiles of nuclear waste where it is for 50 to 100 years than transporting it with possible spills. This gives fuel for reloaded & testing, as well as the fact of burying it above ground, making possible monitoring of waste during these years.

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I am distressed, disinterested, that a department of my government, which I have always trusted, is involved in the kind of duplicity, the pervasiveness of Americans is the destruction of our environment. I certainly do not wish to see the Department of Energy start out another project, to be handled in the same disorganized fashion. I protest the way these hearings have been held - with broken promises; no apparent respect for those persons testifying. The 800 number has been out of order frequently the past week. I never received my own card of confirmation for my speaking time.

The blame is not all on your shoulders - the forty years of nuclear production have grown to obscendo - resulting in a huge military build-up, based on competition, fear, gigantic defense contracts, greed, & excessive government jobs - under the guise of national security. In the rush of creating bombs, little thought was given to the management & danger of nuclear waste. How we as the entire world are faced with toxic substances that threaten our air, water & ground, for a life of 240,000 years. What are we to do with it?

It is time to turn around the national confusion, open up which allows this another & without blame, look at the present situation & work together for a solution. Civilization faces a momentous decision here in the U.S.

MARY LOU COOK - 321 Calle Louisa Norte, Santa Fe, NM. 87501  
505/983-2894

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3.1-8

JERRY SIMON CHASEN

Statement of Jerry Simon Chasen, Esq., Secretary & Manager of Casa Las Barrancas, Inc., at the Hearing on the Draft Supplement to the Environmental Impact Statement for the Waste Isolation Pilot Plant

Fellow Citizens:

My name is Jerry Chasen. I am a practicing attorney, and am also the secretary and manager of Casa Las Barrancas, Inc., a small community in the Pajarito Valley. I appreciate the opportunity to address the concerns presented by the SEIS document and the WIPP proposal.

Some of my colleagues here would summarily remove those officials and employees of the Department of Energy who support the scheduled opening of the Waste Isolation Pilot Project from the classification of "human being". They would reclassify these unfortunate souls as the enemy, the forces of evil, or just simply as monsters.

Although I firmly oppose the scheduled opening of WIPP, I would not go so far. I am willing to recognize that these officials and employees are human beings. But that in itself tells me a lot about them. Because Human Beings make mistakes. Human beings also have the capacity to recognize danger signals, and correct a course of action which would have otherwise lead to error.

Proceeding with the scheduled opening of WIPP would be a grave mistake. In the first place, human error, that same quality of the human experience which has us here in the first place, has not been

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15-JUN-89; EX-00313; PAGE 2 OF 7

taken into account in assessing the risks of proceeding. Second, mistakes have already surfaced in the expectations the department had in assessing the site. Third, we as human beings, often have a warning system which is triggered by ventures into dangerous territory--in this case, the warning system itself is in creation, establishing that by definition we cannot have addressed the concerns raised. Finally, the damages which will result from proceeding with this scheduled course so far exceed the damages from continuing with the non-action alternative (i.e. leaving the waste where it is), as to render entirely unreasonable proceeding on the scheduled course. In other words, this would be almost a sure shot mistake.

The calculations in the SEIS do not consider the potential for human error. Perhaps DOE is not projecting that the same variety of human beings as I'm familiar with will be working on this project, because the only type of human beings I know about make mistakes. But since I can only speak from experience, I'll have to assume those are the types of human beings DOE uses, until they can show me otherwise.

And there's lots of room for human screwup in the plan as presently projected-- we have errors possible in the designs of the containers, the assessment of the materials used, the testing processes, the manufacturing, the inspection, the maintenance, and the operations. And then of course there's the disposal process itself, bringing on possible errors in packaging, loading, unloading, etc. There's travel too--certainly no one sets out to

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have an accident, but unfortunately we're all too aware of the fact that they do happen. I remind you that the trucking company selected to move these materials is the low bidder, with absolutely no experience hauling hazardous or nuclear materials on public roads.

When Three Mile Island was built, accidents caused by human error were not factored into the projections. But that was the cause of that accident. It was also the cause of the accident at Chernobyl. Likewise, the Exxon oil spill. Unless DOE really has some new type of human being in mind for these jobs, then the people executing WIPP will be imperfect human beings capable of error, and accidents arising from WIPP are in reality 1,000 to 100,000 times more probable and/or more severe than we are presently being told.

I must say, I have my doubts about DOE coming up with an errorless human being, because mistakes have already been made in the predictions and expectations that DOE had regarding the site. There are cracks in the walls causing the walls to close in on each other at a rate two to three times faster than expected. If, in the future, non-compliance with federal standards would require the retrieval or removal of wastes, the accelerated collapse of the repository may make the plan to retrieve wastes impossible or extremely hazardous. And even if, as DOE claims, this error in calculation is harmless, it demonstrates that error is quite possible in connection with the projections concerning this proposal, and there certainly is no guarantee that the next error

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will be so devoid of consequence..

For example, brine is seeping into the repository much faster than had been expected, and the formation of radioactive slurry has been described as "very likely." Indeed, the Scientists Review Panel at the University of New Mexico, an independent agency having no stake whatsoever in the outcome of this debate, says that under present plans, "radioactive slurry could reach the Pecos river in less than 100 years."

In my experience, when human beings are faced with the results of their mistakes, they are likely to say something like "I just had a feeling this wouldn't work out," or "I wish I had listened to so and so." Sometimes also, these mistakes are preceded by a feeling that we'd like to take some action, and so we rush headlong into something without taking proper time to reflect and assess the situation. Instead of making the most prudent choices, we take the first option we see, and then have to deal with the damage.

There are major warnings here protecting us as a group of human beings from committing this exceedingly dangerous mistake: in the first place, the environmental standards which SEIS purports to meet (never mind the substantial question of whether they do) are not even in existence any more. These standards were struck down because they did not comply with minimum federal law. New standards are expected out shortly. If we as a society have established an agency, the EPA, to safeguard our environment, what would compel us to proceed without having the benefit of that

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Agency's specification of the factors to be considered in review of a proposal like this one? Remember, we are talking about a deposit which is supposed to contain wastes safely for 10,000 years (never mind the 240,000 years plutonium is active). Remember too, that DOE itself has said that "[n]o environmental reasons have been found why the TRU waste couldn't be left at the Idaho National Engineering Laboratory" indefinitely. What's the rush, particularly in light of all of the warning signals? The urgency around this project, the feeling that something must be done, regardless of the cost, the dangers or the damage to this community, is unexplained and apparently unsupported.

So, we all make mistakes. But this mistake would be a nightmare to clean up. Euphemistically, we could say that irreparable damage may be done to the delicate environmental balance of this region. But that doesn't begin to convey the horror of a land where radioactive water flows, and which is unfit for human passage, never mind habitation. Euphemistically, we could say that there may be some injury or lives may be lost as a result of this project. That won't begin to describe the anguish of a mother giving birth to a child deformed as a result of radiation, or a child living without parents because their lives were cut short by an unforeseen accident. You know, the human part of this tragedy.

As an attorney, I have had the privilege of working with people putting ideas and projects together. I've watched them come to agreement on various issues that had divided them. When they proceed, it is with alignment, and the results of those

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understandings are invariably positive.

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I have also watched, and tried to deal with the after effects, when, as a result of unequal bargaining or for whatever reason, a party by force has implemented its will. Although it may look like an agreement has been reached, there is none. So here, although it may look like a process is in operation, I fear that DOE has only one interest in mind--defending the SEIS and proceeding regardless of the costs. The damage, physical, psychological and social, which will result from this course of conduct will take centuries to clean up if it is indeed at all possible.

Casa Las Barrancas is an interesting little community north of Santa Fe, in the Pojoaque valley. One of the key elements of our community's living agreement is that we do not, by weight of argument, finances or otherwise, force a position on another community member. Rather, we take all of our needs into account, and by consensus come to a course of conduct which satisfies all of our needs. True, this process takes longer. It also means that when we proceed, we all do so willingly, and consequently, we inevitably accomplish our result faster and to everyone's satisfaction. The important thing is that we recognize that proceeding by force would be a mistake, and that by proceeding by consensus, we help to avoid mistakes.

We must stop opting for instant gratification and look at its costs--you of the DOE may think you have found a place to put this crap, but by not listening to the warning signals about proceeding

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3.2-1

here, there will be grave damage. And the damage done by this type of arrogant, insensitive, headstrong, belligerent action by government will take far longer to unravel than the time it will take to proceed prudently, cautiously and sensitively in the present situation.

DOE--listen up. Suppose WIPP does proceed as you've planned. When there's an accident, when people die, when it all starts to leak, and pollute the environment, and ruin this area of the country for generations, perhaps centuries, what will you say-- Whoops, I goofed? Sorry, but I did the best I could?

3.1-8

Will it have been worth it? You know the answer.

Sure, you're human beings. Sure, you can make mistakes. That doesn't mean you have to make this one.

Thank you for your consideration.

Ladies and Gentlemen:

On behalf of Lighthawk, The Wings of Conservation, an international Santa Fe-based environmental conservation organization, I wish to submit the following comments for inclusion in the public hearing record.

We are opposed to the further building of nuclear weapons in the United States today and are vitally concerned with those problems which result from accumulation and disposal of nuclear wastes. We do not want the New Mexico WIPP site to serve as the repository for the nation's nuclear wastes, whether on an experimental or permanent basis.

We read the SEIS and do not believe it is in compliance with NEPA which requires that all impacts of the proposed project and all reasonable alternatives are addressed. Inasmuch as the 1985 standards are no longer legal, WIPP must not open until this facility is brought into compliance with the new and currently unfinished EPA safety standards.

We will clearly pay a deadly price if this project is put into place. The loss of health, property and economic stability are at stake for all citizens along the route. One accident or threat of an accident will change our lives forever. Many of these of us who live close to the proposed WIPP route are now wondering, against our will, how to relocate. None of us want our children and grandchildren to suffer from this ill-conceived and unsafe project. Some of my family lives in the area already contaminated by Rocky Flats.

A good look at the road expansion near Abiquiu brought the reality of this threat home to me. There is near certainty of disaster somewhere along the way because of the many unknowns and the many unsafe procedures as defined in the SEIS.

WIPP cannot remain in compliance with the Resource Conservation and Recovery Act while attempting to receive a "No Migration Variance" which allows the receipt of defense program containers without leaving their contents. Lighthawk is concerned about the impact on ground water, land areas and soils. The Pecos River is only 15 miles from the site and is fed by the same aquifers, and although flow rates and directions are as yet undetermined, the SEIS assures us there will be no significant problems. Many unknowns exist including brine seepage into the repository, gas generation rates of waste material, room and shaft air closure. Both possible release examples of radionuclides cited in the SEIS exceed EPA standards. It is admitted that surface facilities will become contaminated during routine operations, but the SEIS does not explain how this will be handled at the completion of the 25 year operational phase.

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2.

The site itself is unsuitable, and the SEIS justifications are vague and unsubstantiated. Gas generation, extent of fracture zones, the Castle Formation, the Salado Formation, flow directions and rate, karsts, salt dissolution, salt creep, waste retrieval and other elements are variables which make the WIPP site a deadly area of so-called containment.

Transportation of waste materials is not adequately substantiated in the SEIS. The TRUPACTI container is not certified and releases radiation, RADPHM is seriously outgassed, and much of the waste is to be transported by truck on our dangerous highways and city streets. There is no provision for emergency response, and evacuation plans do not exist.

Vague statements, unspecified results, data which is selected to support its statements but which is not necessarily complete or accurate, and explanations of what is "likely" to happen are included in this document which is supposed to describe the processes and answer detailed questions. The recent news has reminded us of the burden of history on various other nuclear facilities (Manford, Savannah River, etc.) and the problems of accidental and covered up irregularities. Plutonium is the most toxic substance known to man and is so nonchalantly referred to within a 10,000 year containment period when the life of plutonium is 249,000. Human error (the Kreea-Valdes factor) is not mentioned in any SEIS considerations.

It sounds to us as if DOE is planning to transport thousands of truckloads of nuclear wastes in containers which admittedly release radiation and which haven't passed important stress testing on two and four lane roads and highways through populated areas right along with other traffic which includes, to mention just a few, large gasoline trucks and people who have just driven out of the drive-in liquor store. (I live and work within one and two blocks of St. Francis and see the traffic and hear the sirens.) Then the DOE is planning to place these highly toxic wastes into a site which is geologically unsuitable to actually contain the materials so they will spread into ground water, soils, and air. In the event of an accident, the medical community is not prepared to respond in this special condition. Since there are no evacuation plans, I guess all of us who are able could just leave. It doesn't look good.

It is apparent the DOE is not treating the involved people along the route with respect. DOE is not making any attempt to protect us from loss of health, economic stability and quality of life. DOE is certainly not attempting to protect the few hundred people it proposes to employ from contamination. One wrong move, and drastic and tragic catastrophe will replace the once beautiful country and people of this area.

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3.

Lighthawk asks that other safe solutions be sought in disposal of existing nuclear wastes, and that the entire weapon building industry be required to meet responsible, sensible, safe guidelines for any future developments.

Thank you.

Susan Morgan  
for Lighthawk  
P.O. Box 8163  
Santa Fe, IN 87504-8163  
(505) 982-9656

1-3

THE ENVIRONMENTAL DEFENSE FUND (EDF) HAS 12,000 MEMBERS AND IS INVOLVED ABOUT 700 IN NEW MEXICO. HAVING A GENERAL SOURCE OF EPA TECHNICAL COMMENTS AT THE DENVER HEARING LAST WEEK, I WOULD BE GLAD TO HAVE SOME TO RELY ON IN THE 3 YEARS I'VE WORKED ON WIPP TO BE DOE'S CONSCIOUS ATTEMPTS TO AVOID HAVING TO COMPLY WITH THE LAWS PROTECTING PUBLIC HEALTH, SAFETY AND THE ENVIRONMENT AT WIPP.

LOOK FIRST AT THE EPA STANDARDS. EPA ADDED THESE STANDARDS IN 1985. DOE HAS KNOWN AT LEAST SINCE THEN THAT IT WOULD HAVE TO SHOW WIPP COMPLIED. EDS'S CHARACTERISTICS TO DOE TO START HOPING AT THAT TIME. DID DOE NO. NO. EVEN THEN, DOE HAS YET TO START THE WORK IT MUST DO TO SHOW COMPLIANCE WITH THE EPA STANDARDS. IF DOE HAD STARTED IN '85 OR '86, MAYBE WE'VE HAVE SOME IDEA NOW WHETHER THIS \$770 MILLION HOLE-IN-THE-GROUND COULD DO THE JOB IT WAS BUILT FOR. WHY HAVEN'T DOE STARTED YET?

LOOK NEXT AT THE RCRA LANDFILL MIXED WASTE FINALLY BECAME SUBJECT TO RCRA IN 1986, ALTHOUGH EPA HAD BEEN ON RECORD FOR YEARS SAYING THAT RADIOACTIVE-TOXIC WASTES SHOULD BE REGULATED UNDER OUR NATIONAL HAZARDOUS WASTE LAW. SO IN 1986, WHEN WE IT FINALLY APPEARED, ALL DOE NEEDED TO DO WAS READ THE (NEW) RULE THEY HADN'T BEFORE, TO SEE THAT THEY COULD NEVER GET A RCRA PERMIT AT WIPP AND WOULD HAVE TO GET A NON-TRANSURANIC VARIANCE FROM EPA. BUT DID DOE APPLY? NOT THEN. IN APRIL 1988, DOE CIRCULATED A RCRA COMPLIANCE STRATEGY, BUT DID THEY FILE THEIR NON-TRANSURANIC VARIANCE? NO, NOT UNTIL FEBRUARY AND THAT RELATION IS ABOUT TO BE

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2

RETURNED TO DOE BY EPA AS INSUFFICIENT SO DOE WILL HAVE TO REJECT  
 9 COURT. YET AT THE SAME TIME, SECRETARY WATKINS IS BLAMING A  
 DELAY IN WIPP'S ORIGIN AND EPA'S TRICKING TO LONGS ON THE PERMIT  
 WHY DIDN'T DOE GET STRONGER?

THANK YOU AT NEPA COMPLIANCE. FOLKS BEGAN TELLING DOE THAT EITHER  
 NEW INFORMATION HAD SURFACED AND WIPP HAD BEEN CHANGED ENOUGH  
 THAT A SUPPLEMENT TO THE 1980 FINAL EIS WOULD BE NECESSARY AS  
 LONG AS AS 1983. IN DECEMBER 1987, EDE INFORMED DOE THAT NOT  
 PRODUCING A SUPPLEMENT WOULD TRIGGER LITIGATION. IT TAKES DOE  
 ANOTHER YEAR FROM THEN UNTIL DECEMBER 1988 TO CONCLUDE THAT A  
 SUPPLEMENT WAS IN FACT NECESSARY. BY THEN, GIVEN DOE'S TARGET  
 OPENING DATE OF SEPTEMBER 1989, IT WAS TOO LATE TO DO A THOROUGH  
 IN-DEPTH MEANINGFUL SUPPLEMENT, OR TO PROVIDE AN ADEQUATE  
 PUBLIC REVIEW AND COMMENT PERIOD. THE EXTRA 20 DAYS YOU WOULD  
 ADD FOR PUBLIC COMMENT IS MUCH A STRAT. WHY CAN'T DOE  
 COMPLY WITH THE SPLIT, AS WELL AS THE LETTER OF NEPA?

LOOK AT THE IDAHO EMBARGO LAST FALL. GOVERNOR ANDRUS OF IDAHO  
 SUGGESTED FOR THE 1ST TIME AN EMBARGO ON WASTE SHIPMENTS TO  
 INEL AN ILLEGAL MOVE IN WHICH DOE IMMEDIATELY ACQUIESCED.  
 SINCE INEL IS THE ONLY FACILITY GRANTED UNDER RCRA  
 TO RECEIVE MIXED TRU WASTE FROM ROCKY FLATS, ~~THEY~~ SENDING THE  
 WASTE ELSEWHERES TEMPORARILY WHILE DOE TRIES TO SHOW THAT  
 WIPP IS SAFE WILL REQUIRE DOE TO OBTAIN A TEMPORARY  
 STORAGE PERMIT UNDER RCRA. GETTING SUCH A PERMIT TAKES  
 A SIX MONTHS AS A MEMBER OF THE ROCKY FLATS ENVIRONMENTALS  
 MONITORING COUNCIL, I ASKED DOE OFFICIALS LAST DECEMBER

3.1-3  
3.7-2

2.3.2.1  
2.3.2.2

3.1-3  
3.7-1

15-JUN-89: EX-00315, PAGE 3 OF 5

3

WHEN THEY INTENDED TO APPLY FOR SUCH A PERMIT. I ~~WAS~~ GOT NO  
 ANSWER. NOR DID DOE HAVE AN ANSWER WHEN I ASKED AGAIN AT  
 THE DESIGN SEALS HEARING LAST WEEK. NOW, EIGHT MONTHS  
 AFTER ANDRUS 1ST ACTED, AND SIX MONTHS SINCE HE SAID HE'D  
 SHUT THE BORDER AGAIN NEXT SEPTEMBER, DOE STILL HAS NOT APPLIED  
 FOR A RCRA PERMIT FOR AN INTERIM STORAGE SITE. WHY NOT?

HAVING BEEN EDE'S LEAD ATTORNEY ON WIPP FOR THE LAST THREE  
 YEARS, AND HAVING BECOME A CHAUC. ABOUT THE TIME I FINISHED  
 MY FIRST WEEK OF LAW SCHOOL, I THINK I KNEW WHY DOE HAS  
 FAILED TO ACT. DOE LONG AGO DETERMINED THAT HAVING A WASTE  
 STORAGE CRISIS WOULD BE GOOD. ONLY WITH A CRISIS COULD  
 DOE CONVINCE CONGRESS THAT WIPP MUST BE GIVEN WAIVERS  
 FROM THE ONLY ENVIRONMENTAL LAWS WHICH APPLY AT THE SITE SO  
 THAT IT COULD OPEN. ONLY IF THERE WERE A CRISIS COULD DOE TELL  
 CONGRESS THAT THERE MIGHT BE A QUOTE-UNQUOTE DANGEROUS  
 DISRUPTION IN US NUCLEAR WASTE'S PRODUCTIONS (AN OXIDATION  
 IN MY PERSONAL OPINION). ONLY WITH A CRISIS CAN DOE HOPE TO  
 CONVINCE CONGRESS THAT DOE'S FIRST WASTE FACILITY WITH  
 WASTE PRODUCTION COMPLEX DURING THE ERA OF ENVIRONMENTAL  
 REGULATIONS SHOULD NOT HAVE TO BE SHOWN IN COMPLIANCE  
 BEFORE STARTING OPERATIONS AND CONTINUING YET ANOTHER SITE

THE ACHIEVEMENT OF DOE'S GOAL - WHICH IS TO AVOID COMPLIANCE WITH  
 ENVIRONMENTAL AND HEALTH LAWS - BY DOE'S CREATION OF A  
 WASTE STORAGE CRISIS BY ITS CONTINUALLY HAVING RECEIVED  
 OR INITIATE ENVIRONMENTAL COMPLIANCE VIA TIMELY MANUVER,  
 IS NOT ONLY NOT GOOD GOVERNANCE, IT IS THE WORST TYPE OF

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3.1-4  
3.7-1

3.1-4  
3.1-8

(7)

GOVERNMENT DOE'S MACHIAVELLIAN PLOY TO CREATE A CRISIS IS ALSO NOT CONSISTENT WITH THE "JED" LEAF RHETORIC OF ADRIAL WATKINS' ADMINISTRATION IN WASHINGTON. IT IS HERELY CONSISTENT WITH DOE'S PAST PRACTICE. LOOK OUT JUST AT HAMBRO AND SAVANNAH RIVER, BUT LOOK CLOSELY AT ROCKY FLATS. HERE THERE IS A CRIMINAL INVESTIGATION OF ENVIRONMENTAL NONCOMPLIANCE NOT JUST AT THE PLANT BUT ALSO AT DOE'S ALBUQUERQUE OFFICE, THE SAME OFFICE THAT OVERSEES THE WIPP.

IN THE ROCKY FLATS AFFAIR, PARAGRAPH 5.45, THE FBI AGENT DESCRIBES A NOVEMBER 13, 1987 MEMORANDUM FROM POLYMER SOMORZSKI, THE THEN-MANAGER OF DOE'S ALBUQUERQUE OFFICE. HE ADVISED THE ACTING ASSISTANT SECRETARY FOR DEFENSE PROGRAMS THAT DOE SHOULD RESIST THE REQUESTS OF ENVIRONMENTAL AND PUBLIC HEALTH AUTHORITIES TRYING TO CLEANUP ROCKY FLATS AND OTHER DOE FACILITIES, AND SUGGESTING THAT DOE SEND A MESSAGE TO EPA THAT DOE AND ITS CONTRACTORS ARE WILLING TO GO TO THE MAT IN OPPOSING ENVIRONMENTAL ACTION AT DOE FACILITIES.

DOE IS ALWAYS SO PROUD OF ITS TECHNOLOGY. DOE APPROACHES GETTING WIPP OPEN IN SEPTEMBER AS A CHALLENGE. WHAT WOULD BE WRONG INSTEAD WITH MAKING WIPP CONFORMANCE WITH PUBLIC HEALTH SAFETY AND ENVIRONMENTAL LAWS. THE GOAL AND CHALLENGE? WHY DOESN'T DOE ASK ABOUT THAT WIPP ISN'T READY? WHY DOESN'T DOE GET OUT AND INTERVIEW ABOVE-GROUND, BECAUSE FACILITY WHILE WE SEE IF DOE CAN ACHIEVE A TRULY INTERIM AND PRESENT-SETTING GOAL. REQUIRING THE 1ST DOE FACILITY EVER TO COMPLY WITH ALL RELEVANT HEALTH SAFETY AND ENVIRONMENTAL STANDARDS? WHAT WOULD BE THE

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(5)

HAD IN SHOWING THAT HER SELF-PROCLAIMED WORLD CLASS FACILITY IS NOT JUST BUILT ON STONE AND MURDER AND PUBLIC RELATIONS BUT THAT IT CAN SURVIVE AN OUTSIDE INDEPENDANT AGENCY'S ASSESSMENT OF ITS SUITABILITY. WHY CAN'T DOE TRY THAT PATH? WHAT IS SO DRAINING ABOUT AMBASSADOR FEDERAL AGENCY TO EMBARRASS, DISCREDIT AND PUBLIC SAFETY?

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30 Irving Place  
New York, NY 10003  
(212) 529-0890

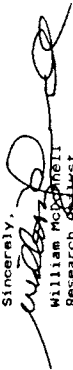
June 14, 1989

Hearing Officer  
DOE-SEIS Project  
P.O. Box 5400  
Albuquerque, NH 87115

Sir:

Please accept the following comments relating to the Special Environmental Impact Statement for the proposed Waste Isolation Pilot Plant.

Sincerely,

  
William McDonnell  
Research Analyst



30 Irving Place  
New York, NY 10003  
(212) 529-0890

Testimony of William McDonnell

My name is William McDonnell, and I am a research analyst at Public Data Access, a New York based consulting firm that uses large environmental and health databases to analyze environmental impacts. I have had extensive experience in the field of radioactive waste, have been a consultant to Radioactive Waste Management Associates and to the Radioactive Waste Campaign where I coauthored the book **Deadly Deceits**, considered by many to be the most comprehensive independent analysis of radioactive waste at the Department of Energy's production facilities. Previously, as the New York representative of the Health and Energy Institute I organized the first international conference of radiation victims.

I am here today to give testimony on behalf of Public Data Access in regard to the MIPP facility. Given the extent to which the assumption made in the Final Environmental Impact Statement regarding the Waste Isolation Pilot Plant has been inaccurate, it is surprising that the DOE has even attempted to salvage the possibility of the MIPP facility at this site.

In fact it must be noted that almost 10 years after the 1980 FEIS the DOE still is not actually proposing the opening of the site but instead is calling the opening a test period. No one ought to be deceived, however. The placing of up to 10% of the intended TRU waste--that is, over half a million cubic feet of highly radioactive waste--is still, what ever you call it, the siting of the waste. It is amazing to me that the Department of Energy suggested that AFTER this waste is placed that it will be evaluated "...to assess the ability of MIPP to meet regulatory requirements for the long-term protection of the environment from the disposal of TRU wastes (SEIS, p. 4). In effect the DOE is saying, let us ignore all environmental regulations, go ahead with plans, and then see if there are any problems. Such an approach is clearly in violation of most regulations requiring assessment and establishment of safe storage before emplacement.

1. Unless otherwise stated, all references are to the Draft Supplement Environmental Impact Statement Waste Isolation Pilot Plant, April 1989. U.S. Department of Energy. Two volumes. DOE/EIS-0026-DS. This is referred to herein as SEIS.

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Yet the DOE even admits that the purpose of the SEIS is not to demonstrate compliance with regulatory requirements (SEIS, S-3). A telling admission given the National Environmental Policy Act (NEPA) which requires the DOE to prepare a detailed statement of its proposed environmental impacts (FEIS 14-1).2

Let us now look at some of the specifics regarding the siting of TRU waste at the WIPP facility.

Gases will build up much more quickly in the storage vaults than was expected when the site was chosen.

Moisture content and brine inflow is also substantially higher than previously predicted.3

Salt creep is taking place faster than expected. Storage rooms may collapse, or at least be too dangerous to work in, thus preventing retrieving the waste, one of the original conditions storing the waste at the facility. Cracks have developed in some of the storage rooms, a fact that the DOE neglected to mention in the SEIS.

Additionally, the radioactive curie content is much higher than that presented in the FEIS ten years ago.

The DOE is now under RCRA regulations regarding the sited TRU waste sitting at the WIPP facility.

Given all these changes from the original situation when the site was chosen, there are certainly many reasons to conclude that the site is unfit, and specifically unfit in that the radioactive waste will eventually escape the WIPP facility, threatening the public health and environment.

Let us list a few ways of release:

The SEIS admits that there will be routine airborne releases. Filter failures present another release potential. Accidents in route and at the facility present still more airborne release possibilities.

2. Final Environmental Impact Statement Waste Isolation Pilot Plant. October 1980. U.S. Department of Energy. Two volumes. DOE/EIS-0026.

3. Note that an earlier site for the WIPP was rejected partially because of the presence of pressurized brine (4-60).

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Other release mechanisms exist once the waste is placed under ground. The original FEIS mis-estimated the possible gas permeability in the WIPP by a 1000 (SEIS, 5-107). The build-up of gases that is now expected to take place as a result of less permeability may present serious containment problems when coupled with the increased brine inflow, also not predicted when the facility was first proposed.

A combination of gas build-up and brine inflow may lead to various mechanisms whereby the radioactive hazardous wastes are released into the outer environment, for example through boreholes, or through aquifer contamination. Placing the waste in salt is simply a bad idea. The salt is readily soluble in water. The containers will corrode quickly because of the salt brine. Gases will build up, a radioactive corrosive slurry will result with who knows what possible result.

Furthermore, the SEIS does no evaluation of possible climatic change, a factor that could definitely lead to escalation of radioactive releases.

Note also that in all of DOE's Case II intrusion scenarios, radioactive material is brought to the surface immediately.

Given all these possibilities of release of radioactivity into the environment it is extremely relevant what standards are used to estimate the possible health effects of such releases (3-161).

Dr. Gould, in other testimony at this hearing, points out that the current radiation risk assessments, used by the Department of Energy in their SEIS may be a thousand times too low. In particular, his studies of increased mortality after the Chernobyl accident underscore the necessity of basing health risk assessments on actual protracted internal exposure to low doses of radiation, rather than extrapolate, as BEIR III and the DOE does, from external high-level radiation doses.

Dr. Starnglass, in his testimony, explains a likely mechanism to account for the increased mortality (and associated with protracted low-level internal radiation exposure, the Patkau Effect. The DOE ignores this mechanism and instead uses existing EPA radiation standards that are grossly inadequate to protect the health of the workers and the public from low-levels of ingested or inhaled radioactive substances. Dr. Starnglass also points out that the EPA standards are currently under review, and that at the very least the siting process ought to wait until the new standards are developed and examined.

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7.8.6.1  
7.8.6.2  
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At Public Data Access our findings corroborate the testimony of Drs. Gould and Sternglass. Using massive databases to compare radioactive releases with infant mortality, mortality, and births, we find marked discrepancies apparently associated with exposures to radiation from Chernobyl, Three Mile Island, from the Department of Energy's Savannah River facility, and from exposure down-wind of commercial nuclear reactors. Our findings reinforce the findings of Dr. Gould and Dr. Sternglass that environmental radiation is a greater threat to human health than is presently acknowledged. There is a pressing need to examine the public health impact of alpha and beta emitting internally ingested radiation. It is folly to site radioactive waste until an impartial reevaluation of such health effects has taken place.

Yet the MPP facility's Supplementary Environmental Impact Statement (SEIS) and the Final Environmental Impact Statement (FEIS) does not consider the substantial health effects of protracted low-level internal exposure to radiation, and ignores completely the petkau Effect. Instead the DOE relies on erroneous extrapolations from external dose data. As a result the SEIS statements regarding the health effects are low, probably by several orders of magnitude. This applies to worker exposures, accident exposures, after closure exposures.

Coupled with the serious problems having to do with brine, gas build-up and creep, the health risks at the proposed Mipp facility are a really huge. We would strongly recommend not to open the facility until the question of adequate health standards has been solved, were it not the case that this site ought not be opened at all because of its many other problems.

There is one other comment I would like to make regarding the siting of transuranic mixed waste at the Mipp facility.

The TRU mixed waste is subject to RCRA requirements. RCRA requires a "detailed chemical and physical analysis of a representative sample of the waste (SEIS, 10-6). Yet the waste has not been analyzed. In fact, the SEIS argues that "old" TRU waste ought not be analyzed because such wastes would generate substantial amounts of additional wastes and be dangerous to the workers (SEIS, 10-6).4 Furthermore, DOE

4. The DOE wants to put wastes that it does not even know the contents of into the repository. The SEIS says specifically that "The estimates resulting from a sparse

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is trying to get a variance so it will not be subject to EPA land disposal restrictions for hazardous waste disposal.

It is particularly disturbing that the Department of Energy is attempting to get a variance to place hazardous wastes that are unsafe into the Mipp repository. Such an attitude explains the skepticism that many have for the motivations of the DOE. It is difficult to understand how the DOE can expect to characterize the placing of hazardous radioactive wastes in the repository when it does not even know what the wastes are. Surely the possible chemical reactions with the brine are of some interest to those concerned about the next 10,000 years. I know of no record where it is still permissible to dump drums of material when no one knows what is contained in the drums. Yet this is precisely what the DOE is suggesting that it will do with its mixed TRU waste.

There are many other omissions, errors, and miscalculations in the Department of Energy Supplementary Environmental Impact Statement concerning the Waste Isolation Pilot plant, but this attempt to site unknown wastes seems to us one of the worst.

We emphatically recommend to the Department of Energy that it begin to look at the actual health risks of its proposed future actions and select the No Action Alternative rather than continue to spend money on an ill-conceived plan that certainly in the future add one more DOE site to its long list of those that pollute the environment and endanger the public health.

data base such as this one relied on in this report should be considered relative and not absolute (SEIS, 5-5B). In the next sentence mention is made of "...uncertainties that result from insufficient analytical data on waste chemistry (SEIS, 5-5B)."

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7.9.3-3  
7.12.3-7

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1-2

SANTA FE CLERGY AND LAITY CONCERNED  
P.O. Box 4811  
Santa Fe, N.M. 87502

Testimony for the Environmental Improvement Division's  
public hearings on WIPP

June 18, 1989  
Santa Fe, N.M.

First, let me say that dividing speakers at this hearing into different rooms is another government tactic to divide the opposition.

The United States government, in its mad pursuit of ever-more powerful nuclear weapons, has poisoned the citizens of too many states already. Soldiers and residents of Nevada were among the first victims, when the government exploded test bombs above ground shortly after World War II. More recently, radioactive wastes have been released into the air and the water from nuclear weapons plants in Ohio, South Carolina and Colorado. And now what about Los Alamos?

New Mexico's governor, Garry Carruthers, wants our state to be next on the list. Businesses that oppose the Waste Isolation Pilot Plant (WIPP) shouldn't get discretionary state contracts, he says.

Clergy and Laity Concerned of Santa Fe protests the poisoning of our citizens by our government. We in New Mexico know what will happen in the suburbs near Carlsbad: first the government will cover-up the radioactive wastes -- and then the government as the years go by, will try to cover-up the fact that the burial plan didn't really work so well after all. So we say to the U.S. government: We won't be your dumping ground. We won't wait for the first barrel of radioactive waste to fall off the first truck on the way to WIPP. We have had enough.

And to Governor Carruthers and his plan to take away our rights of freedom of speech, we say: Sorry, Gov, you're not going to WIPP us into line on this one.

Submitted by Nancy Reinboed,  
c/o P.O. Box 4811  
Santa Fe, N.M. 87502  
June 15, 1989

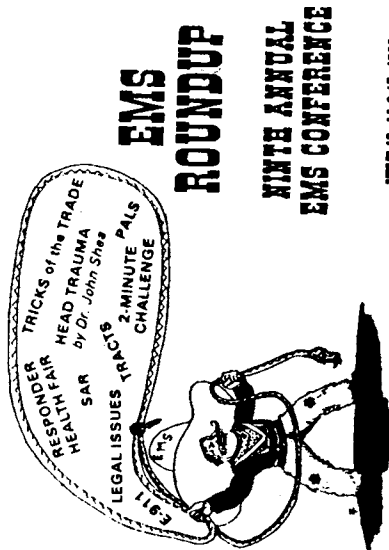
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### GENERAL SESSIONS

- A. TRICKS OF THE TRADE**  
Thurs. 8:30-10:00 AM 1.8 Hrs. Cat. 1  
Prehospital care as an art. This exciting session will feature Thom Dick, EMT-P, presenting the best of the "Tricks of the Trade" column as featured monthly in *EMT*.
- B. SOMETHING FOR EVERYONE**  
Thurs. 1:30-3:00 PM 1.8 Hrs. Cat. 2  
This session will feature three excellent speakers from near and far speaking on infection control as a way of life, rural EMS incident command and developing EMS in the South. Presenters: Paul Johnson, Chief Phoenix Fire Dept.; Don Menez, Director Norman EMS
- C. A SURVEY OF LEGAL ISSUES**  
Fri. 8:30-10:00 AM 1.8 Hrs. Cat. 1  
J-ril Ayres, Jr., J.D., EMT-P, from Dallas is one of the most widely recognized experts in EMS legal issues. He'll share his up-to-date information as well as his candid thoughts and opinions.
- D. HEAD TRAUMA FROM A TO Z**  
Sat. 11:00 AM-12:30 PM 1.8 Hrs. Cat. 1  
John Shea, M.D., will present the classic two-field, non-stop, no-holds-barred head trauma lecture that has received audiences from coast to coast.

**RESPONDER HEALTH FAIR**

Back by popular demand, this year the health fair will be set up from noon on Thursday through Friday afternoon. This will allow more of you to visit with the various exhibitors, pick up informational handouts, and participate in the free health screening activities.

- |  |  |  |
|--|--|--|
| Heart Association<br>Cholesterol Screening<br>Smoking Cessation<br>BP Screening<br>Drug & Alcohol Prevention<br>Poison Control Center<br>and more... | Adult Immunizations<br>Medi-Cal Eligibility<br>Senior New Mexico<br>Message Therapy<br>United Blood Services<br>Injury Control | Diabetes Association<br>Cardiovascular<br>Kidney<br>Hepatitis<br>HIV/AIDS<br>Traffic Safety Bureau<br>HIV/AIDS Program |
|--|--|--|

**TRACTS**

- T1 Paramedic Advanced Life Support Skills**  
The AMA certified course for Paramedics, Nurses and Physicians only, it will be coordinated by Larry Marston, NREMT-P and will include a variety of new life support techniques. It will be presented 12 AM to 2 PM on Oct. 1, Imperial/Palmade County, California. The total fee for this course is \$100.00. Seats are limited.
- T2 Rural EMS Treatment**  
It is a real area a look at with EMS. It will be available on-site. Prof. Anderson, the State EMS Director from Idaho has literally "written the book" on rural EMS. The book will be a combination of lecture, demonstration, and audience participation in simulated and real scenarios.
- T3 Instructor/Coordinator Test**  
This year's IC Test is again coordinated by the State IC Council. It will include a session of "computer for instructors" where you can learn about the newest hardware and software a G and A session with Jack Ayers regarding legal issues and a practical skills review.
- T4 Emergency Responder Test**  
This three part test sponsored by the Emergency Nurses Association will feature "After the Code," an overview of Code procedures, an epidemiologic view of "Rescue in the Wild West," and a comprehensive session on "Susual Abuse of Children, Negligence and Intervention."
- T5 Medical Directors Roundtable**  
This annual get together of on-line and off-line EMS Medical Directors from across the state will review the new EMS Philosophy Handbook, discuss the changes in the EMT Regulations, and compare problems and solutions. This session will be coordinated by Dr. Charles Ross in his last official function as State EMS Medical Director.

**WORKSHOPS**

- W1 LOOK OUT BEHIND YOU! A PRACTICAL GUIDE TO SPINAL IMMOBILIZATION**  
Thurs. 10:00 AM 1.5 Hrs. Oct. 1  
A demonstration of numerous practical, yet sometimes unorthodox methods of immobilizing the human spinal column, grounded in current research. Presented by Thom Dick, EMT-P, San Diego, California.
- W2 SHOCK-THE SILENT KILLER**  
A. Thurs. 10:00 AM 1.5 Hrs. Oct. 1  
B. Sat. 5:00 PM  
A review of shock assessment and treatment for all levels of EMT by one of New Mexico's best EMT educators—Ann Radclaw, RN, NREMT-P.
- W3 VIOLENCE: THE SILENT KILLER**  
A. Thurs. 10:00 AM 1.5 Hrs. Oct. 1  
B. Thurs. 5:00 PM  
Back by popular demand this workshop will include a discussion of the various history, identification, common delivery mechanisms, psychological effects, appropriate management, and prevention of violence caused by the indigenous violence of New Mexico. Presented by our own EMT Region 1 Director, Tom Townsend, NREMT-P.
- W4 CASE STUDIES FOR THE EMT INTERMEDIATE**  
Thurs. 10:00 AM 1.5 Hrs. Oct. 1, Sat.  
Some ALS Coordinator Maria Magallon, NREMT-P will challenge EMT-Ps with case studies on respiratory assessment, shock, hypothermia, drug overdose and more as she demonstrates the case study approach to C.E.
- W5 REFORMING TO AN AMTRIAL CHAIR**  
Thurs. 10:00 AM 1.5 Hrs. Oct. 2  
Based upon his recent experiences, the Vermont State EMS Director, Don Means, will present a slide show and discussion on how to deal with a "big one."
- W6 GROUP AND CMO**  
A. Thurs. 10:00 AM 1.5 Hrs. Oct. 2  
B. Thurs. 5:00 PM  
NACED group members will share information about the nature of the growing program and how the Critical Incident Stress Debriefing Team can help reduce the effects of the traumatic incidents. Presenters: Don Means, EMT-P, G. and Carol Church, M.A., and Peter Rosenzweig, GEM, NREMT-P, J.C. Pat Barrington, NREMT-P, J.C., and Gregory-Jay Moore, NREMT-P, J.C. will lead the session.
- W7 ADD AND YOU**  
A. Thurs. 10:00 AM 1.5 Hrs. Oct. 2  
B. Thurs. 5:00 PM  
A brief update on the Aids Epidemic followed by open discussion on its impact on the physical, emotional, and personal environment in which emergency responders work. This session will encourage tough questions, sharing and allow for the expression of feelings. These AIDS experts will lead the workshop—Jim Wilkins, M.D., Pat Hays, and Steve Barry, JEMT.
- W8 PREVENTING THE CRIME SCENE**  
A. Thurs. 10:00 AM 1.5 Hrs. Oct. 2  
B. Thurs. 5:00 PM  
A review of problems, considerations, tips, and approaches to ensure the proper preservation and documentation of crime and/or death scenes. Presented by Detective Derman Key of the Albuquerque PD and Don Sisco, NREMT-P, of Rio Rancho DPS and the OHA.
- W9 VIOLENCE IN NEW MEXICO**  
Thurs. 10:00 AM 1.5 Hrs. Oct. 2  
A review and discussion about one of New Mexico's most public health problems—interpersonal violence. This workshop will include a presentation on the new EMS heartline and explore how EMS heartlines with the present. Presented by Victor Lucero, M.D., Public Health Division and Robert Johnson, M.D.
- W10 TOOLS OF THE TRADE: NEW STUFF YOU NEED TO KNOW ABOUT**  
Thurs. 5:30 PM 1.5 Hrs. Oct. 1  
A discussion of significant new equipment and its possible impact on resources and their problems by JEMS author Thom Dick, EMT-P.



- W11 TRAUMA TOPIC DU JOUR**  
 By popular demand, Dave Ave County's Street Doc, Ben Diven, will present a trauma topic of his choosing for all levels of EMT's.  
 A. Thurs 3:28 PM  
 & Fri 1:28 AM 1.8 Hrs. Oct. 1
- W12 INFECTION CONTROL: A UNIT OF LIFE**  
 A comprehensive overview of infection control from the emergency scene to the vehicle and equipment, to the station, to the home and back. Presented by renowned infection control experts and authors, Dr. Robert L. Smith and Dr. Fred Beckel from the Phoenix Fire Dept., this workshop should be attended by a representative from every service.  
 A. Thurs 3:28 PM  
 & Fri 1:28 AM 1.8 Hrs. Oct. 2
- W13 RELAXATION TECHNIQUES**  
 Last year's highest rated workshop, this session presented by former critical care nurse, William J. [redacted] and her husband David presents information on the physical effects of stress and various ways to relax, including demonstrations of relaxation techniques that can be used by you and your partner.  
 A. Thurs 3:28 PM  
 & Fri 1:28 AM 1.8 Hrs. Oct. 2
- W14 CHILD ABUSE AND THE EMT**  
 A review of the symptoms, signs and symptoms of child abuse and a discussion of the role and responsibilities of EMT's in dealing with this most disturbing form of violence. Coordinated by Suzanne Patten from the OMA.  
 Thurs 3:28 PM  
 1.8 Hrs. Oct. 2
- W15 LEGAL Q AND A**  
 A. Fri 1:28 AM  
 & Fri 3:28 PM 1.8 Hrs. Oct. 2
- W16**  
 An interactive session with Pharmacology, Jack Ayres and our own Pharmacology Branch, Cheryl Chouard of the Health and Environment Dept. Bring your "what if" and your "how come?" for a lively exchange that will expand upon the topics discussed in the General Session. The afternoon session will spend some time on EMS testing and education issues.  
 Fri 1:28 AM  
 1.8 Hrs. Oct. 2
- W17 THE NEW MEDICAL PICTURE**  
 This presentation will introduce participants to the medical air transport programs in New Mexico. Each program will present a brief overview of their operation followed by an interactive panel discussion.  
 Fri 1:28 AM  
 1.8 Hrs. Oct. 1
- W17 DIABETIC EMERGENCIES... NOW WHICH IS WHICH?**  
 By learning some physiology and recognizing some signs and symptoms the student will be better able to differentiate which by Donald J. Mason, MEd, EMT-P. J.C.  
 Fri 1:28 AM  
 1.8 Hrs. Oct. 1
- W18 THE TWO MINUTE CHALLENGE**  
 Ever wish you could be engaged in an emergency situation before you have to deal with it for real in the field? This a video tour through 10 scenarios that challenge the emergency vehicles 2 minutes in order to achieve 3 favorable outcomes. Will you and your partners survive? Tom, Tomward, MEd, EMT-P, will be your tour guide.  
 A. Fri 3:28 PM  
 & Fri 1:28 AM 1.8 Hrs. Oct. 1
- W19 SITUATIONAL LEADERSHIP: GETTING MORE RESULTS WITH LESS EFFORT**  
 According to Dr. Milt Gornet, LMA's Incident Management Consultant, Problems and Escalating Tension: "There is no best leadership style—it all depends on the situation." This session is about influencing others to accomplish work and get the best of the best: how to lead, how to follow, how to work with others, and how to work with yourself.  
 Fri 3:28 PM  
 1.8 Hrs. Oct. 2
- W20 EXTENSION OVERVIEW**  
 Mike Garcia, EMT-J, JIC from the EMS Academy, will present the three hour overview of vehicle applications, common sense and common sense considerations, patient assessments and rescue techniques, new tool applications, and distribution theories.  
 Fri 3:28 PM  
 3.0 Hrs. Oct. 2

- W21 PLUMBO AND TUTTIS**  
 Bruce Allen, MEd, EMT-P, Firefighter Trainer for BCFD, will present the review of Rules and electrolytes for EMT Internationals.  
 Fri 3:28 PM  
 1.8 Hrs. Oct. 1, 1c
- W22 813 BILLS CHALLENGE**  
 How do you wonder how good your basic skills are? This 3 hour "hands on" workshop coordinated by Region 1 Director, John "Doc" J. Mason, EMT-J, JIC and David Bill Adams, EMT-J, JIC from Region 1c, will allow you to find out by evaluating your strengths and weaknesses.  
 Fri 3:28 PM  
 3.0 Hrs. Oct. 1
- W23 NAME OF BENCHMARK: THE NEW TRIUMPH MENTOR ASSESSMENT**  
 Using the new state guidelines, the student will learn the 38 steps to triage assessment. This is a "think-out" learning experience. According to instructors, Lisa Meier, EMT, MEd, EMT-P, and Don Meier, MEd, EMT-P, by the end of the day you'll know it backwards.  
 A. Fri 6:58 PM  
 & Sat 1:28 AM 1.8 Hrs. Oct. 1
- W24 COMPLIANCE RESOLUTION: COMPROMISE IS A TRADE, COLLABORATION IS AN ATTITUDE**  
 Using the leadership model developed in the earlier session, Dr. Milt Gornet will discuss how to select the appropriate mechanism for resolution, mediation, arbitration and apply it correctly the next time for a high probability of success. A "win-win" theme for all parties.  
 Fri 6:58 PM  
 1.8 Hrs. Oct. 2
- W25 DO YOU HEAR WHAT THE DOCTOR HEARS**  
 Ann Pedersen, RN, MEd, EMT-P, will present a review of Intermediate level respiratory assessment and treatment of problems. Please bring your stethoscope to this one.  
 Fri 6:58 PM  
 1.8 Hrs. Oct. 1, 1c
- W26 FROM THE OUTSIDE VIEWPOINTS**  
 LMA's Training Director, Chris Deaneck, M.D., of Thomas Sargent, Thomas Oler (responding who is on call) will provide an update of what's being seen and studied at the Level 1 Trauma Center and how what you do makes a difference. For all levels.  
 Sat 8:00 AM  
 1.8 Hrs. Oct. 2
- W27 QUALITY AND PRICE**  
 From a supplier's perspective, Dr. John Shea explores the marketing, personnel, and legal issues surrounding these problems that don't make it.  
 Sat 8:00 AM  
 1.8 Hrs. Oct. 2
- W28 COMA AND ALTERED MENTAL STATUS**  
 Dr. Ben Chien will present the discussion of one of pathologist's greatest challenges to the EMT Internationals level.  
 Sat 8:00 AM  
 1.8 Hrs. Oct. 2
- W29 SEARCH AND RESCUE OVERVIEW**  
 New Mexico SAM Resources Office, Bill Vegas, will present the overview of the National SAR Plan, the NM State SAR Bureau and Plan, and the resources used in both land and air searches.  
 Sat 8:00 AM  
 1.8 Hrs. Oct. 2
- W30 E-911 AND RURAL ADDRESSING**  
 A panel of experienced experts will discuss the progress and the progress for the coming revolution in public safety access and coverage in the next few years. Start learning about it now.  
 Sat 8:00 AM  
 1.8 Hrs. Oct. 2
- W31 LIGHT AIRCRAFT CRASH RESPONSE**  
 Always a busy scene! Martin Vigil, MEd, EMT-P of Southwest Life-Safety Training Consultants, will address the EMS response to light aircraft accidents, including identifying scene hazards, access problems, extraction considerations, scene security/traffic control, and other considerations.  
 Sat 8:00 AM  
 1.8 Hrs. Oct. 2
- W32 GAMING BIDDING/TIPS**  
 For EMT's and later careers, this workshop will feature dog trainer, Tom Spradley, will teach considerations how to read dog parameters and to learn to read a dog's behavior in order to reach emergency victims. Ask how to know when it's time to call it quits.  
 Sat 8:00 AM  
 1.8 Hrs. Oct. 2

### OTHER CONFERENCE INFORMATION

**HOST HOTELS**  
The Holiday Inn-Midtown will host our functions and provide the following emergency medical equipment and drugs. Credits will be available for the Convention Center. Stop by and see the latest in publications and equipment.

**VENDORS**  
Credits will be available for the Convention Center. Stop by and see the latest in publications and equipment.

**PARKING**  
For those who prefer a hotel closer to the Convention Center, the Holiday Inn-Midtown provides complimentary parking for all Convention Center guests. Room rate, \$48 single or double. This rate includes a full breakfast and 2 complimentary cocktails per day. The tickets of rooms set aside for our meetings are limited to register EARLY.

**CONTINUING EDUCATION**  
New Mexico and National Registry continuing education credits are available for all WORKSHOPS.

**FUN and GAMES**  
Early registration and reception, Wednesday, July 1, 1989, 5:30 to 7:00 p.m., at the Holiday Inn-Midtown.

The Skills Competition will be held July 13 at 8 p.m. in the parking area. Events are for EMS personnel. Prizes will be awarded. Prizes will be awarded. Prizes will be awarded. Prizes will be awarded.

**FRIDAY LUNCHEON**  
The Awards Luncheon will be held on Friday, July 14, 12:00 p.m. in the parking area. Prizes will be awarded. Prizes will be awarded. Prizes will be awarded. Prizes will be awarded.

**RESERVATIONS FOR PLEASE PRINT**

NAME	LAST	FIRST	MIDDLE
ADDRESS			
CITY	STATE	ZIP	PHONE
NO. OF ROOMS			
DATE	TYPE	DATE	TYPE
Type of Accommodation			
Special Requests			
Special Instructions			

**EMS**  
848 Single or Double  
848-267-5344

**DOUBLE TREE HOTEL of Albuquerque**  
Post Office Box 1827  
Albuquerque, New Mexico 87102  
Attention: Reservations

### CONFERENCE REGISTRATION FORM

Please submit a separate form for each person registering.

**NO CANCELLATIONS ACCEPTED AFTER JULY 1, 1989**  
**REGISTRATION FEES:** Please Check  
 \$60.00 Early Registration (Must be received by July 3, 1989)  
 \$85.00 At Door Registration  
 \$20.00 Thursday Only  
 \$35.00 Friday Only  
 \$10.00 Luncheon Only  
 Extra Luncheon Tickets \$10.00  
 Number of Extra Tickets \_\_\_\_\_  
 \$10.00 Saturday Only  
 Note: \$3.00 discount on full registration fee for NEMTA members.

NAME \_\_\_\_\_  
 ADDRESS \_\_\_\_\_  
 CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_  
 TELEPHONE NUMBER \_\_\_\_\_  
 REPRESENTING \_\_\_\_\_

LEVEL OF LICENSURE:  
 Basic  Intermediate  Paramedic  Instructor/Coord.  
 Nurse  Physician  First Responder  Other

Make checks payable to EMS CONFERENCE FUND and return this form to:  
 EMS CONFERENCE FUND  
 c/o New Mexico Health Resources  
 P.O. Box 27860  
 Albuquerque, New Mexico 87133

IF A PURCHASE ORDER IS BEING USED PLEASE COMPLETE THIS SECTION.  
 Agency Name \_\_\_\_\_  
 Purchase Order Number/No. of persons covered by PO \_\_\_\_\_

FOR SPECIAL USE ONLY  
 PO OR # \_\_\_\_\_  
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 PO OR CASH \_\_\_\_\_  
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**CONFERENCE OVERVIEW AND WORKSHOP SELECTION**  
 Due to the limited size of some of the workshops, it is necessary to make advance reservations for some of the workshops. Enrollment is on a first-come, first-served basis. To ensure your first choice of workshops and receive the discount on your registration fee, please note: Several workshops continue for more than one session. Please be careful not to select workshops which overlap in time.

**WEDNESDAY, JULY 13**  
 Registration/Reception—Holiday Inn Midtown 8:00-7:00 pm  
**THURSDAY, JULY 14**  
 Registration—Albuquerque Convention Center 7:00-4:30 pm  
 General Session—"Ticks of the Tick" 8:30-10:00 am  
 Workshop Session 1 10:00-10:30 am  
 MN W1A W2A W3A W4 W5 W6 W7 W8  
 W9 W10 W11 W12 W13 W14 W15 W16 W17 W18  
 Lunch (On Your Own)—Health Fair Opens Noon-1:30 pm  
 General Session—"Infection Control" 1:30-3:00 pm  
 "Developing EMS in Small Areas"  
 Break—Vendor Area 3:00-3:30 pm  
**WORKSHOP SESSION 2** 3:30-6:00 pm  
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**TRACTS (3 to 8 hours if you select one of these to attend not to overlap times)**  
 Tract 1: Public ALE—Mass All Working Sessions  
 Tract 2: Rural EMS Incident Command—Ft. 10:30 am  
 Tract 3: Incident Command—Ft. 10:30 am  
 Tract 4: Emergency Nursing Topics—Ft. 10:30 am-8:00 pm  
 Tract 5: Medical Decision Roundtable—Ft. 10:30 am-3:30 pm

**Radiation and Public Health Project**

Suite 134  
163 Third Avenue  
New York, New York 10003  
(212) 529 0890

June 13, 1989

Hearing Officer  
DOE-SEIS Project  
P.O. Box 5400  
Albuquerque, NM 87115

Sir:

Please accept the following comments relating to the Special Environmental Impact Statement for the proposed Waste Isolation Pilot Plant.

Sincerely,

*Jay M. Gould*  
Dr. Jay M. Gould  
Director

**Radiation and Public Health Project**

Suite 134  
163 Third Avenue  
New York, New York 10003  
(212) 529 0890

The Health Effects of the WIPP Waste Repository  
Statement By Dr. Jay M. Gould, Director,  
Radiation and Public Health Project (RPHP)

The proposed action of the Final Environmental Impact Statement for the Waste Isolation Pilot Plant greatly reduces, by a factor of 1000 or more, the radiation dose to the public from the proposed location of truck and rail transport facilities and of the operation of the WIPP facilities in the testing phase, both before and after final emplacement of radioactive waste.

The purpose of my testimony today is to show that there are many indications that the current radiation standards are inaccurate and inadequate as guidelines for the safe siting of transuranic and mixed waste. The Waste Isolation Pilot Plant FEIS radiological risk estimates focus only on carcinogenic risks and ignores the far greater risks from the possible release into the atmosphere and water supplies of long-lived radionuclides. These radionuclides, once ingested, attack the immune system and accelerate death by attacking the respiratory system. In addition, they are statistically and biochemically linked to the development of the actual danger from ingested radioactive particles, and demonstrate that the current standards used by the Department of Energy are woefully understated.

Professor Sternglass, in a separate statement, has reviewed in some detail the biochemical mechanism by which Strontium-90 and many of the transuranics, products of reprocessing and fabrication operations of Department of Energy (DOE) facilities, do biological damage after entering the food chain. Once ingested, the radionuclides become heavily concentrated in certain organs such as the bone marrow, where the blood cells that make up our immune systems originate. As many researchers have established in their work, in particular Dr. Abram Pakau of the Canadian Atomic Energy Commission, chronic exposure to extremely low radiation levels from ingested radionuclides promote the formation of "free radicals." These free radicals then most efficiently are drawn to blood cells, and penetrate and destroy them. At higher levels of radiation the larger number of "free radicals" tend to negate each other so that this process is perversely most efficient at low radiation levels.

These findings of Dr. Pakau support the position that there is no safe lower limit of exposure to radioactivity. Even the smallest releases of long-lived radionuclides from

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the treatment and storage operations at the WIPP present some possibility of affecting human health. It would be far more prudent to keep all radioactive waste in place until the DOE more fully comprehends the actual health risks involved, and then accurately estimate health and environmental risks.

Furthermore, there is substantial evidence to show that all large-scale radioactive releases since the invention of nuclear technology have been associated with immediate excess mortality effects which cannot be attributed to chance.

The Radiation and Public Health Project (RPHHP) has performed analyses of official U.S. mortality data going back to 1945, and has found massive evidence of excess mortality associated with a number of major nuclear releases:

Atmospheric bomb testing.

The Savannah River accident of 1970 (only recently revealed after nearly two decades of concealment).

Accidental releases from the Millstone, Connecticut reactor in 1975.

The Three Mile Island (TMI) releases of 1979 and 1980.

Recurrent recent releases from the Pilgrim Massachusetts and Peach Bottom Pennsylvania reactors.

But by far the most revealing evidence comes from our findings, recently published by the American Chemical Society, that fallout from Chernobyl reached the United States in May of 1986 and accelerated the deaths of some 40,000 Americans.<sup>1</sup>

Our Chernobyl findings that the deaths of some 40,000 Americans were accelerated in the Summer of 1986 in the Wake

1. We include this article in the Appendix to this Statement along with a Dec. 1986 publication entitled "Nuclear Failures Take Their Toll," in which we first found evidence that after 1975 statistically significant excess mortality could be found in areas downwind of nuclear reactors. Our earlier study offered to Senator Kennedy's Public Health Committee in 1989 and indicated that most of the post-1975 excess mortality was associated with the years 1979-82, totalling as much as 50,000 excess deaths concentrated in Upper New York State, Pennsylvania and Maryland.

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of the arrival of Chernobyl radioactivity on or about May 9, 1986, indicate that the excess mortality was concentrated among the very young, the very old, and those suffering from pneumonia and from infectious diseases, especially those related to AIDS—in short those with vulnerable immune systems, in accordance with the Petkau "free radical" discoveries.

That these excess deaths were a result of Chernobyl was further substantiated by unexpected mortality excesses being most pronounced in heavy rainfall regions with heavy average concentrations of radon in the air. Further support comes from the fact that in the very same time period—mid May to mid August 1986—excess mortality in the heavily irradiated southern provinces of West Germany was an order of magnitude higher than in the U.S. although its radiation exposure to Chernobyl fallout was two or three times higher, thus confirming also the expected logarithmic shape of the dose response curve to radiation levels.<sup>234</sup>

Still further confirmation that ingested radioactive particles from Chernobyl fallout could damage the immune system came from ornithologists, in particular Dr. DeSante,

2. The dose response curve was logarithmic or "supralinear", which is to say that per unit of radiation the response in terms of mortality rises most steeply at low levels of radiation.

3. Technically speaking, calculations performed on the post-Chernobyl health data show that the dose-response curve at low doses is neither a quadratic, upward curving one, nor a straight line (linear) relationship. It is rather a  $WILLIAMSONIAN$  function that rises more rapidly at low doses than at high doses. This logarithmic form of the dose-response curve is consistent with the laboratory results of immunologists that show that the immune response is inhibited by a small amount of radiation on cell membranes particularly the oxygen "free radical" now known to be involved in a wide range of immune deficiency diseases.

4. The logarithmic form of the dose-response also means that there is actually no conflict between our conclusions about the serious effects of very low protracted exposures and the results of studies done on high dose-rate exposures in laboratory animal studies, and observations of A-bomb survivors. It is simply the case that the effect of  $WILLIAMSONIAN$  is much lower at high intensity and short exposures than at low dose-rate exposures due to the lower efficiency of free radical damage at high intensities, when large number of free radicals tend to negate each other.

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who found that in this same period there was a catastrophic reproductive failure among land birds, who fed their young insects contaminated by radioactive rainfall. Such findings give us reason to believe that the free-radical effect of low level radiation affects many if not all forms of life.<sup>5</sup>

The Chernobyl accident, for all its tragic consequences, offers an opportunity to reassess whether the price we pay for the continued operation of nuclear reactors is too great for society. Let us list separately here some of the special characteristics of the Chernobyl accident which make such a reassessment absolutely imperative:

It involved a much larger population than any earlier studies of exposed populations.

It involved a normal population, not hospital patients, workers of a limited age range of 18-65, or survivors of a traumatic event such as the destruction of Hiroshima and Nagasaki.

It involved extremely low doses of radiation, comparable to those received from distant nuclear detonations, or to the permissible releases from nuclear reactors and plutonium separation facilities. There is, therefore, no need to make any assumptions as to how best to extrapolate theoretically the effects expected at very low doses.

It involved accurately measured amounts of radioactivity in the diet, including milk, over a wide range of concentrations, especially when European data are taken into account. No such accurate measures of dose were available in any earlier studies of environmental radiation exposures or direct radiation exposures at Hiroshima or Nagasaki.

It involved internal radiation exposure as a result of inhalation and ingestion of radioactive nuclei involving alpha and beta emitters--as distinguished from the external radiation exposure from normal background levels, diagnostic or therapeutic X-rays, or gamma exposure in the cases of Hiroshima and Nagasaki.

5. The probability that the observed mortality excess among humans in the U.S., West Germany and among newly hatched land birds could be wholly the product of chance during the time of the Chernobyl fallout is infinitesimal (i.e. of the order of one out of 10<sup>10</sup>).

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The statistics emerging from the Chernobyl disaster permit for the first time ever, the establishment of a dose response relationship at extremely low doses in a normal human population, down to a small fraction of the doses encountered in the normal environment. Our studies show that protracted internal exposures at low doses do not lead to a reduced effect, but rather to an increased effect, as compared to brief but high dose-rate exposures. They show, also, that there is no safe threshold for small exposures comparable to those from normal background radiation sources, and certainly there is no "beneficial" effect as has recently been argued by nuclear proponents.

To the extent that normal background radiation enters the food chain, it is, and always has been, a human health risk. Low-level radioactivity from man-made radionuclides is an additional very new and present danger. It would indeed be foolish to contribute further to the possibility of radioactive illness by siting radioactive waste at the Waste Isolation Pilot Plant facility without first being clear that there are no increased health or environmental risks associated with this action. Yet the WIPP facility's Supplementary Environmental Impact Statement and the final Environmental Impact Statement (FEIS) does not consider the Peltau Effect, nor does the Department of Energy acknowledge the substantial health effects of protracted low-level internal exposure to radionuclides. Instead, the DOE relies on erroneous extrapolations from external dose data.

We would suggest that the Department of Energy examine such more carefully their assumptions regarding the health effects of low-level radiation exposure before siting any waste at the WIPP facility. We would also suggest that they take a serious look at other governmental data regarding adverse radioactive health effects. We speculate that the Department of Energy knows more than they are telling.

Our Chernobyl findings clearly demonstrate the health risks of protracted low-level radiation internal exposure. Perhaps the most disturbing of our Chernobyl findings is the special vulnerability of persons aged 25-34. Along with the astonishing increase of AIDS-related deaths in 1986, this suggests that persons under 40 are in fact more vulnerable to human health systems than in the peak years of atmospheric bomb testing.

Both Linus Pauling and Andrei Sakharov had predicted in 1958 that millions of persons worldwide would be mortally affected by fission products released into the biosphere by the atmospheric bomb tests which began in 1945. According to recent estimates by the time the partial test ban was signed in 1963, the superpowers had released the equivalent of

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approximately 40,000 Hiroshima bombs. Sakharov's prediction that this would result in some 12 million deaths worldwide has since been supported by the flattening out of mortality rates in the fifties, after steady improvement since 1900. This flattening out indicates that about 9 million excess deaths occurred in the U.S. alone in the period 1940-1962, along with immense damage sustained by millions of the baby boom generation born in the years of atmospheric fallout.

The potential dangers of low level radiation from impinged fission products have long been known to the Department of Energy and its predecessor the Atomic Energy Commission (AEC), even before the development of the atomic bomb.<sup>6</sup>

Dr. John Gofman, one of the participants in the development of the bomb and one time Director of the Biomedical Division of the Livermore Laboratory has made the most impassioned attack on the callousness of his colleagues in 1979, suggesting they have committed the most serious crimes:

There is no way I can justify my failure to help sound an alarm over these activities many years sooner than I did. I feel that at least several hundred scientifically defensible biomedical aspects of atomic energy have been neglected. I included chapters on nuclear-type trials for organoleptics, suitability for our gross negligence and irresponsibility. Now that we

6. Richard Rhodes, in his classic *The Making of the Atomic Bomb*, relates that early in 1943, Enrico Fermi told Oppenheimer that in the event that it was not possible to build a fast-fission bomb... radioactive fission products bred in a fast reactor would be used to poison the German food supply. Oppenheimer had also discussed this with Edward Teller. The isotope the men identified that "appeared to have the most promise" was strontium, probably strontium-90, which the human body takes up in place of calcium and deposits dangerously and irretrievably in bone."

Rhodes states that Oppenheimer decided to wait before passing this suggestion on, summarizing Fermi's suggestion as follows: "In this connection I think we should not attempt a plan unless we can poison food sufficient to kill half a million men, since there is no doubt that the actual number affected will, because of non-uniform distribution, be much smaller than this" (Richard Rhodes, *The Making of the Atomic Bomb*, Simon and Schuster, New York, 1986, p. 311).

7.13.1-7  
7.13.1-10  
7.14-10

FROM the hazard of low-dose radiation, the crime is not experimentation--it's murder<sup>7</sup>.

Furthermore, there seems to be little doubt that the health problems resulting from atmospheric testing were specifically covered up by nuclear pollution. An example here is an account of the cover-up published in the Washington Post:

"Officials involved in U.S. bomb tests feared in 1965 that disclosures of a secret study linking leukemia to radioactive fallout from the bombs could jeopardize further testing and result in costly damage claims... That study, as well as a proposal to examine thyroid cancer rates in Utah, touched off a series of top-level meetings within the old Atomic Energy Commission over how to influence or change the studies. The document also indicates that the Public Health Service then conducted the studies, joined the AEC in reassuring the public about any possible danger from fallout (Bill Curry in *The Washington Post*; April 14, 1979)."

It now appears clear that the bomb tests not only tested bombs, but they also experimented with human lives. The Department of Energy in the SEIS for Wipp want a Test Phase "...to gather data in order to assess the long-term performance of the repository and demonstrate safe waste management system operations (SEIS, S-2.3)". We suggest that there be no more tests or experiments that threaten the human health and the health of the environment.

We suggest instead that the Department of Energy now use its energy to look very seriously at the consequences of its previous nuclear experiments, that it instead develop appropriate testing that place health and the environment first, and that it establish risk assessment models based upon the data to these new values, re-siting radioactive waste only when there is absolutely no doubt that all aspects of the siting are proven safe. To transport and site transuranic and mixed waste now at the Wipp facility, a leaking facility, using inappropriate health-risk standards is irresponsible should definitely not take place.

7. John Gofman, *An Irreverent, Illustrated View of Nuclear Power*, San Francisco, CA: Committee for Nuclear Responsibility, 1979. pp. 227-228.

7.13.1-7  
7.13.1-10  
7.14-10

7.33-1

Appendix

Low-Level Radiation and Mortality.  
Nuclear Emissions Take Their Toll.

GUEST EDITORIAL

Jay M. Gould  
Ernest J. Sternglass

Low-level radiation and mortality

The Chernobyl accident was the largest disaster ever created by humans. Within a few days it spread into the hemisphere nuclear accident that caused about a tenth of annual radiation by all bombs since 1945. Low-level radiation from the Chernobyl accident arrived in the United States by about May 9, 1986. An increase in mortality followed almost immediately (1). Deaths of 80,000 to 40,000 Americans appear to have been accelerated in the four summer months of 1986, according to evidence derived from many different disciplines: epidemiology, radiation physics, statistics, epidemiology, and even orthobiology.

In May 1987, we attended a conference in Amsterdam on health effects of radiation. There we heard, from many parts of Europe, chilling stories of the effects of high radiation levels from Chernobyl, accompanied by the most dramatic evidence of human health consequences. In addition, we were presented with evidence that sufficient radiation had reached the United States to produce detectable effects on health. We found that there was, indeed, a 5.5% increase in mortality in the United States in May 1986 over May 1985. This increase of 600 deaths is the highest ever recorded.

For earlier data we had assembled, from official sources, comprehensive data bases on radiation and mortality. These permit the quantification of deaths associated with low-level radioactivity at specific times and specific places in ways not possible before. The data base information allows us to separate the effects of radioactivity from those of other, more likely varying,

environmental and socioeconomic factors. As Figure 1 illustrates, the arrival of low-level radiation from Chernobyl was recorded and so identified by EPA air-monitoring stations in each state (9). The concentration of I-131, which has a short half-life, peaked in mid-May. Other radioactive isotopes like cesium-137, strontium-90, cesium-134, and barium-140 were also identified.

Our data indicate mortality rates in the South Atlantic states in June and July of 1986 over the corresponding months of 1985 were recorded (Figure 2). There were also significant declines in the number of live births in this and other regions of the United States in this period. In Figure 3 we display the change from May 1985 to May 1986 for the total number of deaths for people 25-34 years old. The number of deaths on which the statistical significance was based was 106. The increase in deaths for age and cause of death by the U.S. National Center for Health Statistics (NCHS).

A similar chart can be prepared for the four-month period May-August 1986. The latest NCHS estimate of the number of deaths in those months is 674,000, a 2.7% gain over 1985, which became statistically significant (P < 0.001). Although most of the additional deaths occurred in May, there was also a statistically significant decline in the number of

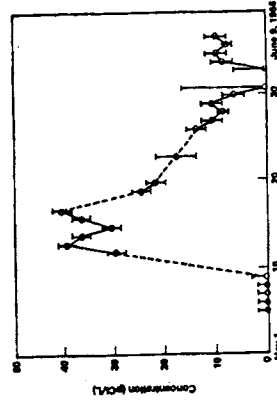


Figure 1. Concentration of I-131 in fresh farm milk, May-June 1986 in the New York metropolitan area. (Recorded by the Environmental Monitoring Laboratory of the Independent Energy)

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Figure 2. Change in infant mortality in the South Atlantic states in 1986 relative to 1985

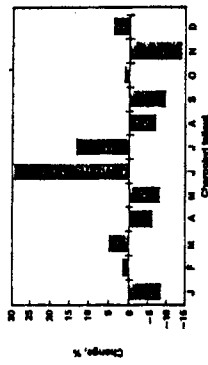


Figure 3. Change in mortality rate, New York vs. May 1985, compared with May 1985 vs. May 1984

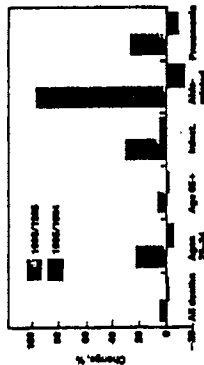
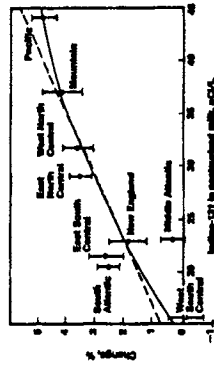


Figure 4. Regional percent change in mortality, May-August 1986 over May-August 1985, (between 87A and 87B)



Two births in June of 1985 and a sharp increase of 8% in the national infant mortality rate. By September of 1986, most of the immediate mortality effects appeared to have disappeared. The largest increase in mortality rate was in the Middle Atlantic region, which increased to 0.94 (p < 0.001) for the United States as a whole.

For the United States as a whole, the largest monthly increase in the infant mortality rate (IMR) came in June 1986, with an 8.3% increase over June 1985. In the Middle Atlantic region, which comprises New York, New

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Figure 5. Dose-response curve: Percent increase in mortality as a function of F-131 levels (C)

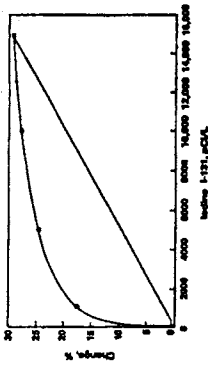


Figure 6. Infant mortality, Hudson-Hamdenburg, a year-by-year comparison

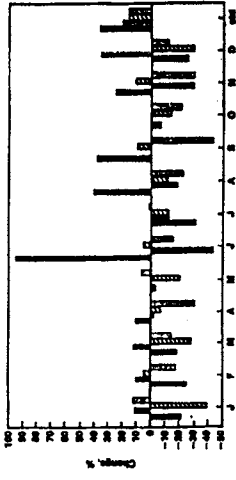
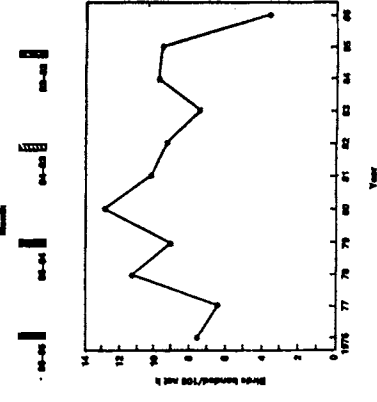


Figure 7. Number of newly hatched landmines in the Hudson-Hamdenburg area, 1976-1986







Continued from page 1

excess risk to 365, declined somewhat over 1970 to 190, to 159 deaths per 1,000 in 1980.

The infant mortality rate (IMR)—defined as the number of deaths within the first year per 1,000 live births—does not require age adjustment. Over time, the IMR is very much affected by the change in relative health standards of a nation since the DAR for newborns generally has been about 30 percent higher than the IMR for all babies. In 1915, the IMR was 93.8. The 1980 figure, at 12.6, represents an average annual decline of 3.2 percent over a 65-year period. The average annual decline in the IMR generally ranged between two and four percent in accordance with the degree to which health and medical progress in previous years had been made.

This fact is indicated by Table 1 which summarizes trends in infant mortality by five-year periods since 1915. Annual declines are seen to average below two percent in the "post-war" period, but the "pre-war" period shows an average annual decline of 3.5 percent. In the decade 1955-1964, the years when atmospheric bomb testing produced peak fallout levels, the average annual decline slowed to one percent. The significant fact is that even though in 1980 some 100,000 deaths were averted by the decline in infant mortality, the 1965-1979 period was again well over four percent.

Of the same mortality rates, the DAR is in fact the most important indicator of health and medical progress. It can respond to a major environmental change within months. Let us again refer to Table 1, our summary of official US DAR data by five-year periods since 1915. The necessity of including nuclear fallout in the index of environmental degradation is indicated by the following:

**TABLE 1: INFANT MORTALITY RATES IN THE US, 1915-1979**

Five Year period	Average Annual Rate per 1,000 Births	Annual % Rate of Change
1915-1919	14.4	-1.9
1920-1924	14.4	-1.7
1925-1929	27.6	-2.2
1930-1934	36.3	-2.7
1935-1939	41.6	-4.0
1940-1944	48.1	-3.2
1945-1949	48.1	-2.2
1950-1954	49.8	-4.9
1955-1959	41.6	-4.6
1960-1964	33.3	-2.5
1965-1969	28.4	-2.2
1970-1974	28.4	-2.2
1975-1979	28.4	-1.8

Source: Vital Statistics of the U.S., 1980, Vol. 8, Mortality, Part A, Section 2, Infant Mortality, page 1.

Continued from page 1

ing out of the long secular decline in the average annual IMR that occurred in the birth-100 years.

Who attention was first drawn to this anomalous change in the late nuclear-protection program. American physicians, including DAR, merely reflected the natural limits of medical technology and the possible exhaustion of the powers of antibiotics. This argument was called into question after the ban on atmospheric bomb testing by the monotonous resurgence of the IMR in the early 1950s. The decline in the US DAR, that there are such cities as Amersfoort and Yokohama today with IMR rates of the order of four or five, is against the current US DAR of 11. In Japan we are still far from reaching any "nuclear" IMR.

One can find the same trend at the Children's Disease Center in Amersfoort, where infant mortality rates have occurred in the period 1981 to 1984—when "the annual rate of decline has slowed to approximately one percent." In this period, the block of deaths has slowed to approximately 10 percent of the total number of deaths of children under five years of age.

23 years. (Table 1 shows that worldwide infant mortality rates have historically been most responsive to both economic and environmental changes. Average annual decline variations in response to progressive periods such as the early 1950s, the 1960s, and the 1970s.)

The Children's Disease Panel offers much evidence that these recent changes can be attributed to outbreaks in Federal health, nutrition, and service programs.

The hypothesis that emissions from nuclear power plants are causing the rising infant mortality rates for both white and black babies shall be explored below.

Most of the radiocivilian power reactors came on line in the seventies, particularly in 1974 and subsequent years. Some are and others are not. The following is a summary of the Reactors National Laboratory, Brookhaven National Laboratory, and the following is a summary of the last section of the Reactors National Laboratory.

Building these reactors in 1974-1980

Building these reactors	1974-1980	Total
Reactors	11,750	40,282
Personnel	25,779	113,719
Materials	25,779	113,719

This section investigates the stable conditions page 4.

Continued from page 1

**TABLE 2: AVERAGE ANNUAL MORTALITY RATES, 1965-80 AND 1975-82 BY STATE AND REGION**

STATE	1965-1970		1971-1974		1975-1980		1981-1982		TOTAL
	Rate	Rate	Rate	Rate	Rate	Rate	Rate		
Alabama	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
Alaska	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
Arizona	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
Arkansas	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
California	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
Colorado	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
Connecticut	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
Delaware	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
District of Columbia	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
Florida	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
Georgia	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
Hawaii	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
Idaho	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
Illinois	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
Indiana	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
Iowa	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
Kansas	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
Kentucky	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
Louisiana	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
Maine	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
Maryland	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
Massachusetts	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
Michigan	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
Minnesota	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
Mississippi	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
Missouri	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
Montana	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
Nebraska	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
Nevada	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
New Hampshire	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
New Jersey	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
New Mexico	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
New York	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
North Carolina	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
North Dakota	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
Ohio	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
Oklahoma	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
Oregon	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
Pennsylvania	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
Rhode Island	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
South Carolina	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
South Dakota	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
Tennessee	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
Texas	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
Utah	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
Vermont	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
Virginia	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
Washington	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
West Virginia	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
Wisconsin	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
Wyoming	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
USA	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2

tical relationship between the 354 military reactors in the years 1974-1981 and the civilian nuclear reactor mortality rates in the years 1975-1982 is statistically significant.

For the purpose of this inquiry, the contiguous states (including Alaska and Hawaii) are divided into two groups: nuclear states (those with power or military reactors) and non-nuclear states (those without). Actually, the nuclear distribution of reactors in the US is not uniform. Thirty-one states have nuclear reactors, and only 19 states can be regarded as non-nuclear. Small states, like the District of Columbia or Rhode Island, lying geographically between reactors in adjacent states are included in the nuclear group.

One definition of nuclear states (described by an article in Table 2) must necessarily include Washington and South Carolina, home of the Hanford and Savannah River military reactors. Exclusions from these reactors are not

reported by Brookhaven, and cannot be assumed to have reached peak levels in the late seventies as in the case of civilian power reactors. At this, Brookhaven's handling of small commercial reactors located at research institutions, waste sites, and large hospitals. Most of these can be found in the states designated in Table 2 as nuclear.

The years 1965-69 were chosen as the base period for the mortality rate study because of both these states, however, might have been affected by occupational radiation from underground uranium mines in the Nevada desert. These mines continued without interruption through the 1960s, but the Hanford and Savannah River military reactors, which were constructed today with an yet unknown public health consequences.

TABLE 3: SUMMARY OF CHANGES IN MORTALITY RATES, 1965-69, 1975-82, US, NUCLEAR AND NON-NUCLEAR STATES

	US STATES	NUCLEAR STATES	NON-NUCLEAR STATES
1965-69			
Total # Inland Deaths	40,195	31,039	9,156
Total # Live Births	178,4335	1,990,682	988,753
Average Annual IMR	22.510	22.180	23.794
1975-82			
Total # Inland Deaths	53,1192	74,5766	14,5426
Total # Live Births	1,9844	1,5742	4,1003
Average Annual IMR	26.811	25.196	21.660
1975-82			
Total # Cancer Deaths	154,9534	125,6809	29,2725
Average Annual Cancer Rate	157.44	161.40	143.44
1975-82			
Total # Inland Deaths	34,690	27,023	7,667
Total # Live Births	215,422	2,114,15	1,1443
Average Annual IMR	16.0994	12.8182	13.900
1975-82			
Total # of Deaths	154,9794	121,5782	33,4012
Average Annual Population	220,93	172,840	47,093
Total # Cancer Deaths	169.56	125.27	44.29
Average Annual Cancer Rate	319,087	254,141	206,346
1975-82			
Rate of Change, 1975-82/1965-69	0.993	0.6048	0.5671
Total Mortality Rate	0.152	0.2169	0.1515
Cancer Mortality Rate	1.1411	1.1616	1.1242
Annual Percent Rates of Change	-4.04	-3.95	-4.33
Total Mortality Rate	-0.83	-0.83	-0.86
Cancer Mortality Rate	1.41	1.48	1.24

assume that the unexpected public health problems may be of the same order of magnitude as those of the United States.

While the total mortality rates that are steadily declining, cancer mortality rates have been rising for several decades. The causes of this increase involve a complex mix of environmental and demographic factors for which total cancer mortality rates, unadjusted for sex, race, or age, require considerable further research.

**Differences in Mortality**

What do these results signify? First, the small differences between the mortality changes of the two groups of states cannot be attributed to chance. On the other hand, can these differences be attributed to different nuclear emissions levels? There is no clearly defined threshold of cancer mortality rates in the so-called nuclear states to have of a significant mortality that exceeds that of non-nuclear states. This is especially true for each state for the three different mortality rates shown in Table 2. It can be said that a state does worse than the nation if the rate in its cancer mortality rates was greater than that of the nation or if 30 nuclear states have 90 approximately as measured against the national percentage; all the 19 nuclear states in the nation have 57.

While these differences appear small, in Table 4 they tend to be distributed differently. The national rates of cancer mortality rates would have had the nuclear states if they had had the national percentage change in mortality rates experienced by the non-nuclear states. A surprisingly similar difference is observed between the two groups of states in respect to cancer mortality. While the cancer mortality rate in the nuclear states was somewhat higher in the nation in the early period, it was considerably higher in the later period.

At first glance, this appears surprising because we would expect at least a five-fold increase in cancer mortality from the year of construction of the first military reactor in the 1950s to the year of the 1975-82 period. The observed lead to advanced cancer mortality levels in the nuclear states. The observed cancer rates in the late seventies may reflect the much higher but earlier and yet higher transition levels from military reactors. This may also reflect the emissions from civilian reactors in the 1970-'80 years.

Indeed the impact on public health of military reactor emissions deserves separate study (See from page box) both because the time period of operation coincided with the period of the highest than that of civilian reactors. However, so much is not known about the treatment and disposal of the huge stockpiles of military waste, we must

TABLE 4: CALCULATION OF ANNUAL EXCESS MORTALITY IN NUCLEAR STATES 1975-82

	NUCLEAR STATES	NON-NUCLEAR STATES
1965-69		
Average Annual IMR	22.18	23.79
(Deaths Per 1000 Live Births)		
Average Annual IMR	984.96	916.60
(Deaths Per 100,000)		
Average Annual Cancer Rate	161.40	142.44
1975-82		
Average Annual IMR	12.58	13.44
(Deaths Per 1000 Live Births)		
Average Annual Mortality Rate	974.09	835.45
(Deaths Per 100,000)		
Average Annual Cancer Rate	181.45	140.10
1975-82		
Actual Avg. Annual Live Births	33853	11708
Actual Avg. Annual Live Deaths	2523462	870973
Actual Avg. Annual Cancer Deaths	151977	41148
Estimated Avg. Annual Live Births	32043	11708
Estimated Avg. Annual Live Deaths	31740	11708
Estimated Avg. Annual Cancer Deaths	151070	41148
Excess Annual Live Births	313611	—
Excess Annual Live Deaths	2113	—
Excess Annual Cancer Deaths	8957	—
Excess Annual Total Deaths	6312	—

In this table we have calculated the "excess" in mortality in the nuclear states as the difference in the number of expected deaths if these states had the same change in mortality rate 1965-69 as was experienced by the non-nuclear states. These calculations are based on the assumption that the observed mortality rate in the 1975-82 period, the results can be given by the formula:

$$O - E = \frac{O - E}{N} \times \frac{N}{N} = \frac{O - E}{N} \times N$$

where  $O$  and  $E$  are the observed and expected mortality rates expressed in six decimals as a percentage basis, and  $N$  represents the number of deaths in the 1975-82 period. The results can be calculated as follows:

	NUCLEAR STATES	NON-NUCLEAR STATES
1. $O - E$	0.042	0.00793
2. $\frac{O - E}{N}$	0.0138	0.0014
3. $\frac{O - E}{N} \times N$	0.008	0.0003
4. $\frac{O - E}{N} \times N$	2.72	1.01
5. $\frac{O - E}{N} \times N$	0.04	0.008
6. $\frac{O - E}{N} \times N$	0.04	0.008

The difference in the number of expected deaths in the nuclear states as the difference in the number of expected deaths if these states had the same change in mortality rate 1965-69 as was experienced by the non-nuclear states. These calculations are based on the assumption that the observed mortality rate in the 1975-82 period, the results can be given by the formula:

We do not have emissions data as yet for military reactors, which, in any case, were in continuous operation in both the time periods we are studying. We can, however, estimate our remaining counts that make up the United States.

from a nuclear county for the 50 civilian power reactors for which we do have emissions data for recent years. Some 175 counties have been chosen as a first step to finding nuclear counties with the greatest potential for wind patterns in the US. (For example, it has been suggested that such wind patterns account for the severity of acid rain in the Northeastern region of the US.) This too is a highly subjective definition. The counties are chosen by means of a computer program which searches for counties which nearby residents can be affected by wind patterns in the US. (For example, for example, rainfall affecting adjacent counties probably determines the ultimate damage to the county.)

**TABLE 5: NUCLEAR COUNTIES: SUMMARY OF CHANGES IN PUBLIC HEALTH MEASURES, 1965-69 AND 1975-81**

1965-69	NUCLEAR COUNTIES				1975-81
	PHYLIC WATER REACTORS	ALL REACTORS	NUCLEAR COUNTIES	ALL COUNTIES	
Number of Counties	71	110	175	310	310
Number of Births	137524	149674	279486	1789261	1789261
Number of Infant Deaths	3024	3268	6723	34823	6674
IM (Deaths per 1000 Births)	21.9	21.8	24.3	21.7	21.7
Number of Fetal Deaths	1918	2126	3928	2794	2794
FDR (Deaths per 1000 Births)	14.0	14.2	14.1	15.7	15.3
Population, 1970	165927	174863	310724	1723519	3130463
Number of Deaths	6905	7294	13943	86827	139468
IM (Deaths per 1000 Persons)	4.2	4.1	4.5	5.0	4.5
Number of Cancer Deaths	11249	12672	23743	111841	153294
CR (Deaths per 100,000 Persons)	161.6	164.3	158.4	158.9	162.9
1975-81	2,282	1,182	3,348	1,182	1,182
Change Per Capita	1.80	0.27	1.40	0.00	0.00
Number of Births	189882	278316	297294	231234	274828
Number of Infant Deaths	2631	2924	5618	3487	3487
IM (Deaths per 1000 Births)	13.9	10.5	18.9	15.1	12.7
Number of Fetal Deaths	12711	12828	24266	20675	23279
FDR (Deaths per 1000 Births)	69.3	46.1	81.3	89.0	85.1
Population, 1980	187515	289943	318642	1923927	2654986
Number of Deaths	10774	12195	23897	116191	154114
IM (Deaths per 1000 Persons)	5.8	4.2	7.5	6.0	5.8
Number of Cancer Deaths	22976	29143	49138	270128	320874
CR (Deaths per 100,000 Persons)	310.3	179.1	155.3	139.9	121.7
1965-69	6.25	6.59	6.11	6.59	6.59
1975-81	6.40	6.53	6.45	6.53	6.53
1980	6.519	6.574	6.542	6.572	6.572
CR	1.160	1.238	1.187	1.156	1.156

Infant death data relates to the period 1975-81. As of this writing, IMC data are available

more detailed, properly flocculated study would, of course, try to account for other environmental factors and allow for adjustments for changes in age, sex, and race required by proper localization. If the divergence between the two rates were significant, it would indicate the main source of these findings.

It is clear that emissions in the nuclear counties have had an adverse impact on mortality, particularly on the very young and very old. It will be noted that the mortality rate (IMC) has had the smallest likelihood of being due to chance. This rate mainly reflects the deaths of persons over 65 years of age. But infant and fetal deaths are almost

**TABLE 6: THE STATISTICAL SIGNIFICANCE OF CHANGING MORTALITY RATES**

IMR	FDR	IMC	CR	
1. Mortality Rate, Nuclear Counties 1965-69	0.0224	0.01436	0.00893	0.01156
2. Ratio of Change in Nonnuclear Counties	0.388	0.624	0.915	1.194
3. Expected Mortality Rate, Nuclear Counties, 1975-81 (1.8 x 2)	0.01395	0.00954	0.00323	0.01756
4. Observed Mortality Rate, Nuclear Counties, 1975-81	0.01353	0.00816	0.00413	0.01111
5. Expected Mortality Rate, Nuclear Counties, 1975-81	0.00987	0.00254	0.00028	0.00304
6. Standard Deviations of the Differences	0.17	0.89	2.14	0.43
7. Chance Probability	0.2307	0.1887	0.1613	0.3579

In this table, we are using the difference between a mortality rate registered in the combined group of 175 nuclear counties in 1975-81 with that which would have been expected if those counties had the same change in mortality experienced by all non-nuclear counties. The latter group (non-nuclear counties) has their own change in mortality rate, which is expected to be the same as that of the nuclear counties. For the sake of precision, we have expressed all rates as a percentage based on the combined population of the two groups. The expected mortality rate for the nuclear counties in 1975-81 was calculated by multiplying the mortality rate of the non-nuclear counties in 1975-81 by the ratio of the population of the nuclear counties to the total population of the two groups. The observed mortality rate is the mortality rate registered in the nuclear counties in 1975-81. The difference between the "expected" rate and the observed rate is the difference between the two rates. The standard deviation of the difference is the square root of the sum of the squares of the standard deviations of the two rates.

$$O - E = \sqrt{\frac{O^2}{n} + \frac{E^2}{n}}$$

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University of Pittsburgh

June 6, 1989

Hearing Officer  
DOE-SEIS Project  
P. O. Box 5400  
Albuquerque, NM 87115

Sir:

Please enter the attached comment relating to the Special Environmental Impact Statement for the WJPP site into the public record of the June 15-16 public hearings.

Sincerely yours,

*Ernest J. Sternglass*  
Ernest J. Sternglass, Ph.D.  
Professor Emeritus of  
Radiological Physics

Home address:  
170 West End Avenue  
Apt. 27H  
New York, NY 10023

PITTSBURGH, PA 15261 (412) 647-3400

Statement of Dr. Ernest J. Sternglass

My name is Dr. Ernest J. Sternglass and I am Professor Emeritus of Radiological Physics at the University of Pittsburgh School of Medicine where I have carried out extensive research in the area of radiological instrumentation and the biological effects of low-level radiation since 1967. I have published two books and a series of scientific papers covering my research works.

The purpose of my testimony is to explain why it would be dangerous to proceed with the proposed plan discussed in the Supplementary Environmental Impact Statement (SEIS) to begin immediate employment of radioactive and mixed wastes at the Waste Isolation Pilot Plant (WIPP) facility. Others have commented on the pathways by which transuranic (TRU) waste might be released into the outer environment, exposing humans, and of course all other forms of life, to the waste. I would like to focus my comments on the health effects of such radioactive releases.

The principle reason is that existing EPA radiation standards are grossly inadequate to protect the health of the workers and the public from low-levels of ingested or inhaled radioactive substances of all types, but particularly those man-made isotopes that are produced in the course of the manufacture of nuclear weapons, such as strontium-90, plutonium, and other transuranic elements.

This has become evident only in the last fifteen to twenty years when unexpected large increases in childhood leukemia, cancer, congenital defects, premature births, as well as infant and total mortality of all ages, was found to be associated with the release of nuclear weapons fallout and transuranic waste.

This has come to light only in recent decades as discussed in detail in my book Secret Fallout published by McGraw Hill in 1981, and also summarized in the statement submitted in this WIPP hearing by Dr. Jay Gould. In the course of the last 15 years a new discovery was made that allows one to understand why such unexpectedly large effects

1. See also my attached article "The Implications of Chernobyl for Human Health." International Journal of Biosocial Research. Volume 8(1): 7-36, 1986.

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of low-dose radiation that enter the body through he drinking water, the air, and the diet occurred at rates thousands of times greater than expected on the basis of our earlier experience with medical X-rays and the studies of the Hiroshima-Nagasaki survivors.

It now appears that these unexpected health effects were produced by an indirect chemically-mediated action of radiation, whereby ingested fission products promote the formation of "free radicals" that damage the immune system. This mechanism was discovered in 1972 by Abram Petkau.<sup>2</sup>

Dr. Abram Petkau is a Canadian physician and biophysicist who currently manages the Medical Biophysics Branch of the Whiteshell Nuclear Research Establishment, located in Pinawa, Manitoba. While studying the action of radiation on cell membranes in 1971, Dr. Petkau conducted an experiment never done before. He added a small amount of radioactive sodium-22 to water containing model lipid membranes extracted from fresh beef brain. To his surprise, the membranes burst from exposure to just one "rad" (a measure of the amount of radiation absorbed) over a long period of time. Conversely, Dr. Petkau had previously found that 3,500 rads were required to break the cell membrane when X-rays were applied for a short period of only a few minutes. He concluded that the longer the exposure, the smaller the dose needed to damage cells.

After several more experiments, he discovered the cause of this surprising effect from low-level radiation. The irradiation process was liberating electrons, which were then captured by the dissolved oxygen in the water, forming a toxic negative ion known as a free-radical molecule. The negatively charged free-radical molecule is attracted to the chemically polarized cell membrane. This causes a chemical chain reaction that dissolves the lipid molecules, which are the principal structural components of all membranes in cells. The wounded and leaking cell, if unable to repair the damage, soon dies. If the free radicals are formed near the genetic material of the cell nucleus, the damaged cell may survive, but in mutated form. Subsequent research by Dr. Petkau and other scientists ultimately demonstrated that this process occurs even at background

2. A. Petkau (1972), "Effect of  $^{22}\text{Na}$  on a phospholipid membrane," *Health Physics*, 22:239. See also A. Petkau (1980), "A Radiation carcinogenesis from a membrane perspective," *Acta Physiologica Scandinavica*, Suppl. 492:81-90.

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radiation levels.<sup>3</sup> At high levels of radiation, Petkau found less cellular damage from free-radical production per unit of energy absorbed than at low levels of radiation.

Free radicals are so dangerous to living systems because they form in water, and water comprises 80 percent of a cell. Free radicals not only destroy healthy cells, but also affect normal cell function in a way believed to speed the aging process.

Nature has provided some protection from free radicals, probably because they are naturally produced by the oxygen metabolism within the cell. The protector, superoxide dismutase, quenches the chain reaction.<sup>4</sup>

It is now believed that superoxide dismutase is found in all cells which use oxygen in their life processes. For example, human tissues that contain naturally high levels of superoxide dismutase, such as the brain, liver, thyroid, and pituitary, are more resistant to the effects of radiation than tissues low in superoxide dismutase content, such as the spleen and bone marrow. Apparently this enzyme evolved to protect biological systems from superoxide, or free-radical, damage caused by ultraviolet light, background radiation, and the result of normal energy production in the cell. However, radiation which is produced by fission products and other radioactive isotopes such as the

3. A. Petkau and M.S. Chelack (1976), "Radioprotective effect of superoxide dismutase on model phospholipid membranes," *Biochimica et Biophysica Acta*, 433:445-456. See also A. Petkau, E. Kelly, M.S. Chelack, S.D. Pleskach, C. Barfoot, and B.C. Meeker (1975), "Radioprotection of bone marrow stem cells by superoxide dismutase," *Biochemical and Biophysical Research Communications*, 67, 3:1167-1174, A. Petkau, M.S. Chelack and S.D. Pleskach (1976), "Protection of post-irradiated mice by superoxide dismutase," *International Journal of Radiation Biology*, 29, 2:297-299, A. Petkau (1978), "Radiation protection by superoxide dismutase," *Photochemistry and Photobiology*, 28, 765-774, A. Petkau (1985), "Protection and repair of irradiated membranes," in *Free Radicals, Aging, and Degenerative Diseases*, Alan R. Liss, Inc., pp. 481-508, and A. Petkau (1987), "Role of superoxide dismutase in modification of radiation injury," *British Journal of Cancer*, 55, Suppl. VIII, 87-95.

4. Irwin Fridovich (1978), "The biology of oxygen radicals: the superoxide radical is an agent of oxygen toxicity; superoxide dismutases provide an important defense," *Science*, 201, 875-880.

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transuranic elements ingested through the food chain, or applied externally, can produce free radicals than the body can deactivate (or "dismutate") resulting in gross damage that may be irreparable. Furthermore, Dr. Petkau and others have found that only 10 to 20 millirads will destroy a cell membrane, in the absence of the protective superoxide dismutase.

The free-radical reaction can be quenched in another way. At higher intensities of radiation, the free-radicals become so concentrated that they react to deactivate each other. If this were not so medical X-rays would cause far greater biological damage than they do. A simple analogy can explain this phenomenon. Think of the free radicals as individuals in a crowded room. A fire starts and everyone tries to get out at the same time. As a result, everyone bumps into each other and very few escape. If only a few people are in the room when the fire occurs, however, everyone leaves easily through the door. Escape is very efficient.

Thus, chronic exposure to low-level radiation produces only a few free radicals at a time that can reach and penetrate the membranes of blood cells with great efficiency, thus damaging the integrity of the entire immune system with very little radiation absorbed. In contrast, short, intense exposures to radiation, as with medical X-rays, form so many free radicals that they bump into each other and become harmless ordinary oxygen molecules. Short exposures thus produce much less memory damage than the same dose given slowly over a period of days, months, or years. However, existing radiation standards are based on our experience with short, high-dose rate exposures such as from medical X-rays or the direct flash of gamma rays from the atomic bomb detonations.

More recently, Charles Waldren and co-researchers have found that when a single human chromosome is placed in a hybrid cell and irradiated, the ionizing radiation produces mutations much more efficiently at low than at high doses, as is the case of cell membrane damage.<sup>5</sup> They found that very low levels of ionizing radiation produce mutations 200 times more efficiently than the conventional method of using high dose-rates, or brief bursts from X-ray machines. They found that the dose-response curve exhibits a downward

5. Charles Waldren, Laura Correll, Marguerite A. Sogrier and Theodore I. Buck (1986). "Measurement of low levels of X-ray mutagenesis in relation to human disease." The Proceedings of the National Academy of Sciences, 83, 4839-4843.

convexity (logarithmic or supra-linear relationship) in mammalian cells, so that the mutational efficiency of X-radiation is maximal at low doses, exactly was found by Petkau for free-radical mediated biological damage. Thus, their findings contradict the conventional scientific dogma that the dose-response curve is linear, and that a straight line can be used to estimate low-dose effects from studies of high doses, which is the basis of our existing radiation risk estimates.

A protracted exposure to ingested beta emitters can be 1,000 times more harmful to cell membranes than a brief external exposure to X-rays, because DNA repairs itself relatively efficiently after an X-ray hit compared to the damage caused by oxygen free-radicals at very low doses.<sup>6</sup> This type of exposure may thus account for the jump observed in mortality immediately after every nuclear plant accident, or after fallout from atmospheric bomb tests.

Strontium-90 and many of the transuranic elements are chemically similar to calcium and, therefore, concentrates in the bone of the developing infant, child, and adolescent. Once in the bone, these elements irradiate the marrow where the cells of the immune system originate at a low rate over a period of many years. As first discovered by Stokke and his co-workers at the Oslo Cancer Hospital in 1968, extremely small doses of only 10 to 20 millirads of protracted dose from internal emitters can produce visible damage to the blood forming cells of the bone marrow, probably via the production of free-radical oxygen.<sup>7</sup> This can lead to the development of bone cancer, leukemia and other malignant neoplasms both directly by damaging the genes, and indirectly by lowering the ability of the immune system to detect and destroy cancer cells.<sup>8</sup>

An accumulation of radionuclides from the combination of growing uptake and slow excretion, and the consequent mortality also appear to involve deaths from heart diseases, as well as from cancers and other causes. Free-radical oxygen, produced most efficiently by internal beta emitters such as strontium-90, may be a factor in coronary heart disease. The theory is that the free radicals oxidize the

6. T. Stokke, P. Oftedal, and A. Pappas (1968), "Effects of small doses of Strontium-90 on the rat bone marrow," *Acta Radiologica*, 7:321-329.

7. *Ibid.*

8. Peter A. Cerutti (1985), "Prooxidant states and tumor production," *Science*, 227, 375-381.



low-density cholesterol and cause it to become more readily deposited in arteries, thus blocking the flow of blood and inducing heart attacks.<sup>9</sup>

To summarize, Betheu and others have demonstrated that the response per additional dose of radiation is greater at low levels of intensity than at higher levels. The correlations of health effects with exposure to ingested low-level radiation that are discussed in detail by Dr. Gould (WIPP) can thus be explained by the indirect action of radiation via free radicals damaging the normal function of the hormonal and immune systems of humans and animals alike. Thus, the observed significant excess deaths could be the result of exposures to fission products and other radioactive elements such as plutonium, Strontium-90 and Iodine-131 in food, milk, water and air, according to this biochemical mechanism.

These new findings imply that releases of radioactive materials from a nuclear waste storage site are thousands of times more hazardous biologically than assumed on the basis of all existing standards relating to permissible releases to the environment. All such releases result in long term internal low dose-rate exposures of critical hormone-producing organs and the bone marrow over many weeks, months or years.

These standards are all based on the assumption that it is valid to extrapolate from high doses and short exposures such as received from the atomic bomb detonation at Hiroshima and Nagasaki to the very much lower doses and chronic exposures associated with radioactive chemicals released into the food supply, the water and the air. As the BEIR for Waste Isolation Pilot Plant points out, "cancer data from the Japanese survivors of nuclear detonations in World War II are used in most of the analyses in the BEIR III report (BEIR, 5-25)." Using the Hiroshima-Nagasaki data to arrive at health risk assessments, however, ignores the more significant danger of protracted internal radioactive exposure, especially in low doses.

Recent laboratory and epidemiological data cited above show that the dose response curve is not linear down to the low doses of environmental radiation, and that instead it rises much more rapidly for the small doses so that the

9. See Jane E. Brody (1988), "Natural chemicals now called major cause of disease," *The New York Times*, April 26, and Jean L. Marx (1987), "Oxygen free radicals linked to many diseases," *Science*, 235, 529-531.

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calculated risks of low-dose exposures has been vastly underestimated.

Thus even a small revision of the existing EPA standards that may be proposed to take account of errors in the doses estimated to have been received by the atomic bomb survivors would not be adequate to protect public health.

Because this crucial matter is currently under review and open for public comment, it will not be resolved by the end of 1989, when the Department of Energy proposes to begin introducing radioactive wastes into the WIPP facility according to the proposed plan. It would therefore be impossible to meet the requirements of such existing environmental protection laws such as the RCRA which mandates that hazardous wastes slated for land disposal be treated in such a manner as to "minimize the present and future threat to health and the environment."

Therefore, even the introduction of only ten percent of the total capacity for radiation waste storage as presently proposed would constitute a dangerous action from the point of view of public health, especially in view of the existing problems of water seepage that could endanger the underground water supply and could contaminate local rivers for thousands of years. This could also be the case for potential transportation accidents. All of which now appear to involve much greater health and socio-economic impacts than had been anticipated when the facility was originally designed.

I therefore urge that no precipitate action be taken at this time to transport any radioactive and mixed wastes to the WIPP site, and that instead steps be taken to provide carefully monitored retrievable above-ground storage for the existing transuranic waste at their present locations until all the existing unresolved questions relating to the impact of low-level radiation on human health and the environment can be resolved as required by law.

7.3.5.4.3  
7.13.1-7  
7.14-10

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### The Implications of Chernobyl for Human Health

Ernest J. Sternglass, Ph.D.  
Professor Emeritus of Radiological Physics  
University of Pittsburgh School of Medicine  
Department of Radiology  
Volume 8(1): 7-36, 1986

Hilb Sablin  
Rt. 2, Box 303-S  
Santa Fe, N.M. 87505

Chairman: Santa Fe-Bukhara Sister City Project  
Peace with Justice Taskforce of the Interfaith Council  
of Santa Fe

There has been much cogent and valid testimony given here today on why transuranic nuclear waste should not, at this time, be deposited at the WIPP site, and why it should not be transported from around the country to the WIPP site. I would rather, therefore take a different tack, based on personal experience, which augments, backs up much of what has been said here today.

In my capacity as chair of the Soviet-American Friendship Society of New Mexico and the Santa Fe-Bukhara Sister City Project, I have had the opportunity to travel extensively in the Soviet Union, having made six trips since 1982. I have seen the opening up of that country, under Perestroika, to a point where the citizenry and scientific community talk with relative openness about nuclear problems. I know some talk some six months after the Chernobyl disaster and had the opportunity to talk with women whose children had been evacuated at the time of the disaster. I remember the bus I was travelling in being checked by a geiger counter, as I ~~was~~ <sup>approached</sup>.

I have just returned, less than two weeks ago, from Moscow. While there as well as in Leningrad had the opportunity to talk at length with a young engineer who worked in a nuclear power plant, as well as with a number of young "green" environmental activists. They all had the same message for me to bring back to the United States: the Soviets are producing large amounts of nuclear waste. Some of it is being reprocessed but much of it is being stored temporarily above ground in what they described as grass containers.

There is growing concern and discussion in the Soviet Union about the problems related to the storage of nuclear waste - and a great deal of mistrust of what the government is telling the people. I felt like I was at home. There are apparently unsuccessful attempts at underground storage. After Chernobyl an event which really scarred the collective psyches of the Soviet people, there are protests aimed at closing down existing nuclear power plants - or preventing the same from going on line. A tremendous revelation - coming from the USSR in 1989.

The message these good folks gave me was to go home and tell my friends and fellow workers in the vineyards that it was time that our two peoples came together in a massive scientific effort to resolve what to do with nuclear waste - a conclusive resolution to the problem - not just digging holes in the ground to stuff the foul materials into.

Now, changing to the American scene. You know I feel like I've been this route before. As a fellow rider with the POWER (People Opposed to WASTE ENERGY REPOSITION), I remember earlier in the '80's sitting in on DOE "tell all" meetings in places like Hereford, Texas, telling the good folks that putting a high level nuclear waste site a half mile

under the best farm land in the state wouldn't hurt a thing. Not to worry about drilling a shaft down through the Ogallala Acquirer (an underground body of fossil water that reached out under eight states - not a chance of polluting this vital source of water. Well, farmers didn't buy that hogwash and raised hell. And so now we are told by the DOE that the Deaf Smith County, in the Panhandle is not suitable for a high level waste site. Chalk up one for sanity.

Grace Wojtabal, in her telling book BLESSED ASSURANCE tells about a certain DOE official performing a typical shell game ~~game~~ at a local hearing in the Panhandle. A farmer got and asked him why nuclear power plants continued to be established when there was no way of disposing of the waste. His reply: "This is a widespread social problem - we take care of our immediate needs and don't give thought to the future. Ever since the industrial revolution began, we've been sweeping our refuse, our toxic garbage under the rug. Just now we're confronting the result." A PERFECT GLOSS OVER REPLY WHICH DESERVES A GARBAGE BRDOM AMARD.

Moving on to Amarillo, some 40 miles distant and the home of Pantex, the final assembly and disassembly plant for all nuclear warheads, an installation which provides about 25% of Amarillo's economic base through supplies, services, payroll, purchases and sales tax. The good folks of Amarillo defend the Pantex plant with an Old Testament vengeance. They say that Amarillo is a fine place to raise one's children, while also admitting, (22 %) there is a good chance of an accidental nuclear explosion at Pantex; (37%) feel there is a good chance of an accident during transport of radio active material; 84% feel that Pantex is a prime target for Soviet nuclear warheads. Here we have a classic example of an END TIME mentality - the same mentality that DOE continues to express, at other people's expense.

READ A PASSAGE FROM BLESSED ASSURANCE.....True, we have just about run out of daylight, if we go the way of DOE, pell mell toward a September 1989 deadline.....a hazardous plunge which breaks or potential disaster.

Better to let the waste sit at its present sites while the same scientific minds that gave us the bomb perform the research for the ultimate disposal/destruction/neutralization of this most toxic of waste materials that has come to haunt our generation.

RIGHT HAND, LEFT HAND 317  
 very that exists seems primarily on the level of competing special interest groups. Town and country interests are in open conflict. The city commissions of nearby Canyon, Herford, and Amarillo are not unwelcoming to the Department of Energy representatives. Real estate developers are positively friendly, since, if the repository is to be built here, there will be a spectacular, although short-term, boom in housing.

On the question of the siting of a nuclear waste repository in the Texas Panhandle, economic issues are paramount, with questions of safety running a close second. Perhaps the debate will continue to be confined to matters private and local: my home area, or my land, my family's health, my crops, my cattle, my livelihood. But, perhaps, it will move gradually into questions of what we want for others on this earth, as well. There are a few signs of this, of larger interests finding voice.

In 1985, Marianne McNell, a local poet, conducts a campaign, in verse and prose, for a proper appreciation of the Ogallala aquifer. The source of water for Deaf Smith County farmers, the Ogallala is also the largest contour underground water storage formation in the nation, extending throughout the Midwest farm belt. Eight states are involved: Texas, New Mexico, Colorado, Wyoming, South Dakota, Nebraska, Kansas, and Oklahoma. Contamination of the water in Deaf Smith County would endanger these farm areas as well.

There is a hint of a wider perspective, also, in recent Department of Energy hearings, where farmers have begun to raise the question: What are the proper uses of any agricultural land? And at a farmers' mass on the Straffus farm between Herford and Vega on Acazonan Thursday, May 16, 1985, the question of good stewardship - of earth, water, and sky - becomes, at least for the moment of Bishop Marthinsen's homily, central.

The mass is celebrated in a large shed, on an improvised altar of planks over stacked bales of hay. It begins in a twilight of rain and ends in a muted dawn radiance. Good symbolism, but no one presses it. In point of fact, the sun will soon be down.

Over supper, sitting at the long tables decorated with baskets

drilling sites, which even more devastating adjoining the drilling site is offered. he responses of local tion is heard. There is Hicks insists that he tory in his home coming behind the scenes to the editor of the

er of high level administration I have been advised that for several more years. fore the Panhandle is re- s, and we must continue

ill continue to do all he state governorship. Pick- waste dump in his home is simply one of political ers involved, simply dance

gging them. 4, a farmer rises to protest: "The first time was sited his land for exper- t. Now the Department of illing on his land. It is the into his personal life that

consensus, and the contro-

218 BLESSED ASSURANCE

of still-green winter wheat, the nuclear waste issue weaves in and out of the conversation. The Straffs farm sits adjacent to an exploratory drilling site. The subject of Panter comes up of itself. The authorization for the munging of industrial and military nuclear wastes which President Reagan has just signed into law, has brought the question of military wastes — and Panter — unavoidably into the picture. There is a momentary linkage, a pause, the conversation shifts ground. The sun is setting, "We've about run out of daylight," as they say in these parts, and we gaze out to catch the last of it.

I

BOUND

B: Mammal Checklist from: Flan an:

- 1. Virginia Opossum 1
- 2. Eastern Cottontail 2
- 3. Eastern Mole 3
- 4. Cave Bat 3
- 5. Big Brown Bat 3
- 6. Raccoon 3
- 7. Black-legged Ferret 3
- 8. Spotted Skunk 3
- 9. Badger 3
- 10. Mink 3
- 11. Badger 3
- 12. Swift Fox — Gray Fox 3
- 13. Red Fox 4
- 14. Bobcat 4
- 15. Mountain Lion 4
- 16. White-tailed Deer 4
- 17. White-tailed Deer 4
- 18. Pileated Squirrel 4
- 19. Poughon Antelope 4
- 20. Island Ground Squirrel 4
- 21. Woodchuck 4
- 22. Marshy Prairie Dog 4
- 23. Fox Squirrel 4
- 24. Rock Squirrel 4
- 25. Prairie Dog 4
- 26. Cottontail 4
- 27. Charming Land Pocket Gopher 4
- 28. Field Squirrel 4
- 29. Field Squirrel 4

\*Not usually found on the plain site  
— Environmental Assessment: Forest Plan  
and Research & Development Activities

Santa Fe Preparatory School

My name is Jean Kithil and I am representing the Santa Fe Preparatory School.

As a 10th grade health teacher, I led our class in an educational project on WIPP in which we invited several speakers to visit. The EEC Speaker, Dr. Anthony Gallegos provided us with unbiased scientific information with which to weigh the information given us by the DOE on one side and the CCMS on the other. We were further helped in our confusion by our science teacher Dr. Jay Shelton. At the end of our 2 month project we stated our concerns in a letter to Mayor Sam Mick. It was signed by our headmaster, Stephen M. Machen, and 170 members of our school community.

I would like to emphasize that our school's position is not politically or economically motivated but comes from a genuine worry that the WIPP opening is being rushed, and our health and environment will suffer the consequences.

This now is our statement:

### Santa Fe Preparatory School

June 15, 1989

DOE/SRIS  
P. O. Box 5400  
Albuquerque, NM 87115

The Santa Fe Preparatory School is concerned with the health and safety of present and future generations of New Mexicans, if the WIPP does not meet the new EPA standards prior to storage of waste.

Specifically, we request your consideration of the following eight areas:

1. We need safe, improved roads, including metro-politan bypasses, ~~before SHIPPING BEGINS.~~
2. We need safe drivers who have passed special requirements for driving trucks with nuclear waste, and we need a firm policy that waste shipments will be halted during hazardous driving conditions. We cannot afford the human errors that were recently demonstrated in Prince William Sound in Alaska!
3. We need safe containers--Trupacts must comply with Nuclear Regulatory Commission standards before shipping begins.
4. We need properly trained first-response people equipped for the worst-case scenario. They must know how to deal with all the hazardous wastes that will be shipped--and they must be able to identify the contents of Trupacts quickly and accurately.
5. We need to know if a detailed plan exists to retrieve the waste, if the repository is unsatisfactory after 5 years. This may be hard to do since the salt caverns are collapsing at a faster rate than originally computed.
6. We need to know if indeed WIPP will be closed in 25 years--or will a decision be made to add more waste?
7. We hope that experimentation and testing will occur before the shipments to WIPP begin. Is the site safe even though there is brine seepage? What gases will build up with radioactive waste?

1101 Camino de la Cruz Blanca Santa Fe, New Mexico 87501 (505) 965-1829

9. As for the distant future: last month human skeletons dating from less than 100 years ago were found near Santuario de Guadalupe. If that burial site was unknown to us, how can mankind remember the location and hazardous nature of WIPP thousands of years into the future?

Too many concerns remain unanswered. The DOE safety record has not provided much comfort to the citizens of Washington, Idaho, South Carolina, Colorado, and many more locations such as Los Alamos where highly poisonous nuclear waste is working its way into the water table and atmosphere.

The DOE needs to work hard to gain our trust. DOE needs to be such more careful than in the past. We need a series of legal checks and balances which will insure maximum safety, from an Agency which up to now has been known only for its single-minded attention to building nuclear weapons, regardless of environmental destruction.

We, the members of the Santa Fe Preparatory School Community, would like to convey forcefully our concerns to DOE, so that you can represent our best interests in reaching a feasible long-range solution to nuclear waste. We do not want WIPP to open until it is scientifically safe. Better yet, we would hope that an alternative to burial of nuclear waste is discovered.

Sincerely,

SANTA FE PREPARATORY SCHOOL  
FACULTY AND STUDENTS

*Stephen W. Machen*  
Stephen W. Machen  
Headmaster

7.12.11-1

3.1-2  
3.1-10

3.1-2

5.1.1-1

5.1-2  
5.4-2

7.8.5-2  
7.8.6-1  
7.11-4

13-JUN-89; EX-00322, PAGE 4 OF 27

To: DOE  
New Mexican Valley  
Editorial  
8 copies  
7 envelopes

Benjamin  
Dominick  
Richardson  
3950 Old Santa Fe Trail  
Santa Fe, NM 87505  
ME: 4, 1589

TO DEPARTMENT OF ENERGY

Dear Sir or Madam,

I am a sophomore at Santa Fe Preparatory School in Santa Fe, New Mexico. Since Christmas, my health class has been working on a project concerning the Waste Isolation Pilot Project to be located in my state. At first we were quite angry and frightened when we thought about nuclear waste coming through our city and being buried for 240,000 years. After much research, however, we have finally focused our opinions and views calmly.

I have listened to the Concerned Citizens for Nuclear Safety, and I do not agree entirely with them. They are beyond "concern," moving into the realm of radicalism. They base their opinions on emotions rather than facts.

On the other hand, I do not condone WIPP as it stands now. I am unable to understand it because I am not getting facts, only confused reports. I can understand the CCNS emotions, because they also are without accurate data. I have become greatly suspicious, which I would not be if the DOE stopped operating covertly in my backyard. All in all, I am extremely confused, as are many of my classmates.

This confusion proves that WIPP is going ahead too quickly. The CCNS wants to stop it dead, the DOE wants to speed it up. However, I know that WIPP is not safe. How can even the EPA account for the minimum ten thousand years the waste will exist? Surely somebody will dig or drill in the area, because the records will be lost. The warning signs could be taken as a superstitious curse. It is inevitable that somehow the waste will be disturbed.

3.2-1

4.1-3

13-JUN-89; EX-00322, PAGE 5 OF 27

I am not fully opposed to WIPP, but I implore you to slow it down! Only when it is fully researched will it be safe. Obviously the reason the public is kept in the dark is that the project is not completely secure. I think that if the DOE spoke to the public, they would gain more support, but first the DOE must have something good to say. Thus, it is necessary to research and make the project safe for thousands of years. Also, please hold a town meeting of some sort to inform the citizens of Santa Fe.

Again, please think this project through. Consider all possibilities, and I am sure you will find something wrong with your plans. Remedy this error, inform the public, review other options, get EPA and NRC approved, and only then will WIPP be a possibility.

I would appreciate a response so I know this letter has gotten to you.

Benjamin E. Friedman

3.2-1  
4.1-3

3.1-10

15-JUN-89: EX-00322, PAGE 6 OF 27

Dear Editor:

I want to know the real facts about WIPP! I have listened to many speakers on this subject, but I am even more confused when I begin. It seems that each speaker had his/her own facts and truths about the situation, depending upon which side they were on. I am utterly confused.

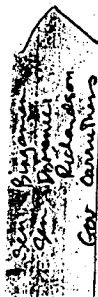
On one hand, WIPP seems perfect. This nuclear waste must be put somewhere, and why not in a place like WIPP, with its salt beds that will act as sealers, and with the huge rooms completely ready for waste to arrive. This is a great idea, counting on the fact that putting the waste down there and closing it off is the end of it.

Here is the problem. There are a bunch of "what-ifs" of the future of WIPP. What if one of the trucks gets into a severe accident during the transportation of the waste, thus dispersing our own neighbors along our streets to WIPP? What happens then? What if, after WIPP is sealed, there is a big leak of water into the salt beds, then corrodes the crates containing the waste, and it then gets into the Rio Grande River, eventually killing many living things? What happens then?

Of course, these are all "what-ifs". But, I am concerned because I don't know which of these situations may become a reality. Are these "what-ifs" even close to possibilities? How safe is WIPP? Should I be concerned? Who can I believe anyway?

All that I'm asking is that this WIPP project could be postponed until we all know the real facts. With so many opposing truths, how can we jump so quickly into this? Why is there such an incredible hurry? Please, for the knowledge and safety of us all, let's wait until we find out more. I want to be safe. I want to know the real facts about WIPP!

With Concern,  
Samaya Blaise  
-16 yrs. old



I Hope for Glenn

15-JUN-89: EX-00322, PAGE 7 OF 27

Gov. Cunningham

Dear Governor, the Richmonds,  
My name is Morgan Powell. I attend Santa Fe Preparatory School and am in the tenth grade. I take a health class here at Prep and for the last two or so months we have been educating ourselves with ~~with~~ about the WIPP issue. I am writing this brief letter to tell you that WIPP is a terrible idea and we need to stop it. All of us asking is that you as our Representative, the person we see the people elected and in whom we have trust, promise to me and my fellow students at Prep that you will do everything in your power to make WIPP as safe as possible before the process starts.  
Thank you very much for taking the time to listen to my complaints.

Sincerely,  
Morgan Powell

Senator Dominick  
Brianna  
Representative Richardson  
Carney Committee

13-JUN-87: EX-00322, PAGE 8 OF 27

May 10 1988

Senator Bingaman,

I write to you because I'm one of the many concerned students at the Santa Fe Preparatory School.

We are very worried about the Waste Isolation Pilot Plant project. We have had representatives from the Department of Energy and a scientist at WIPP come to our school and talk to us about their view points of the situation. We have also had discussions with the Concerned Citizens for Nuclear Safety, so we have been exposed to the various perspectives of the project.

We are all aware of the nuclear waste that is to be stored at Carlsbad, and even with all the safety measures that have been explained to us, we know that there can still be a spill, causing radiation, which could reach our environment and disturb our ecosystem for years and years to come. We were told by the representative of WIPP that the waste would only be solid, no radioactive substances and that rubber gloves and clothes would only be stored at the WIPP site. We are confused, since the ~~rep~~ told us that the toxic waste does contain radioactive waste.

Not everyone is aware about the danger of this toxic waste, therefore, we would greatly appreciate your cooperation and help in fighting against WIPP, and make more people aware of the problem and join us in the quest against nuclear waste being driven on our streets.

The students of Santa Fe Preparatory School can't prohibit WIPP alone, we need your help. Every voice can be heard and can make a difference.

I thank you for your time and I would overflow with gratitude for your help.

Sincerely,  
Marta Greenway.

3.1-2  
3.1-10

Civility

13-JUN-87: EX-00322, PAGE 9 OF 27

Dear Worthy House,

I would appreciate your cooperation to deeply consider just how safe WIPP is, and to think about just how long ten thousand years really is. Ten thousand years is so long that nobody on our planet will have any records of WIPP so WIPP has to be built so well that nothing can ever get in or out.

Please don't just get WIPP on it's way and say, "Oh well I'll be dead in thirty years, so who cares." I think that you are going too fast and spending too little time and thought on such a heavy and important issue.

I am awaiting your response,  
Chris Bailey

3.1-2  
4.1-3



15-Jun-89: EX-00322, PAGE 10 OF 27

*WIP*

The Honorable Peter Domenici  
United States Senate  
Santa Fe, NM 87501  
Dear Senator Domenici:

We as the students of Santa Fe Preparatory School wish to express our concern that the Department of Energy has selected the WIPP site too quickly. We feel the Department of Energy has not done enough to select the best way to store the waste. We have been studying the WIPP issue for the last few months. We have heard speakers from the EEG, CCNS and WIPP and we are concerned about the inconsistencies in their reports.

As our representative we ask you to withhold support for the Land Withdrawal Bill until the Department of Energy meets all EPA standards.

Sincerely yours,  
*Sam Fowler and Tom Morris*  
Students of Santa Fe Preparatory School

Send also to: *Bingaman*  
*Gov Carquith*  
*Rep Bill Richardson*

4.1-3  
6.1-1

15-Jun-89: EX-00322, PAGE 11 OF 27

May 19, 1989  
Santa Fe, New Mexico 87505

Senator Jeff Bingaman  
19 E. Hurcy, Suite 101  
Santa Fe, NM, 87501

Dear Sir:

I am writing to you as part of a student group at Santa Fe Preparatory School. We have recently been studying environmental issues in connection with a Health seminar class led by Jean Kithil. Our focus has been on WIPP issues, and we have had various speakers who have presented their positions on this issue to us.

My primary concern about WIPP is that I feel overwhelmed and quite confused by all the contrasting statistics and information with which I have been confronted. While trying to learn about this nuclear waste isolation plant, located near Carlsbad, New Mexico, I met with several groups, including the CCNS (Concerned Citizens about Nuclear Safety), the EEG (Environmental Evaluation Group), and Stanford Nation, the manager of Experimental Operations at WIPP. Although these committees all have the same basic idea about what is going to happen at WIPP, there was considerably contrasting information and statistics that caused me to wonder about the legitimacy of their facts. For example, the CCNS seemed to have the highest and most severe statistics, while the spokesman for WIPP possessed the most mild and comforting data. It was as if these "facts" lulled us by allowing us to hear what we wanted to hear.

My problem is: Whom should I believe? What is really going on?

Thank you for your consideration of this matter.

Sincerely,

*Nickie M. Carlberg*

Nickie M. Carlberg  
Sophomore, Santa Fe Preparatory School

15-Jun-89; EX-00322, PAGE 12 OF 27

Santa Fe, New Mexico  
May 5, 1989

Director,  
U.S. Department of Energy  
Office of Public Affairs  
WIPP Project Office  
P.O. Box 3090  
Carlisle, PA 17011

Dear Sir or Madam:

I am a concerned citizen of New Mexico. I feel that I have an obligation as a resident of my state to be aware of important events taking place within it. The WIPP Project represents potential hazards to my community and I would like to have better quality information.

I would prefer to obtain that information from sources that could be classified as experts, such as your department. Please send all information available to the public concerning the WIPP Project to the below address.

Any and all material received will be greatly appreciated. Thank you very much.

Sincerely,

*Nicholas A. Freedman*  
Nicholas A. Freedman  
205 Laughlin Street  
Santa Fe, NM 87501

MAY

15-Jun-89; EX-00322, PAGE 13 OF 27

Mr. Gallegos  
As a student of Santa Fe Preparatory School and as an individual, I would like to thank you for coming to speak to our Health class on behalf of the E.P.A. I would also like to commend you for presenting your material in an impartial manner as a scientist who must remain neutral to judge such matters as WIPP properly. The facts which you conveyed because very useful in the week following your visit because we had a speaker from the isolation sight itself. Using the information I learned from your slides, I was able to sufficiently grill this fellow on the possible dangers and mishaps which could occur.

I suppose that I can only encourage you to continue to keep a close watch on the D.O.E. and perhaps your organization can make sure that the WIPP sight has undergone sufficient experimentation before any large quantity of waste is placed there, and that it will continue to be monitored as long as you see necessary.

Sincerely,  
Carl W. Smith

*Carl W. Smith*

Written by The 10<sup>th</sup> grade Health Committee

May 8, 1989

The Honorable Mayor Sam Pick  
The Santa Fe City Council  
PO Box 909  
Santa Fe, NM 87504

Dear Mayor and City Councilors:

The Santa Fe Preparatory School joins the Santa Fe Public Schools and Pojoaque Valley Schools in their concern for the health and safety of present and future generations of New Mexicans, if the EPA's WIPP standards are not met prior to storage of waste.

Specifically, we request your consideration of the following:

1. We need safe, improved roads, including metropolitan bypasses, before shipping begins.
2. We need safe drivers who have passed special requirements for driving trucks with nuclear waste, and we need a firm policy that waste shipments will be halted during hazardous driving conditions. We cannot afford the cavalier approach to safety that was recently demonstrated in Prince William Sound!
3. We need safe containers - Trupacks must comply with NRC standards.
4. We need properly trained first-response people, who are properly equipped for the worst-case scenario. They must know how to deal with all the poisonous wastes that will be shipped - and they must be able to identify the contents of Trupacks quickly and accurately.
5. We need to know if a plan exists to retrieve the waste, if the repository is unsatisfactory.
6. We need to know if indeed WIPP will be closed in 25 years - or will a decision be made to add more waste?
7. We hope that experimentation and testing will occur before the shipments to WIPP begin. Is the site safe even though there is brine seepage? What gases will build up with radioactive waste?

3.1-2

5.1.1-1

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5.4-2

7.8.5-2  
7.8.6-1  
7.11-4

Too many concerns remain unanswered. The DOE safety record has not provided much comfort to the citizens of Washington, Idaho, South Carolina, Colorado, and many more locations where highly poisonous nuclear waste is working its way into the water table - including Los Alamos.

The DOE needs to work hard to gain the trust of the public. DOE needs to be much more careful than in the past. We need a series of legal checks and balances which will insure maximum safety, from an Agency which up to now has been known only for its single-minded attention to building nuclear weapons, regardless of environmental destruction.

A final note: last week human skeletons dating from less than 100 years ago were found near Santuario-de Guadalupe. If that burial site was unknown to us, how can mankind remember the location and hazardous nature of WIPP, thousands of years into the future?

We are making these concerns known to you in hopes that you will forcefully convey them to DOE. We want you to know these concerns of the Santa Fe student population (we will have to deal with the mess 20 to 50 years from now, after you adults are gone!), so that you can represent our best interests in reaching a sensible long-range solution to nuclear waste.

Sincerely,

Santa Fe Preparatory School Faculty and Students

*Joseph M. ...*  
*John ...*  
*John ...*  
*John ...*  
*John ...*  
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*John ...*  
*John ...*  
*John ...*

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1 Beth York  
 2 Ben L. Bergich  
 3 Jeff Dodge  
 4 Paul Stead  
 5 Robert W. Kuehl  
 6 Andrew Rasmussen  
 7 Zana ...  
 8 D. ...  
 9 Lisa Naumburg  
 10 Natalie ...  
 11 Tony ...  
 12 Barbara ...  
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May 19, 1989  
Santa Fe, New Mexico 87505

Senator Jeff Bingaman  
119 E. Marcy, Suite 101  
Santa Fe, NM 87501

Dear Sir:

I am writing to you as part of a student group at Santa Fe Preparatory School. We have recently been studying environmental issues in connection with a Health seminar class led by Jean Kithil. Our focus has been on WIPP issues, and we have had various speakers who have presented their positions on this issue to us.

My primary concern about WIPP is that I feel overwhelmed and quite confused by all the contrasting statistics and information with which I have been confronted. While trying to learn about this nuclear waste isolation plant, located near Carlsbad, New Mexico, I met with several groups, including the CCMS (Concerned Citizens about Nuclear Safety), the EEG (Environmental Evaluation Group), and Stanford Watson, the manager of Experimental Operations at WIPP. Although these committees all have the same basic idea about what is going to happen at WIPP, there was considerably contrasting information and statistics that caused me to wonder about the legitimacy of their facts. For example, the CCMS seemed to have the highest and most severe statistics, while the spokesman for WIPP possessed the most mild and comforting data. It was as if these "facts" lulled us by allowing us to hear what we wanted to hear.

My problem is: Whom should I believe? What is really going on?  
Thank you for your consideration of this matter.

Sincerely,

*Melinda K. Carlberg*

Melinda K. Carlberg  
Sophomore, Santa Fe Preparatory School

May 19, 1989

Gentlemen:

The following may sound far-fetched, but it is not at all impossible. In fact it is only all too possible, which is what scares us. In all recorded time, no civilization has lasted 10,000 years. The history we know of dates back only 6,989 years, and look at all that has happened in just that amount of time. Please consider this.

From A History of the World.

MacMillan, 12,797

The year is 6989. The location is a barren field in the New United Arab Oil Plain. The metropolis of Rubi-Famehradbad (in the ancient tongue, Carlsbad, New Mexico). This was the forbidden city of the old United States Empire. A secret vault has been discovered, and, if nothing else is found, traces of oil and natural gas are known to be beneath.

Today is the day long awaited, the day that the secrets of the ancient vault will be revealed on Geraldo the CLKXXXVII's special <sup>1974</sup> investigative report. The bulldozers have cleared away the stone slab that sealed the cavern off and archaeologists are delving into the sodium chloride beneath. A cry is heard, and the discovery of the collapsed remains of a shaft is made.

Following the shaft downward, they reach a small open pocket in the depths of the earth several days later. Many collapsed passages lead off this crushed antechamber. Following these passages, the archaeologists finally find one of the farther chambers.

Many interesting items are found, some that look like traces of fibrous material that ~~may be~~ the remains of the old

roce. Next found are the remnants of the obsolete tools used by the ancients. Finally a chunky, dry substance is found embedded in the soil for which the archaeologists can find no use.

An amazing discovery. These artifacts, the first real proof of the old civilization's existence other than stories and writings of it. These items are instantly made available to the public. They are shipped to museums all across the continent, displayed in exhibits, and sold in gift shops. Soon they become as common as microwaves. Everybody has at least one in their house, usually used as a decorative item or as a plaything for the children.

Strangely enough, months later, an epidemic of an unknown disease sweeps the continent and everyone is stricken and passes away miserably.

by  
Glenn Whitener  
Stephe Rommel  
Tony Pinkerton  
10th Grade Health  
Santa Fe Preparatory School

7.14-11

Jaime Asher  
Health  
April 20, 1989

I am scared about radioactive waste. I have tried to find out some facts about what radioactive waste can do but I've found conflicting info. I ask, "What would radioactive waste do to me if it was in the air?" My scientists say that one particle of plutonium (which is the very radioactive chemical) can kill a person if it is ingested. I have also heard that WIPP employees that plutonium can be brushed off the skin and not be harmful at all. Plutonium can not penetrate the skin. It has to get into the blood stream to kill a person. I don't understand how a plutonium particle can be brushed off the skin and not get into the air.

I don't have a clear idea of what plutonium can do to land or people. Living in a town that is on the WIPP route makes me nervous that someday there might be a spill. What if there is? What I want to know is what kind of spill would do what kind of damage? What effects might it have on the land and the people of Santa Fe? Would it kill only the people that drove by the accident site in the first ten minutes after the waste had spilled? Or would it take the land, a mile radius from it, inhabitable for the next 200 years? I would like to know more about the transportation system that takes waste to the WIPP site. Who do they call if there is an accident? What if there is a slight bit of wind? - is there a sweeping up crew for WIPP? Is that all we would need to clean it up?

When will I be able to drive on the streets of Santa Fe and not have to wonder when the accident will be that will spill radioactive waste into my backyard?

of Mrs. Francis group.  
To the newspaper  
- see Mark for a intro. ?  
Gospis  
Gendicks  
New Mexican voice  
Albany Journal  
Burgman  
Domenici  
Richardson  
DOE

*By Submittal Request  
to the Senate Floor*  
**Santa Fe Preparatory School**  
CONCERNED CITIZENS FOR NUCLEAR SAFETY

A RESOLUTION FROM SANTA FE PREPARATORY SCHOOL TO THE CONCERNED CITIZENS FOR NUCLEAR SAFETY

Whereas, The Santa Fe Preparatory School students realize the Waste Isolation Pilot Project (WIPP) shipments are scheduled to pass through the city of Santa Fe; and

Whereas, we as students are strongly affected by further production of radioactive materials, and recognize possible dangers of waste shipment through Santa Fe; and

Whereas, all safety procedures have not been completed according to the new Environmental Protection Agency (EPA) standards to ensure the health and welfare of the public; and

Whereas storage of radioactive wastes in salt beds has not been tested for safety; and

Whereas we realize that the existing waste, plus waste generated by continuing production of nuclear materials, has to be stored and monitored so that it is safe for present and future generations;

THEREFORE, BE IT RESOLVED BY THE STUDENTS OF SANTA FE PREPARATORY SCHOOL:

1. No shipments shall begin until all new EPA standards of safety are met; and
2. The Environmental Evaluation Group (EEG) shall monitor the impact of WIPP on the environment; and
3. The Department of Energy (DOE) and the Department of Transportation (DOT) shall require waste shipments to bypass heavily congested areas; and
4. The United States Congress shall provide funding for the construction of the Los Alamos/Santa Fe relief route, for the safe transport of nuclear wastes; and
5. The Tru-Pact containers shall meet all regulations established by the Nuclear Regulatory Commission; and
6. The United States Congress shall appropriate funds for research into alternatives to geological burial, and for better monitoring of existing waste storage sites.

3.1.2  
3.1.3  
5.3.10  
5.3.1

**Santa Fe Preparatory School**

Upon adoption of this Resolution, copies will be transmitted to the Concerned Citizens for Nuclear Safety.

Adopted this 1st day of June, 1989.

Stephen M. Machen, Headmaster



13-Jun-89: EX-00322, PAGE 26 OF 27  
5 Copies of 700 on enclosed paper  
envelopes

to CENS  
Newington  
Rt. 1, Townsh  
Burlington  
Richardson  
Dorchester

Cory Naugle  
Rt. 9 Box 68FB  
Somers, NH 03255  
May 9, 1989

Senator Ptk. V. Donnici  
Federal Building  
United States Post Office

Dear Senator Donnici:

I am writing to you about my concerns about the WIPP project. I am a high school student at Phillips Ex. and we have spent many weeks educating ourselves about the entire project. My main concern is the safety problems that future generations will have to face if the project goes through. I do think that WIPP is a good project for present day problems with nuclear waste, but the site can only hold so much waste and we will have to find another place to put it anyway.

In my opinion, it would be most logical and economical to hold the waste for now and research better ways to resolve the problems of nuclear waste.

2-1  
3-1-2  
5-1-2  
5-3-1

13-Jun-89: EX-00322, PAGE 27 OF 27

Thank you for listening to my concerns.

Sincerely,  
Cory M. Naugle  
Cory M. Naugle

my name is Scott Pittman, PO Box 1812, S. Fe, N.M. 87504  
 I am Director of the S.W. Regional Permaculture  
 Institute - a non profit organization seeking  
~~to~~ to institute sustainable  
 agriculture and lifestyle on the earth. Our  
 primary goal is to educate the public to  
 the current devastation of the planet and  
 to offer alternatives to that destruction.  
 The Permaculture Institute, as well as  
 any other environmental/ecology based  
 organization, does not promote nuclear  
 development as a rational, sustainable  
 alternative for energy or peace.  
 Nukes for Peace is to our view an  
 oxymoronic statement.

I would like to address my comments  
 to the credibility of the D.O.E. ~~the~~  
~~the~~ Mr. James Bickel of the  
 D.O.E. was asked by reporters if he thought  
 the current Rocky Flats investigation would  
 affect the transport of waste to WIPP  
 "I don't know why it would," Bickel said.  
 "I don't see any relationship between the  
 two." The relationship Mr. Bickel is  
 the credibility of D.O.E.

THE D.O.E. IS CONSISTENTLY ON THE SIDE OF  
 the corporations that sub-contract to  
 the D.O.E. to the detriment of the environ-  
 ment, the workers of those corporations,  
 and the surrounding communities. ~~The~~  
 Rockwell International who runs Rocky Flats  
 have consistently used shoddy monitoring  
 and disposal techniques in their nuclear  
 processing and have not only been allowed  
 to ignore government guidelines but were

13-JUN-89; EX-00323, PAGE 1 OF 5

13-JUN-89; EX-00323, PAGE 2 OF 5

rewarded by the government to the  
 tune of \$ million dollars for being  
 an energy company. G.E. who are  
 I understand, to run the WIPP opera-  
 tion have an abysmal record for  
 safety, pollution, and theft.  
 G.E.'s board of directors include Walter  
 Whiston - President Reagan's economic advisor  
 in the 1980 Presidential election - William  
 French Smith, former U.S. Attorney General,  
 David Jones, Retired Air Force General,  
 Chair of Joint Chiefs of Staff and on  
 the Advisory Board of the Star Wars  
 Advisory Panel.

The sheer amount of government  
 subsidies to the nuclear industry  
 is a well documented fact and  
 it stretches credibility to think that  
 one day these citizens are screaming  
 for lucrative government contracts  
 and the next day they are guardians  
 of the public interest.

with the further details  
 of a ~~government~~ ~~new~~ ~~work~~ after profits  
 and their own personal agendas it is  
 difficult to assume that the D.O.E.  
 is any different ~~from~~ ~~or~~ comprised of  
 more ethical or moral employees.  
 We as citizens are entrusted with  
 a President allowing a private war  
 to be divorced with weapons sales  
 to Iran, Watts selling his influence

to pay part's for contractors of govern-  
ment housing of Mexico, former attorney  
general, involved in one steady deal  
after another.

We have a national forest. See. Selling  
our forests at a loss. The BLM leasing  
our lands which are then overgrazed  
and develop devastating erosion.

Is it any wonder that we citizens  
have serious doubts as to the competence  
of the D.O.E. to protect our interests.

I would like to offer an alternative  
to the exorbitant spending on nuclear  
weapons storage and manufacturing.  
I take my comments from "THE  
STATE OF THE WORLD" published by  
the WOODHURST INSTITUTE 1989.

3.2-1

5.3-1

Enhancing Global Security (1/1)

Military Priority	Cost	Social/Environmental Priority
6 months of U.S. analysis for nuclear warheads, fiscal year 1986	\$4,000,000,000	U.S. government spending on energy efficiency, fiscal years 1986-87
SON research, fiscal year 1987	\$1,700,000,000	Enough funds to build a solar power' process serving a city of 500,000
10 days of European Economic Community industry spending	\$2,000,000,000	Annual cost to clean up American nuclear waste in 10 European countries by the year 2000
1 Trident submarine	\$1,400,000,000	Global 5-year child immunization program against 6 deadly diseases, requiring 1 million dollars a year
3 B-1B bombers	\$600,000,000	U.S. government spending on renewable energy, fiscal years 1983-85
2 months of Ethiopian military spending	\$60,000,000	Annual cost of proposed U.N. Anti-Diversification Plan for Ethiopia
1 nuclear weapon test	\$12,000,000	Installation of 80,000 hand pumps to give Third World villages access to safe water
1 hour operating cost, B-1B bomber	\$21,000	Community-based natural habitat survey of African villages to reduce natural deaths by half in one decade

Source: Woodhurst Institute, based on various sources.

ology). In 1985, the country decided to  
size as 4-million-strong armed forces by  
quarter and to reduce part of the  
army's budget. The government has  
now accounts for 80 percent of the out-  
put of China's 30,000 military factories;  
that share is projected to reach 90 per-  
cent by the year 2000.  
It is important for nations to decrease  
global conventions have been concluded,  
greater resources to environmental pro-  
tection. But in the face of transnational  
environmental problems, the national ef-  
forts are not enough. The world needs  
the cooperation of neighbors. Indeed,  
the transnational character of environmental  
degradation has  
grown and as remedies become more ur-  
gent, an increasing number of interna-  
tional conventions have been concluded.

Enhancing Global Security (1991)

Military Priority	Cost	Social/Environmental Priority
6 months of U.S. military for nuclear warheads, fiscal year 1986	\$4,000,000,000	U.S. government spending on nuclear efficiency, fiscal years 1984-87
SDI research, fiscal year 1987	\$3,700,000,000	Enough funds to build a solar power system serving a city of 500,000
10 days of European Economic Community military spending	\$2,000,000,000	Annual cost to clean up hazardous waste in 10 European Economic Community countries by the year 2000
1 Trident submarine	\$1,400,000,000	Global 5-year child immunization program against 6 deadly diseases, preventing 1 million deaths a year
3 B-1B bombers	\$660,000,000	U.S. government spending on renewable energy, fiscal years 1982-85
2 months of Ethiopian military spending	\$50,000,000	Annual cost of proposed U.N. arms reduction plan for Ethiopia
1 nuclear weapon test	\$12,000,000	Installation of 80,000 hand pumps to give Third World villages access to safe water
1-hour operating cost, B-1B bomber	\$91,000	Community-based material health projects in 10 African villages to reduce material deaths by half in one decade

Source: *Worldwatch* listings, based on various sources.

greater resources to environmental protection. In 1985, the country decided to slice its 4-million-strong armed forces by one quarter and to utilize part of the military-industrial capacity to manufacture civilian goods. Christian production of China's 50,000 million farmers, then share is projected to reach 50 percent by the year 2000 as

It is important for nations to devote

FER RECORD

PRESENTATION FOR WIPP HEARING

John M. Puckett ADDRESS: Los Alamos Nat Lab  
June 15, 1989 Los Alamos, NM 87545

I AM AN EMPLOYEE OF THE UNIVERSITY OF CALIFORNIA, WHICH OPERATES THE LABORATORY FOR THE U.S. DEPARTMENT OF ENERGY. This organization is responsible for all Health, Safety and Environment of the Laboratory including the management of the Laboratory's transuranic waste.

My purpose today is to describe transuranic-waste management at Los Alamos, outline the checks-and-balances involved, and, at the end of my short talk, deliver a quick personal aside. I will try to be both factual and brief. - Limitations of presentation are: 1. brevity of my appearance, however, should not be equated with anything but obvious time constraints. It is my job to be not only interested, but also accountable.

Transuranic wastes from Los Alamos are being prepared and packaged in accordance with all of the technical and quality assurance requirements identified in the WIPP Waste Acceptance Criteria. All WIPP-approved waste is packaged in metal 55-gallon drums or larger metal boxes. Waste materials include not only scrap metals, cemented liquids and particulates, but also paper, plastic, cloth, rubber, glass, and a damp clay-like solid material (sludge). In accordance with Acceptance Criteria, our WIPP waste must be free of liquids, pyrophorics, pressurized containers, and explosives. Strict limitations have been levied on the quantity of particulates, radioactive material, package size and weight, and on external package radiation and surface contamination. In addition, any regulated hazardous materials - present, most commonly metallic lead, are identified and the quantities listed in the data that describes the waste package. Our waste-packaging management system include detailed computer records. CURRENTLY WE ARE IN THE PROCESS OF BEING APPROVED BY THE STATE OF NEW MEXICO FOR THE WIPP.

Not only that, preparing waste to meet all of the WIPP requirements involves an elaborate quality assurance program of multiple verifications, approvals, and audits, all of which are also extensively documented. Indeed all transuranic waste preparation for WIPP is being accomplished in accordance with the Los Alamos "Certification Plan" and detailed operating procedures. This Certification Plan has been approved by DOE and reviewed by the State of New Mexico Environmental Evaluation Group (EEG). The Laboratory responds to all EEG comments. Moreover, internal Laboratory audits of all aspects of WIPP waste preparation operations are conducted twice a year by the Laboratory Quality Assurance organization. On top of that the DOE Waste Acceptance Criteria Certification Committee, accompanied by a representative of the State EEG, has audited the Laboratory now on three occasions.

once each year for the past 3 years. Included in these audits has been a review of the conduct, findings, and subsequent responses to the internal Laboratory audits. The Laboratory has implemented all improvements or corrections identified in these audits. All of these audits and checks have but one purpose - to ensure that waste is handled, transported, and eventually disposed of in a manner that protects the workers, the public, and the environment.

Transuranic wastes have been accumulated at Los Alamos National Laboratory since the 1970 Atomic Energy Commission (now the Department of Energy) directive that defined these wastes and required their segregation, special packaging, and storage.

Laboratory efforts to receive, evaluate, treat as necessary, and prepare this past accumulated transuranic waste for eventual WIPP disposal are in progress. These efforts involve the construction of new facilities. At these facilities wastes are cut into smaller pieces to allow packaging for WIPP. We also examine waste packages with a battery of special noncontact instruments to verify that what will be sent to WIPP will comply with WIPP criteria. Unacceptable packages will be made acceptable - or they will not be sent out. Most of the transuranic waste at Los Alamos can be "contact handled." That means wastes and packages can be handled directly and manipulated by workers who do wear dosimetry badges at all times. These workers receive little or no measurable radiation dose, and certainly no dose that even approaches, much less exceeds, any health standards. *CONTRARY TO STATEMENTS MADE EARLIER, THE ROUTINE TRANSPORT OF TRANSURANIC WASTE FROM LOS ALAMOS, IN TRUMPACT-II, WILL NOT JEOPARDISE ANY HEALTH, INCLUDING THAT OF THE ALBUQUERQUE AREA. A VERY SMALL AMOUNT OF OUR ACCUMULATED WASTE, LESS THAN ONE HALF OF ONE PERCENT, IS REMOVED HANDLED*

because of its higher level of package radiation. This waste must be prepared for WIPP in accordance with all of the procedures, checks, and audits I have described for the contact handled waste and more. But let me point out, generation of remote handled transuranic waste is anticipated to stop at Los Alamos within the next two years due to the closing of the operations that created this class of waste.

Once shipments of transuranic waste from Los Alamos to WIPP begin, a shipping rate of one TRUPACT-II truckload every other work day for about a 10 year period is forecast. At that time, all of our accumulated stored waste and newly generated waste will have been removed. From that time on, we will only ship newly generated wastes and that will necessitate only one TRUPACT-II truckload shipment every one or two weeks. As I've said, all waste shipments that leave Los Alamos will be verified through special operating and quality assurance procedures, all of which are regularly audited, to verify that all NRC and DOT transportation requirements are complied with. A facility has been constructed in which the TRUPACT-II shipping containers can safely and properly be loaded with approved waste packages.

In closing, transuranic wastes are continuing to be safely packaged, treated, and stored at Los Alamos in preparation for their ultimate disposal at WIPP. The DOE has prescribed strict criteria for the final waste that are to be shipped to WIPP, and compliance with all of these must be verified repeatedly.

The Laboratory continues to work diligently to reduce or minimize the generation of transuranic waste. Over the past two years our previous historic rate of generating transuranic waste has been reduced by over 50%.

Until WIPP is available, we will continue to accumulate a growing inventory of transuranic waste in surface storage facilities. It has been in this configuration since 1970 and in the near term presents no hazard to our employees, the public or the environment. None the less, this can never be considered a permanent disposal option. It is imperative that the United States of America proceed with WIPP to demonstrate, with all appropriate and necessary safety documentation, that this transuranic waste can be safely shipped and stored.

Finally, if I can be allowed a personal note, I am a resident of the State of New Mexico. I live here too. I travel our beautiful highways often. This state has been a leader in this country on difficult, technical issues for decades and we now have the opportunity to once again show our national leadership. On the issue of WIPP, we can demonstrate that our society and culture can safely dispose of our transuranic waste.

Thank you.

Comments of Mary G.P. Hall  
DOE WIPP Hearing, Santa Fe, 15 June '89

My name is Mary G.P. Hall, and I represent the Social Concerns Committee of the Santa Fe Unitarian Church, but these words are my own.

WIPP seems to me like a juggernaut whose devotees are willing to sacrifice almost anything to keep it going. It rumbles along justifying its inappropriate haste by producing pounds of impressive documents and citing esoteric computer experiments to prove its infallibility. But real life, paper and pencil common sense seems to be absent. An example: In the fanfare of the Trupact demonstrations, never did I read of the worst case but very real-life possibility of a Trupact truck at 65 mph crashing into a vehicle coming from the opposite direction at the same speed. Freshman physics tells me that if this event were simulated, the container would have to be dropped from a height of over five hundred feet, not a mere thirty. Since DOE plans to have the trucks travel at the regular speed limit, common sense says that safety can legally be sacrificed to speed and expediency.

The garbage end of the nuclear fuel cycle appears to have had little scientific attention over the more than forty years of our nuclear love affair. But now the closet doors are opening, and nuclear sites all over the country are found to be leaking and dangerous. We hear the names ringing in our consciousness: Fernald, Savannah River, Hanford, Rocky Flats-- the list keeps growing. And in New Mexico's own secret closet, our federal watchdog, the GAO, has sniffed out the need for a Los Alamos and Sandia cleanup which will cost two billion tax dollars. How can we have confidence in the word of DOE when it has such a history of coverup for releases

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3.2-1

of radioactivity, both "routine" and unplanned.

I have met scientists involved in evaluating the WIPP site who did investigations that showed potential radioactive contamination. I was shocked to learn that these negative conclusions were not wanted in the DOE.

The attempts of ambitious politicians to speed up the WIPP by bypassing EPA safety regulations, and even trying to weaken the law itself, can not be tolerated. The juggernaut must be stopped.

15 June 1989  
329 Saenger St.  
Santa Fe, NM 87501  
983-8342

15-Jun-89: EX-00326, PAGE 1 OF 2

Hello! My name is Melanie Banteah. I am 10 years old. I am from Zuni, New Mexico.

I am concerned about V.I.P.P., the Waste Isolation Pilot Plant. nuclear waste will be taken to V.I.P.P. Out of that waste the most harmful substance in it will be plutonium. You can not see, hear, taste or smell plutonium. If you breathe plutonium you could get cancer or get very sick. Some people think if the waste is spilled we can just sweep it up. If it is spilled everybody and everything has to pay the consequences.

The waste will go by Gallup. We live very near Gallup. There are many drunk drivers in Gallup. There could be an accident like in the past. Our land is sacred to us. Our ancestors are buried here. In the middle of the village we have a plaza. There the kachinas dance. They dance for rain, good crops and health. Near the plaza we plant prayer sticks. If the sand was contaminated because of an accident, we could not do these things. Land that originally belonged to the Zunis has been taken or sold. If the waste comes to Zuni we won't have any land left.

The nuclear waste will come in trucks. The trucks will be unmarked. You cannot tell if the waste truck is behind or in front of you because it would be unmarked. The waste will be in Trupact containers. The DOE tested the Trupact containers under heat for 30 minutes. In an accident the containers would probably burn longer. They also dropped the Trupact containers and when they landed they had dents in them, then the nuclear waste would escape.

V.I.P.P. needs to meet the Environmental Protection Agency's standards. It has not. The water could get contaminated because V.I.P.P. did not meet E.P.A. standards. This contaminated water could get into the food chain which

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15-Jun-89: EX-00326, PAGE 2 OF 2

could lead to death for humans, plants and other animals. Then everything would be gone.

Remember, future generations and we will have to live with V.I.P.P. If it is opened. We have only one place to live, Earth. Please think about our sacred land. It's all we have.

V.I.P.P., can't live with it. CAN live without it.

Thank You.

Melanie Banteah  
Melanie Banteah

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3.1-3

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Jack White, Jr. CHA  
#1 Carlsbad Caverns Highway  
Box 68  
White's City, New Mexico 88268  
505-785-2281

June 15, 1989

Mr. W. John Arthur, III  
ATTN: SEIS Comments  
Department of Energy  
Albuquerque Operations Office  
Box 5400  
Albuquerque, NM 87115

Credentials

1. My name is Jack White, Jr. I am President of White's City, Inc., the tourist center at the entrance to Carlsbad Caverns National Park. My Grandfather homesteaded the land in 1927. My family have lived there for the last 62 years. I am also President of Cave Country, DEA, the non-profit corporation formed to dispense the Eddy County Lodgers Tax monies and am Chairman of the Eddy County Lodgers Tax Committee. I also serve on the Carlsbad Chamber of Commerce Tourism Council. I have served five years on the Board of Economic Development and Tourism for the State of New Mexico and am currently a District Governor for Best Western International. I attended school in Carlsbad, the New Mexico Military Institute, and received a BS in Electrical Engineering from Stanford University.

7.2-22

Page 2  
Jack White, Jr.

Tourism Opinion

2. It is probably obvious that I wish to address the WIPP issue from a Tourism view. Each year over 750,000 visitors come to the Carlsbad Caverns National Park. These visitors provide employment for over 1000 people and contribute over 20 million dollars to our economy. Those of us in the tourism industry certainly do not want to jeopardize this in any way. If we felt that the WIPP facility or the transporting of waste to the site would in any way interfere with the tourists, then we would be against it. However the facts do not support this concern. We are convinced that the WIPP site will be operated safely and the transportation of the waste poses no more hazard than other products already on our highways. The Plutonium may well last many thousands of years, however, one propane truck can eliminate four city blocks if it explodes. We know that the DOE and Department of Defense already transport high level nuclear material over the highways of New Mexico and yet there is no huge outcry. Why? Because they are very safety conscious and concerned for the safety of all those on the highways. It amused me to read that a doctor in Albuquerque said the city and the state are not prepared

7.2-22



Page 3  
Jack White, Jr.

for a nuclear accident. The type of waste to be transported to WIPP for the R & D phase is much less toxic than the material already on our highways going to Los Alamos, Kirtland, and Sandia. Why haven't these concerns been raised before now? Probably because the anti-nuclear faction did not see a media opportunity to mislead the residents of New Mexico into believing that a new and horrible danger is being thrust upon us. Tourists do not NOT ski in Colorado because of Rocky Flats or not go to Amarillo because of the nuclear plant there. But we in New Mexico may damage our Tourism Industry by making an unnecessary fuss over the transportation of the waste to WIPP. I submit that our own worst enemies are the under informed citizens of Santa Fe that have not really looked into the facts. They are acting emotionally and not logically.

#### National Obligation

3. Nuclear weapons are vital to the defense of our country and the safe disposal of the wastes generated in the production of those weapons is vital to our national security. New Mexico is a nuclear state. With the National Labs at Sandia and Los Alamos and the White Sands Missile Range as well as the uranium mines at Grants we are already dependent on the nuclear age for much of our

7.2-22

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Page 4  
Jack White, Jr.

economy. These facilities provide much to the State of New Mexico. Where this waste is now stored is probably not safe. It should be placed in a safer place and one possibility is WIPP. However the safety cannot be proven if the facility is not allowed to perform the necessary experiments. Lets stop this unnecessary haggling and let the DOE fulfill its mission of developing a safe repository for nuclear waste. If at the end of the five year research phase it is determined that the site is not safe, then we will have to find another solution. However it cannot be proven one way or the other if WIPP is not allowed to open.

#### Conclusion

4. In closing I would like to say that if New Mexico's tourism industry is damaged by these hearings and the publicity attached to them, it will not be the DOE's fault, but our fault for crying wolf at the top of our lungs and scaring our own customers away.

Thank you.

Jack White, Jr. CBA  
President  
White's City, Inc

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7.2-22

13-Jun-89; EX-00328, PAGE 1 OF 1

Today I am going to talk about WIPP. I'm a native of New Mexico. As a child of the Zuni Pueblo, I fear for the safety of all people because the waste isolation pilot plant is not good! It could ruin water and fish which will not be edible. With contaminated water our lives could be at stake. Our livestock could also become diseased. The main concern is safety. If any accident occurs it could cause damage to many innocent people's lives, causing cancer of the lungs and bones, leukemia or genetic effects. As for employment, I believe it will not provide the people with safe employment, it will only offer a "full paid" death. The shipments that will be shipped along the WIPP route will be carrying 85 gallon drums of plutonium 239 contaminated wastes. Along the route that these wastes are being transferred 179 radio active accidents have happened and, out of the 179, 34 accidents have happened in New Mexico alone! How long do New Mexicans have to wait until one of these accident cause serious problems, problems that will not last minutes but years years that will cause torment, pain and serious health problems, not only for us but for the future generations to come. Therefore we demand control of our destiny. Please STOP WIPP!!!!

Feather Lewis

7.3.5.3-1  
7.13.1-8  
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13-Jun-89; EX-00329, PAGE 1 OF 1

Good afternoon my name is Carleton Bowekaty. I live in Zuni, New Mexico. I am concerned about WIPP. I hope they don't dump the nuclear waste near Carlisbad. I'm afraid that if the trucks carrying the waste crashwe and we breath the harmful air it could cause cancer. I wish nobody made nuclear weapons so there wouldn't be nuclear wastes. The nuclear wastes would be in barrels but the Truckspact may not be able to hold them. They could leak or the wastes could spill over, contaminating our land and our water. There are a number of similar situations like these that could serlowely endanger the health and lives of New Mexico citizens. So, please consider each and every one of us in New Mexico and don't dump nuclear wastes near Carlisbad or anywhere else in this State.

Thank-you.

Carleton Bowekaty

*Carleton Bowekaty*

7.3.5.1-12

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7.3.1.1-23

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PUBLIC TESTIMONY ON SEIS -- Dep't. of Energy Hearings  
Santa Fe, New Mexico; June 15, 1989

Today we have weapons that can virtually destroy life on this planet several times over. In the process of manufacturing these weapons, millions of tons of materials are rendered radioactive. The method some have decided on to deal with this waste is to bury it -- in spite of grave risks that it may contaminate our water, our air, the very earth, itself. The thinking is: if the site is properly selected, there will be no contamination (or none to speak of). All will be safe.

SEIS assures us that WIPP is safe enough to open and begin accepting waste in three months time.

The question of waste disposal is critical to the whole cycle of weapons production. If there were no way to safely dispose of burgeoning quantities of waste, the entire nuclear weapons industry could conceivably grind to a halt. There are powerful interests who don't want to see that happen. For it is an industry designed to promote national security and it is a profitable industry.

In 1952, General Douglas MacArthur, addressing the Michigan State Legislature on the subject of the weapons manufacturers' tendency to promote their own interests at the public expense, said this: "It is part of the general pattern of misguided policy that our country is now geared to an arms industry which was bred in an artificially induced psychosis of 'war hysteria' -- and nurtured upon an incessant propaganda of fear."

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The "military-industrial complex" Dwight D. Eisenhower warned us about is with us still. There still is a close relationship between the government and the arms manufacturers and among those manufacturers is Westinghouse, the contractor for WIPP. If millions of cubic feet of radioactive waste could not be safely disposed of, the financial viability of Westinghouse would be severely challenged.

But the SEIS document assures us that WIPP is safe. And we continue to hear assurances in spite of published reports and public testimony to the contrary by independent teams of scientists.

THE NATIONAL ACADEMY OF SCIENCES has expressed concern about leaks at the WIPP site. THE SCIENTIFIC REVIEW PANEL at the University of New Mexico tells us that radioactive slurry -- cancer-causing, life-threatening slurry could reach the Pecos River within 100 years. ENGINEERS from the DEPARTMENT OF ENERGY, itself, on learning last August about a previously undisclosed incident at WIPP wrote:

"The accident was caused by the failure to properly install the fire water system pipes. This occurrence raises questions about general construction quality."

At the Fernald, Ohio nuclear plant also managed by Westinghouse TWO INSPECTORS FROM THE ENVIRONMENTAL PROTECTION AGENCY were contaminated with uranium. Another Westinghouse project in the Philippines, a nuclear power plant, <sup>was</sup> slated to be built on the

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7.12.8-1

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-3-

slope of an active volcano in an area also subject to both earthquakes and tidal waves. Westinghouse denied that the plant would be unsafe.

Last September in Congress, Representative Synar of Oklahoma, Chairman of the House Subcommittee on Environment, Energy, and Natural Resources was quoted in The New York Times as saying: "There are more Energy Department people lobbying for authority to emplace wastes in the repository than there are making sure the facility is safe."

To date, WIPP has cost a great deal of money. But it cannot even meet current EPA standards, standards established by the federal government to protect the health of its citizens.

If independent scientific counsel also continues to advise us WIPP is not yet safe (and they do) ... if there is any chance of this waste contaminating our water tables (and there is) we cannot shrug our shoulders and hope for the best.

In our history as a nation we have made errors and we have corrected them. If one thing is clear it's that WIPP is not ready to open now on a test basis or any other basis. We must cut our losses. We must think again.

Richard L. Stevens  
P.O. Box 9609  
Santa Fe, N.M. 87504

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3.2-1

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My name is Miranda Belardo-Lewis. I am from Zuni, N.M. I am nine years old. I am also a concerned citizen for nuclear safety. The reasons I am here today, are to testify against W.I.P.P., the waste isolation pilot plan being in N.M. Here are my reasons:

Number 1: The Trupect waste containers have not yet met Environmental Protection Agency standards.

Number 2: If the Trupect containers have not met EPA standards, the waste might leak through the soil and through the soil and get into our water supply.

Number 3 which is the most important of all: The safety of the people is not guaranteed. If the Trupect containers aren't true to us, everything will be contaminated.

Another concern that I have is that the trucks will go through the city of Gallup about 35 miles north of my home in Zuni. There are a lot of drunk drivers in Gallup. What if a drunk driver hits a truck? If that did happen, the waste would not only contaminate Gallup, it would contaminate Zuni too and our sacred land would be destroyed.

I am very scared about the nuclear waste being stored here in Carlsbad. We are here today to ask of you but one favor: PLEASE! Think of our future before you dump the waste here in New Mexico.

Miranda Belardo-Lewis

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7.3.5.3-1

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Waste Isolation Plant (WIPP) - Supplement to the Environmental Impact Statement (SEIS)

PUBLIC COMMENTARY PROCESS

Albuquerque, June 13-14 - Santa Fe, June 15-18

The Department of Energy's (DOE) "Immunized alternative" is to erect WIPP in areas as geologically stable as possible meeting EPA safety standards. The area SEIS report refers to old EPA safety standards, the same as used for the Fort St. Vrain, Colorado, existing EPA safety standards. The area SEIS report refers to old EPA safety standards, the same as used for the Fort St. Vrain, Colorado, existing EPA safety standards. The area SEIS report refers to old EPA safety standards, the same as used for the Fort St. Vrain, Colorado, existing EPA safety standards.

SOCIO-ECONOMIC IMPACTS

- The SEIS does not include negative socio-economic data.
- The SEIS speaks in glowing terms about the economic benefits that will accrue to the Carlsbad area of southern New Mexico. Not surprisingly, the DOE did not include negative economic data as required (except that which would result "should WIPP not open"), and has failed to include or study possible negative economic impact to communities along the WIPP route through 23 states. DOE has ignored its responsibility to analyze and present alternative data, negative though it may be.
- There will be no actual or perceived economic benefit to communities along the WIPP route.
- Most communities in central and northern New Mexico, especially Santa Fe, are heavily dependent on the tourism industry, estimated to exceed \$2.2 billion statewide. Tourism is the lifeblood of New Mexico. A WIPP truck accident, with or without a spill, at any location in New Mexico may have an immediate and devastating effect on the financial security of all New Mexicans, due largely to negative international publicity. Tourism is off 40% in Alaska as a direct result of the Exxon-Valdez oil spill. A major radiological release would have far-reaching consequences difficult to estimate; nonetheless, the SEIS should have included some analysis or estimate of this type of impact.
- Proximity to the WIPP route may result in a decline of investor interest, economic development and communities' municipal bond ratings (Santa Fe is A- at this time), thus damaging the ability of a city to meet medium and long-term financial obligations.
- Property values along a WIPP route may suffer due to buyers' preference for non-adjacent properties. The Santa Fe Board of Realtors now recommends a WIPP disclosure statement to potential sellers.
- The possible decline in property values may have a damaging effect of the value of real estate base portfolios held by regional banks and savings and loan associations.
- The SEIS predicts there will be 8.3 deaths and 104 injuries resulting from the truck transportation of wastes to WIPP. What will the costs be to society, the work force and the affected families? Why does DOE not even ask these questions, much less answer them?
- If cancer cases result from long-term/low-dose exposure to radon from the Pretest Effect - known to have 1000 times the health impact attributed by DOE to such exposure) what will the costs be?

Concerned Citizens for Nuclear Safety • 712 Calle Grito • Santa Fe • New Mexico • USA • (505) 966-1873

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7.2-5  
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7.2-16  
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7.2-6

Treatment for a typical cancer case costs about \$100,000 to \$150,000. A hundred such cases would then cost \$10 million to treat. Long-term/low-dose exposure also results in immunodeficiency, manifested as multiple light- and heavy-chain disorders and chronic fatigue syndrome. What are the potential costs to epidemiologists, families and the work force?

- Increased health care and health insurance costs to individuals or populations along the WIPP route are not addressed.
- The SEIS makes no reference to potential costs of mitigation or relief techniques should WIPP fail to meet its mandate of effectively isolating radionuclides from the environment. Costs of certain operational measures which may ultimately be required (for example, removing or grouting badly fractured sections of Mantel Bed 13B, the layer 3 feet below the disposal area, identified as a likely brine migration pathway) are neither estimated nor mentioned.
- It's important to remember that taxpayers foot the bill for all DOE activities--both making mistakes and cleaning them up.
- Fear of a nuclear spill can damage the social fabric of a community, adding additional burden on the societal infrastructure. Additionally, victims of radiological and toxic contamination must live in constant fear for their future health.
- The costs--financial, psychological and other--to our society of uprooting generations of young people growing up in constant fear, pessimism and distrust are incalculable. A belief in the ability of our environment to sustain healthy life is a crucial requisite for a solid society with a future.
- The SEIS fails to evaluate the negative economic impact of a significant release of radionuclides from the site--the value of the potential loss of farming, residential, urban or industrial lands, both in the immediate region and as far away as the Pecos/Rio Grande valleys of Texas; the economic base posed by contaminated aquifers and local soils; and the economic impact of contaminated air in the WIPP site region. These factors represent a much more realistic economic "bottomline" than any presented in the SEIS, which the document should evaluate, but does not.

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343

**Esparza/Katz Productions**  
 11313 Gladwin St., Los Angeles, CA. 90049  
 (213) 471-6414  
 FAX (213) 471-4124

**AN OPEN LETTER TO THE PEOPLE AND GOVERNMENT OF NEW MEXICO**

I write this letter as a concerned citizen and as a businessman who has produced three films and other documentaries in your state: The Milagro Beanfield War, The Ballad of Gregorio Cortez and the Academy Award nominated documentary Aguada Martinez, among them. These films have brought millions of dollars to the New Mexican economy. Equally important, they have helped contribute to unprecedented national interest in the land and people of New Mexico.

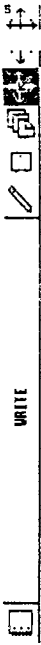
I am currently developing three projects set in New Mexico for production in the near future. We are also looking at office space and moving our base of operations to Santa Fe.

However, a major deterrent in our minds as we formulate our plans: the WIPP project. We feel that WIPP will make New Mexico a much less attractive place for film production as well as residence. WIPP may have a similar effect on all members of the film community and could deter production companies from filming in New Mexico. We call upon the citizens and legislators of New Mexico to stop WIPP now.

Sincerely,  
  
 Moctesuma Esparza

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13-Jun-89, EX-00344, PAGE 1 OF 2



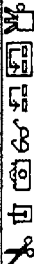
WRITE

I HAVE A MIGHTY, going on in my head  
 that I lost my life because of something somebody said  
 these people had the name of D.O.E.  
 and they said they had a gift for you and me

That they were working hard, to ship it to my home state  
 and they hoped, for not long, would I have to wait  
 You see these things have I fought to save my own life  
 and D.O.E., to take it away, they have no right

BY  
 EDITH  
 KENTONIA  
 SPRULDING  
 PG 1  
 6/15/89

line 184 col 73 size 123



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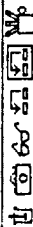
WRITE



What is this gift they have to give to me in such haste?  
In my backyard of H.A., they want to put NUCLEAR WASTE  
Don't tell me that this gift will do me no harm  
I am not stupid! and yesterday I was not born.

D.O.E., I'm not speaking to you out of hate-  
But I'm angry with what you want to do with my fate.

by Edith Kathryn Spaulding  
June 17, 1987



line 127 col 1 size 121



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TESTIMONY OF WILLIAM M. JACOBI  
VICE PRESIDENT AND GENERAL MANAGER  
GOVERNMENT OPERATIONS BUSINESS UNIT  
WESTINGHOUSE ELECTRIC CORPORATION

ON

THE DRAFT SUPPLEMENT TO THE ENVIRONMENTAL IMPACT  
STATEMENT FOR THE WASTE ISOLATION PILOT PLANT.

GOOD MORNING, I'M BILL JACOBI, VICE PRESIDENT AND GENERAL  
MANAGER FOR WESTINGHOUSE ELECTRIC CORPORATION'S GOVERNMENT  
OPERATIONS BUSINESS UNIT. MY ADDRESS IS WESTINGHOUSE  
ELECTRIC CORPORATION, P.O. BOX 355, PITTSBURGH,  
PENNSYLVANIA, 15230.

THANK YOU FOR THE OPPORTUNITY TO PRESENT INFORMATION FOR  
THE DRAFT SUPPLEMENT TO THE ENVIRONMENTAL IMPACT STATEMENT  
FOR THE WASTE ISOLATION PILOT PLANT (ALSO KNOWN AS WIPP),  
IN SOUTHEASTERN NEW MEXICO.

MY POSITION INVOLVES DIRECT MANAGEMENT AND OPERATIONS  
OVERSIGHT RESPONSIBILITY FOR THE MAJORITY OF DEFENSE  
RELATED FACILITIES THE CORPORATION MANAGES FOR THE

M. M. JACOBI TESTIMONY  
PAGE 2

DEPARTMENT OF ENERGY. THESE FACILITIES ARE: FEED MATERIALS CENTER, AT FERMALD, OHIO; IDAHO CHEMICAL PROCESSING PLANT, NEAR IDAHO FALLS; WEST VALLEY DEMONSTRATION PROJECT, WEST VALLEY, NEW YORK, AND THE WASTE ISOLATION PILOT PLANT NEAR CARLSBAD, NH. MY WESTINGHOUSE CAREER SPANS 35 YEARS, PRINCIPALLY IN THE NUCLEAR AREA. MY EDUCATIONAL BACKGROUND IS IN CHEMICAL ENGINEERING, AND I HOLD A PHD IN THAT FIELD.

AS IN ALL ITS OPERATIONS, WESTINGHOUSE IS STRONGLY COMMITTED TO SAFETY AND ENVIRONMENTAL PROTECTION AT FACILITIES WE MANAGE AND OPERATE FOR THE DEPARTMENT OF ENERGY. ITS OUR NUMBER ONE PRIORITY. WE TAKE SAFETY AND ENVIRONMENTAL PROTECTION VERY SERIOUSLY.

AS YOU KNOW, MANY GOVERNMENT DEFENSE FACILITIES HAVE RECEIVED NATIONAL--- AND OFTEN NEGATIVE--- ATTENTION IN THE NEWS MEDIA. THAT HAS BRED CONCERN, CRITICISM AND OERATE. SOME OF THE CONCERN IS JUSTIFIED. NO ONE QUESTIONS THE EXISTENCE OF ENVIRONMENTAL PROBLEMS IN THE NATION TODAY OR THE NEED FOR PROMPT RESPONSE. MANY OF THESE FACILITIES ARE OLD AND IN NEED OF UPGRADING AND ENVIRONMENTAL REMEDIATION. THIS IS EXACTLY WHY MIPP IS NEEDED TODAY. IT IS A TIMELY RESPONSE TO A NATIONAL PROBLEM.

M. M. JACOBI TESTIMONY  
PAGE 3

IN MY REMARKS TODAY I WILL DISCUSS THE ROLE THAT MIPP PLAYS AS A SPECIFIC SOLUTION TO AN ENVIRONMENTAL PROBLEM.

THE WASTE ISOLATION PILOT PLANT IS A DEPARTMENT OF ENERGY PROJECT ESTABLISHED UNDER PUBLIC LAW 96-164 TO DEMONSTRATE SAFE, PERMANENT DISPOSAL FOR TRANSURANIC RADIOACTIVE WASTE GENERATED BY DOE DEFENSE-RELATED FACILITIES.

TRANSURANIC WASTE IS GENERATED AS A BY-PRODUCT OF NUCLEAR WEAPONS RESEARCH AND PRODUCTION IN THE UNITED STATES.

THIS TRANSURANIC WASTE MUST BE SAFELY ISOLATED FROM OUR FOOD AND WATER SUPPLY. WHILE THIS WASTE IS SAFELY IN TEMPORARY STORAGE AT DEPARTMENT OF ENERGY FACILITIES TODAY, THIS IS NOT A VIABLE PERMANENT SOLUTION. TEMPORARY STORAGE DOES NOT PROVIDE LONG TERM PROTECTION OF THE ENVIRONMENT. WASTE STORAGE IS NOW CONSTRAINING OUR NATION'S DEFENSE PROGRAMS AND WILL IMPACT AMERICA'S ABILITY TO PRODUCE THE WEAPONS UPON WHICH OUR SECURITY DEPENDS.



J. M. JACOBI TESTIMONY  
PAGE 4

THE TRANSURANIC WASTES DESTINED FOR WIPP WILL BE EMPLACED A HALF MILE BENEATH THE SURFACE OF THE EARTH IN THE MIDDLE OF A 2,000 FOOT THICK SALT FORMATION.

THIS CONCEPT OF DEEP GEOLOGICAL DISPOSAL HAS BEEN THE FOCUS OF FEDERAL RESEARCH AND SCIENTIFIC EVALUATION FOR MORE THAN THIRTY YEARS. THE NATIONAL ACADEMY OF SCIENCES HAS RECOMMENDED THE DISPOSAL OF TRANSURANIC WASTES IN DEEP GEOLOGICAL FORMATIONS LIKE THOSE FOUND AT WIPP BECAUSE THEY PROVIDE PERMANENT, SAFE ISOLATION OF TRANSURANIC WASTE FROM THE BIOSPHERE.

THE WIPP SALT FORMATION OFFERS A NUMBER OF ADVANTAGES:

- o THE WIPP FORMATION IS LARGE AND STABLE. THE SALT BED IS OVER 500 MILES LONG, 200 MILES WIDE AND IS 2000 FEET THICK. IT HAS BEEN THERE FOR 225 MILLION YEARS. ITS VERY PRESENCE INDICATES THAT WATER IS NOT FLOWING THROUGH IT. IT IS SO DRY IN THE WIPP EXCAVATION THAT WE PUMP WATER FROM THE SURFACE TO SPRINKLE THROUGH THE FACILITY TO HELP MINIMIZE THE SPREAD OF SALT DUST.

M. M. JACOBI TESTIMONY  
PAGE 5

- o THE WIPP SALT FORMATION HAS GOOD THERMAL CHARACTERISTICS, AND IS BASICALLY UNAFFECTED BY THE HEAT GENERATED BY RADIOACTIVE DECAY OF THE WASTE.

- o THE WIPP SALT FORMATION BEHAVES MUCH LIKE A PLASTIC. THE EARTH'S PRESSURE WILL CAUSE THE SALT FORMATION TO, OVER TIME, ENTOMB THE WASTE MATERIAL. THIS PERMANENTLY ENCAPSULATES THE WASTE INSIDE A ROCK HARD SALT FORMATION, EFFECTIVELY ISOLATING THIS WASTE FROM OUR BIOSPHERE FOREVER.

THERE ARE ONLY A FEW REMAINING QUESTIONS TO BE ANSWERED ABOUT THE SUITABILITY OF WIPP FOR WASTE DISPOSAL. I BELIEVE THAT THE BEST WAY TO ANSWER THESE IS THROUGH THE PROPOSED 5 YEAR TEST PROGRAM USING RADIOACTIVE MATERIAL. DURING THIS FIVE YEARS OF TESTING, TRANSURANIC WASTE WOULD BE EMPLACED UNDERGROUND. DATA WILL BE COLLECTED TO EVALUATE THE VIABILITY OF THE WIPP FACILITY. THE WASTE WILL BE MAINTAINED IN A RETRIEVABLE FORM DURING THE TEST PHASE.

W. M. JACOBI TESTIMONY  
PAGE 6

ONLY AFTER A COMPLETE DEMONSTRATION OF THE REPOSITORY'S SUSTAINABILITY WILL WESTINGHOUSE ENDORSE THE DECISION TO MAKE WIPP A PERMANENT DISPOSAL FACILITY.

I WANT TO EMPHASIZE THAT FOREMOST IN THAT DECISION WILL BE WIPP'S ABILITY TO MEET ALL APPLICABLE STATE AND FEDERAL STANDARDS.

THE WESTINGHOUSE ELECTRIC CORPORATION IS FIRMLY COMMITTED TO HELPING SOLVE OUR NATION'S NEED FOR SAFE, PERMANENT NUCLEAR WASTE MANAGEMENT. WE ARE EMPLOYING A MOST RIGOROUS AND SYSTEMATIC, SCIENTIFIC AND ENGINEERING APPROACH TO SAFE PACKAGING, WASTE TRANSPORTATION, ROUTE SELECTION, EMERGENCY PREPAREDNESS, AND WASTE EMPLACEMENT. OUR QUANTITATIVE PROBABILISTIC RISK ASSESSMENTS HAVE ANALYZED THE 56 CRITICAL SAFETY, SECURITY AND ENVIRONMENTAL PROTECTION SYSTEMS TO DETERMINE THE PROBABILITY AND IMPACT OF MULTIPLE FAILURES. THE STUDY CONCLUDES THAT, IN ALL PROBABILITY, WIPP CAN BE OPERATED SAFELY, WITH NO PUBLIC IMPACT.

THE WASTE ISOLATION PILOT PLANT HAS GREAT POTENTIAL AS A PERMANENT MEANS FOR ACCOMPLISHING SAFE DISPOSAL OF TRANSURANIC WASTE.

W. M. JACOBI TESTIMONY  
PAGE 7

SAFE ISOLATION OF THESE TRANSURANIC WASTES IS AN OBLIGATION BOTH THE DEPARTMENT OF ENERGY AND WESTINGHOUSE TAKE VERY SERIOUSLY. WIPP EMPLOYEES UNDERSTAND THAT SAFETY IS EVERYONE'S NUMBER ONE PRIORITY.

BASED ON IN-DEPTH READINESS REVIEWS AND INDEPENDENT SAFETY AND ENVIRONMENTAL OVERSIGHT, I AM PERSONALLY CONFIDENT THAT WIPP CAN RECEIVE WASTE SAFELY.

THANK YOU FOR THE OPPORTUNITY TO COMMENT ON THE WASTE ISOLATION PILOT PLANT.

Debra J. Finkle

Good Morning

6/16/89

What a way to start the day!

My intelligence supports 95% of the testimony I heard yesterday.

New Mexico is a beautiful place with clean air in the majority of the state. We have some problems with our water and we don't want to need problems with nuclear waste!

It is James Sabatario they have made a major breakthrough in the recycling of plutonium through gaseous feed, commonly known as "free feed". Everyone thinks Jim crazy when I mention it, but, really Jim not! KIB-71 Channel 4 broadcast the news on it on May 1, 1989 and the Albuquerque Tribune ran an article about it on May 15.

7.15.3-11

There is another plant they have found that will deal with other hazardous waste. More information can be had from Jeff Schwartz, Duille Robinson, Ken Adams Laboratories.

Radioactive waste should be kept where it is, until it can be recycled. More money should be funded to Los Alamos Laboratories. Specially for this project. Keep the money D.E. wants to store in the barrier, stop their production. Give the \$ to this industry to develop solar & wind energy, methane and electric cars.

Am strongly opposed to all this expensive waste being in one spot - plus the national defense thought of protection from terrorism?

7.15.3-11

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Department of Energy.  
The people of Santa Fe are feeling a great deal of trauma regarding the proposed WIPP route in our state and the WIPP waste site near Carlsbad. Transportation of wastes and storage of wastes in Santa Fe and other major population centers must be thwarted.

The people of New Mexico do not want the Waste Isolation Plant in our state. It has been proven beyond a doubt that brine seepage has already occurred at the site which was abandoned in 1975. This contaminates our water as well as Mother Earth and our bodies.

Environmental issues and peace concerns are of utmost importance on our planet. They must be addressed now.

I oppose the Waste Isolation Pilot Plant, production of Plutonium, other radioactive elements and hazardous chemicals and heavy metals.

I speak now that New Mexico may not forever hold America's nuclear waste.

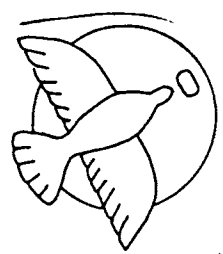
The Land of Enchantment must be heard and we must be with her on a daily basis - blessing her, refilling her with love and life that she so freely gives.

I say UP to WIPP!!!

*Mary Jose Ruff*

Mary Jose Ruff  
1544B Avenida de las Americas  
Santa Fe, New Mexico 87505

June 15, 1989  
DOE Public Hearing - WIPP



...and I shall be done unto you as you believe...

1-2

Framed picture of scenic view submitted as evidence.  
Caption reads "and it shall be done unto you as you believe..."

"Subject WIPP - Just say no, New Mexico"

Dates: 5/15/89

"Issue 6 - you as you believe."

1-2

James A. Dreisbach-Tovle  
3204 Siringo Road  
Santa Fe, NM 87505-5050

June 15, 1989

Good morning,

I would like to thank you all for this opportunity to speak at these hearings today.

First I would like to address the fact that we (and I mean the people of the world) have a responsibility to stop building nuclear bombs. Besides being an immoral occupation, the task of inventing more efficient ways of murdering millions of lifes, we already have more radioactive waste than we can deal with. Even if WIPP opens as planned it will hold only 10% of our defense generated waste. The by-product of building nuclear weapons. That figure does not include the radioactive waste produced by the commercial industry, which produces nuclear powered electric energy. In fact if we are to contain all of the radioactive waste in the United States today, our government would have to build a minimum of 99 identical WIPP sites. Where are all of those facilities going to be located? And by the time that many more storage facilities are built we will have generated more nuclear waste. So you see WIPP is not the final answer. The fact that we as a people are scrambling to find a solution to our every growing defense waste problem, reminds me of a recent bumper sticker that I saw. The bumper sticker read "THE USA HAS 240,000 BOMBS : THE USSR HAS 240,000 BOMBS. DO YOU FEEL

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5-2-2  
9-1

SAFE YET?!" Why do we need enough bombs to destroy our planet 100 times over?

To me the solution is a two fold process; first stop the manufacture of nuclear waste, second research a method of neutralizing that waste. If we as a nation could only invest a portion of our enormous defense budget to research this subject I have no doubt that the problem would be resolved in a matter of a couple of years.

We will never be safe from the radioactivity as long as it is on earth. The Department of Energy has developed a Truck container for transportation of the waste, which they feel is a safe container. The truth is that the container emits radioactivity. There is no substance on earth that can completely shield the radioactivity. Concrete and lead will slow the emissions of the radiation, but will not halt them completely. Medical science has informed us that any dose of radiation has ill effects. We now know that even very small amounts of radiation over a period of time can be lethal. And if not lethal or harmful to us it more often then not effects the reproductive system resulting in birth defects or worse. We know for a fact that infant mortality has gone up tremendously in every case where there has been a substantial radioactive leak. The fact that the waste is going to be under ground only delays the escape of harmful radiation. It might not happen in my life time but we as a people are responsible for all the generations that will come. The harmful effects will last 240,000 years. Man and his present

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52-2

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7.14-10

technology can not build a container out of any material that will last even half as long as the radiation will be harmful. The fact that we are going to bury the waste only puts the harmful effects out of sight and out of mind, at least for a short while.

I don't want WIPP to open because it is in my state, I don't want WIPP to open because then the world will have put off our nuclear nightmare, by burring all the waste in darks holes, on the generation not even thought of yet.

7.13.1-8  
7.14-10

1-2

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Friday, June 16, 1989

My name is Guy Fritsian. 996 Passo del Sur, Santa Fe, 87501. I am a Santa Fe business owner. I have a daughter who goes to school several blocks from the proposed WIPP route.

This summer my daughter turns 16 and, as a beginning driver, she will be travelling to school on the same street with the trucks containing nuclear waste. This horrifies me. I cannot let this happen! But what are my choices? Do I transfer her to another school? No. There is no other school in our district. My only choice is to come here before you to remind you of the insanity of trucking nuclear waste through cities.

In the DOE's original final environment impact statement of 1980 (pg. 6-18 and 6-19) 75% of these shipments were to be by rail and 25% by truck. The DOE's own calculations show that fewer fatalities and less radiation release would result if the DOE were to maximize shipments by rail. Now, in the draft SEIS (pg. 3-14) the decision is to ship 100% by truck. Why is the DOE not using the safest method of transport?

The DOE has contracted the Dawn Trucking Co. of Farmington, NM because they were the lowest bidder. However, this trucking firm has NO prior experience transporting nuclear waste. In addition, this firm does not employ union drivers. Such firms tend to have significantly less protection for their drivers in the event that a driver may seek to object to unsafe working conditions.

I say NO to trucking nuclear waste. Leave the waste where it is. Slow down or stop your nuclear warhead production until you know what you're doing. 22,000 nuclear warheads should be sufficient. Let's all live a little longer!!!!

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7.3.3-3  
7.3.5.1-12  
7.3.5.2-4  
7.15.4-2

7.3.2-4

7.3.2.1-4

1-2

STATEMENT OF CONSUELO LUZ AROSTEGUI, 207 MONTOYA ST., SANTA FE, N.M.  
87501

FOR D.O.E. HEARINGS ON W.I.I.P. JUNE 16, 1989

My name is Consuelo Luz Arostegui. I am President of the Hispanic Radio Network, a national syndicator and producer of Spanish radio programming based in Santa Fe. Why the unfortunate lack of participation by N.M. Hispanics in these D.O.E. hearings? Because the N.M. Hispanic community has not been properly informed about W.I.I.P. There has been no outreach to Hispanics by the government. As an Hispanic I protest the fact that the Supplement to the Environmental Impact Statement was not issued in Spanish.

- The New Mexico State Constitution specifically requires that all materials published by governmental entities and all materials related to elections and issues of public debate be published in Spanish as well as English. This is a civil rights issue.

- Since you did not publish this report in Spanish I conclude that DOE deliberately chose New Mexico for the WIPP project because of New Mexico's large Hispanic population.

- New Mexico is the only state in the nation where Hispanic land ownership is substantial, the only state in the nation where the Hispanics are a land-based political entity.

- Could this fact have influenced the DOE's political decision to make New Mexico a national sacrifice area? Or is it a racist decision in order to take the public relations advantage of a possible perception among Americans of New Mexico as a quaint, backward state of Hispanics and Indians and therefore dispensable.

- I propose that the Government provide a Spanish version of a new Environmental Impact Statement which should by law include all results of studies by all independent scientific groups.

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DOE HEARING - CONSUELO LUZ AROSTEGUI

Page Two

In talking to a 70 year old Hispanic woman the other day about WIPP. What she had to say about the arms buildup that is creating all this nuclear garbage was an old Spanish saying "Bueno es Cilantro, pero no tanto". Cilantro, (a strong tasting herb), a little is good (a few weapons are good) but too much spoils the food.

- Everything has a positive side. Let us see this as an opportunity a magnificent opportunity for a complete re-evaluation of the nuclear industry. It is time. \*\*\*(See Addendum to Page two)

- ~~Take a day~~ ~~live on the WIPP route.~~ I live on the WIPP route.

SFIS' depiction of a worst-case accident is misleading. It describes an accident involving low-level waste - it fails to take into account the high level waste which will make up 20% of WIPP shipments. And what if the low level plutonium waste catches fire in an accident? It will spread far and wide.

- I heard testimony here yesterday that the projections are that property along the WIPP route will drop <sup>about</sup> 20 to 30% when the waste starts coming, a truckload every 90 minutes, for many years.

- Therefore, I am formally requesting that the US Dept. of Energy set aside \$30,000 in escrow to indemnify me for the loss in value to my property caused by the DOE's failure to construct a by-pass.

- I demand to receive formal notification and escrow documents from the DOE indemnifying me against the above stated loss in real estate value or I shall file suit in federal court seeking the same and,

- I caution the DOE that WIPP will result in the filing of hundreds of thousands of lawsuits from other property owners in the 23 states with property adjacent to WIPP routes, and that it would be far more prudent for the DOE to explore other alternatives such as the railway.

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\*\*\*\*  
DOE HEARINGS- CONSUUELO LUZ AROSTEGUI (Addendum to Page Two Paragraph Two)

- Why is our government subsidizing the disposal of nuclear waste generated by privately owned commercial power plants?
- Why doesn't the DOE focus its funds and resources on the promotion of foreign renewable energy sources such as solar power? It appears that solar power gets less than one percent of the funding and liability load that nuclear power gets. How can I and other citizens convince the Dept of Energy to change its priorities in favor of solar power and energy conservation?

9-9

9-3

DOE HEARINGS - CONSUUELO LUZ AROSTEGUI

Page 3

- (I am an artist, a singer and composer) Music has been used throughout the ages as a universal language, a sacred language that passes through the heart -"el corazon". The mind without the heart has created a world of violence and the degradation of humans and the environment. The heart desperately needs to catch up with the mind if we are to save our raped and battered Earth. I wrote a song referring to HIPPI several years ago. With due respect I would like to end with a message through the heart that the power of love and compassion, of caring in all of our hearts is what will emerge victorious, shining on a healed and glorious Earth.

9-1

"Y el viento nos canta (And the wind sings to us)  
 Y la tierra se espanta (And the earth is frightened)  
 Quieren enterrar su veneno (They want to bury their poison)  
 En nuestro terreno (In our piece of earth)  
 Pero en el pueblo yo espero (but in the people I have faith)  
 Que el alma vencerá al dinero (That the soul will overcome greed and lies)  
 Porque aunque todo lo veo (Because although I see it all)  
 Todavía yo creo (I still believe)  
 En el amor (In the ultimate power of love)



MY NAME IS SARAH LOVETT. MY ADDRESS IS POB 5859, SARYA ER, NEW MEXICO. 87502.

I SUPPORT THE NO-ACTION ALTERNATIVE OF THE WIPP-SEIS DOCUMENT.

NO TECHNOLOGY IS FREE OF RISKS, BUT IN THE CASE OF RADIOACTIVE MATERIALS, THESE RISKS ARE UNPRECEDENTED IN HUMAN HISTORY. SCIENCE DOES NOT REALLY KNOW THE EFFECTS ON HUMAN HEALTH OF LOW-LEVEL OR LONG-TERM EXPOSURES. WE NEED ONLY TO LOOK BACK TO THE TESTING PROGRAMS IN THE 1950'S TO IMAGINE HOW MUCH MORE WE WILL KNOW 30 YEARS FROM NOW.

WE DO KNOW THAT HOWEVER PERFECT OUR ENGINEERING MAY BE, WE HAVE NOT BEEN ABLE TO ENGINEER AWAY HUMAN ERROR. THE ACCIDENT MODEL FOR CHERNOBYL PREDICTED THE CHANCE OF ONE ACCIDENT IN 10 MILLION REACTOR OPERATING HOURS. AT THREE MILE ISLAND, ONE CHANCE IN 3 MILLION. FOR THE EXXON VALDEZ EVENT, THE MAXIMUM SPILL WAS CALCULATED AT 10 THOUSAND GALLONS, NOT THE 10 MILLION THAT ACTUALLY OCCURRED.

THE ENGINEERS WHO MADE THESE PREDICTIONS WERE NEITHER RIGHT NOR WRONG. ACCIDENTS ARE NOT TECHNICAL EVENTS, BUT HUMAN EVENTS. THEY ARE THE SHIP CAPTAIN WITH A DRINKING PROBLEM, THE OVER-TIRED OPERATORS, THE TECHNICIANS WITH SOMETHING ELSE ON THEIR MINDS, THE SHUTTLE BOOSTER "OMRING."

1-2

7.35-1  
7.131-8  
7.133-1

IT IS SAFE TO PREDICT THAT SOME TYPE OF ACCIDENT OR MISCALCULATION WILL OCCUR WITH THE WIPP PROJECT. AN INSIDIOUS ONE, SUCH AS THE SLOW CONTAMINATION OF A VITAL GROUNDWATER SYSTEM; OR A SPECTACULAR ONE, SUCH AS A RUPTURED TRUPACT TUMBLING THROUGH A CROUNDED SCHOOLYARD.

THE SEIS DOCUMENT DOES NOT FACTOR IN HUMAN ERROR IN ANY OF ITS MODELS TO CALCULATE ACCIDENT OR EXPOSURE RISKS.

IT SEEMS TO ME THE ISSUE IS HOW TO MAKE THE BEST OF A BAD SITUATION: WE HAVE CREATED NUCLEAR WASTE MATERIALS; WE HAVE NO FEASIBLE WAY OF NEUTRALIZING THEM. NOW WE HAVE TO MAKE A DECISION HOW TO SAFELY STORE THEM WITHIN THE LIMITS OF PRESENT TECHNOLOGY.

TO COMMISSION WIPP IS THE WRONG DECISION. THE PROJECT COMBINES BOTH THE GREATEST SHORT-TERM RISK - TRANSPORTING THE MATERIALS THROUGH POPULATED AREAS - AND THE GREATEST LONG-TERM RISK, PUTTING THE MATERIAL IN AN ENVIRONMENT DIFFICULT TO VISUALLY MONITOR, RETRIEVE FROM AND MAINTAIN.

SEIS ALTERNATIVE 3 IS THE MOST FEASIBLE SOLUTION: TO CONTINUE TO STORE THE MATERIALS IN STATE-OF-THE-ART CONTAINERS IN SURFACE FACILITIES, AT THE PRESENT SITES. THE SINGLE GREATEST TECHNICAL IMPERATIVE IS THE DEVELOPMENT OF SAFER AND SAFER ENGINEERED SURFACE CONTAINERS, NOT EXPERIMENTATION WITH TRANSPORT SYSTEMS AND UNPREDICTABLE GEOLOGICAL STRUCTURES.

7.35-1  
7.131-8  
7.133-1

1-2  
26-2  
33-1

THE KEY VALUE OF ALTERNATIVE 3 IS THAT WE WILL NOT TAKE THE APPALLING AND UNNECESSARY RISK OF MOVING THE MATERIALS FROM ONE UNSATISFACTORY LOCATION TO ANOTHER. THE RISK OF HUMAN ERROR WILL ALWAYS BE WITH US, BUT WE REDUCE THOSE RISKS IMMENSURABLY BY EMPLOYING THE SIMPLEST SOLUTION.

THERE ARE FAR TOO MANY DOUBTS ABOUT WIPP TO GO FORWARD WITH THE PROJECT. NEW MEXICO IS UNPREPARED TO DEAL WITH A TRANSPORT CONTAMINATION ACCIDENT. FIRST RESPONDERS - THOSE PRIMARY PEOPLE CALLED TO THE SCENE OF AN ACCIDENT - LEGALLY ARE REQUIRED TO RESPOND. THE DOE HAS GIVEN ASSURANCES OF DETAILED EMERGENCY RESPONSE PLANS. THERE IS STILL THE HUMAN FACTOR TO CONSIDER. ONE EMERGENCY MEDICAL TECHNICIAN, WHO IS A MEMBER OF A LOCAL FIRE DEPARTMENT AND A FIRST RESPONDER, TOLD ME, "I PROBABLY WOULD NOT GO IF I KNEW IT WAS A HAZARDOUS MATERIAL ACCIDENT, EVEN THOUGH I'M REQUIRED BY LAW."

WE'VE HEARD THE TESTIMONY FROM HEALTH OFFICIALS ABOUT THE LACK OF EQUIPMENT AND FACILITIES TO HANDLE RADIOACTIVE CONTAMINATION. ONLY TWO NEW MEXICO HOSPITALS - ROSWELL AND CARLSBAD - HAVE BEEN PROVIDED WITH THE APPROPRIATE EQUIPMENT. ST. VINCENT'S HOSPITAL IN SANTA FE WILL USE A UTILITY CLOSET TO HOSE DOWN ACCIDENT VICTIMS. THE CLOSET WAS NOT DESIGNED FOR THIS PURPOSE. IT DOES NOT HAVE A SEPARATE WATER DRAINAGE SYSTEM NECESSARY TO CONTAIN RADIATION. VICTIMS WILL WALK FROM THIS CLOSET ACROSS THE HALL IN PLASTIC

1-2

7:14-2

7:12:9-1  
7:12:9-2  
7:12:9-3  
7:12:9-5  
7:12:9-7

BAGGIES TO A ROOM DESIGNED FOR ORTHOPEDICS.

BOTH THE CHIEF EXECUTIVE OFFICER OF ST. VINCENT'S AND THE MEDICAL DIRECTOR OF THE EMERGENCY ROOM HAVE EXPRESSED PRIVATE DOUBTS ABOUT THE HOSPITAL'S ABILITY TO HANDLE ACCIDENTS WITH MAJOR TOXINS. ONE EMERGENCY ROOM PHYSICIAN WAS BLUNT ABOUT IT: "IF THERE WAS A LEAK AND MORE THAN TWO PEOPLE WERE CONTAMINATED, WE'D BE PLOUNDERING --- WE'D BE GROPING LIKE PIGS IN THE MUD."

THE FIRST ORDER OF PUBLIC BUSINESS FOR THE DEPARTMENT OF ENERGY, I BELIEVE, IS TO CLEAN UP AND RESTORE ITS EXISTING STORAGE FACILITIES, AND PROVE THAT THE DEPARTMENT AND ITS CONTRACTORS CAN SAFELY MAINTAIN ISOLATED WASTE ON THE SURFACE FOR ONE LIFETIME, BEFORE IT ATTEMPTS BELOW GROUND STORAGE FOR 3,743 LIFETIMES.

IN THE END, THERE MAY BE NO SATISFACTORY TECHNICAL SOLUTION AT ALL, BUT ONLY A HUMAN ONE: TO STOP SPENDING OUR LIMITED RESOURCES ON NUCLEAR WEAPONS AND NUCLEAR-GENERATED ELECTRICITY, AND START INVESTING IN ENERGY CONSERVATION AND NUCLEAR DISARMAMENT. I BELIEVE WHAT APPEARS TO BE NEGATIVE RESISTANCE TO WIPP IN NEW MEXICO IS REALLY THE POSITIVE VISION OF THOSE HOPES AROUND THE WORLD.

3:6-1  
5:2-1  
5:2-2  
9-2  
9-3

# STANDARDS

# E.P.A.

WIPP must meet new  
B  
e  
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t

Carole Mastel

radiation contamination is out one link in a chain of  
destructive practices which are threatening the future of  
our existence. Each link in this chain is so crucially  
important that we cannot just turn the care of our earth  
over to our politicians or the EPA, or hope that God will  
somehow take care of things.

... we must take very seriously our  
responsibility in our fledgling global village. Nurture our  
vision and find our voices. This is the most crucial time  
for life on this planet. We all have a part to play in  
making sure our political renewal does not fail.

... your voice is especially powerful in this  
effort. Whether women have children or not, we have the  
great power inside our very cells. We can hear clearly  
the cries of the earth, erasing us deadly poisons seep  
into her skin, which is also our skin.

... what do we do with all the nuclear poisons we've  
created? It's true we have an enormous problem. It's also  
true we have an enormous wealth of scientific brilliance  
waiting to be used. You are facing a moral imperative. If you  
fail to condone to our government, free yourself for life's  
work. You can create alternatives to geologic disposal of  
our nuclear waste.

... the production of low waste is an integral part  
of the solution to our problems. Let the EPA claim a  
delay in action. Let the EPA claim a  
... create national security problems.  
Justify activities that seem to be making the very life blood  
out of not only our environment, but our economy and our  
national soul.

... I've heard many people say, "I think we need a few more  
catalyzers before people will wake up." "Friend, wake up now!"  
he can pass this devastated planet down to his children. How  
he can give them hope for their future, whether they will  
have decent water to drink. I wake up crying from a dream  
of a small, delicate silver fox with blue eyes, steadily  
staring looking at me, pleading for me to fight for it's  
survival. Its way of existence is threatened and it's life  
every day seems are breaking down.

... this must be like national responsibility. We must  
take the lead and... optimum conditions for life to  
thrive and evolve. Build a... wisdom and social responsibility.

... I have a message for you, employees. Please take a  
long walk in our forests. Gaze at our magnificent skies. Sit by  
a stream. See all those plants there? Drink some water from  
our medicines. Close your eyes. Listen to the birds sing, sit by  
to the wind in the trees. Breathe the fresh, clean air. Listen to  
heart which caresses all this beauty, this wholeness, this balance  
which is called ecology. Allow this stirring in your heart to  
sedimentate through your body and make its way to your mind. You  
have loved ones, perhaps grandchildren. They will not be immune  
to a changed environment, as you will not be. We must find solutions  
to our problems. Let us all cooperate together to  
find the solutions to our problems. Thank you.

9-1

36-1  
53-1

36-1  
36-1

31-8



Stanley Berne  
P.O. Box 4505  
Santa Fe, NM 87502-0465

505 983 8484

STANLEY BERNE

Testimony given in Santa Fe at Department of Energy hearings, June 1989.

One of the exciting things about America is what is happening here today. We are having public hearings about a profound issue that affects all of our lives: the question of what to do with a devastating waste, the product of our nuclear industry.

I am a veteran of WWII who returned from the fighting in the Philippines, and I am one who was wounded in that struggle, so, I am a disabled War Veteran, and I am proud to have been awarded the medal of the Philippine Liberation.

As a member of the Occupation Army in Japan under Douglas MacArthur, I had the duty assigned to me to visit Hiroshima. I saw Hiroshima after we destroyed it, and I knew 3 things about that destruction, since I was directly affected by it.

One, was that it had to be done, since we had met the Japanese in battle and found him implacable and stubborn. There was no other way to persuade them that they were defeated by us -- there was no other way to persuade them to cease the killing and stop the war.

Two, President Truman did the right thing to give the order to drop the bomb -- and Robert Oppenheimer was a great patriot and a hero of WW II in having brought the Bomb into being at Los Alamos.

I knew with all my heart that it was right, because I was alive, and all of my buddies were alive, our company was alive, our regiment was alive and

well, and peacefully occupying Japan.

I well know the devastation of the Atom Bomb. I see its power at Hiroshima. I stood at the edge of that city and saw a city that had been turned into powder -- a pulverized and smoking city.

\*\*\*\*\*

We are not debating the issue of the Atom Bomb, here today.

Now, we must see the Bomb as a blessing in WWII, since, as President Truman knew, it saved our having to invade Japan, and thus it saved, probably, a million and one American soldiers. I was that "One."

In 1989 we must consider what has grown out of that "blessing," created by Robert Oppenheimer at Los Alamos.

Today, we are faced with a "curse." We have to deal with a virtually indestructible man-made element that is called "Einsteinium," a transuranic element, atomic number 99.

The D.O.E. does not know how to isolate this element, which once made, as a product of either making further numbers of atomic weapons -- or is a product of nuclear fission used in the manufacture of electricity -- the D.O.E. does not know, for a certainty, how to dispose of this element. It claims to know this, but failure after failure shows us, it cannot be safely isolated.

I, for one, think the D.O.E. is not an evil agency. Many many Americans have now come to believe ~~that~~. I think they have been given a mission, to move and bury Einsteinium #99 to the best of their ability, and to use the best technology so far developed.

But -- their ability, and the available technology, have so far failed them, and therefore, failed us.

The transportation of Einsteinium #99 poses serious threats and dangers to the 49 states and the communities through which the D.O.E proposes to move this material.

If the D.O.E. wants friends and supporters in its hour of greatest need, and if our belief in Government, our trust in our own Government is not to be seriously eroded further:

Then the only answer must be -- to leave the debris where it is being generated so as not to destroy and pollute any more of our precious land, and so as not to endanger the precious people of our great nation.

7.3.3-10  
7.3.5.4.3

1-2

Comments of Hugh K. Jennings  
DOE WIPP Hearing, 16 June 1989

My name is Hugh Jennings. I'm a retired nuclear engineer from Los Alamos. I would like to address the Alternate Actions to WIPP, as listed in the SEIS. These are, in order of increasing scale: No Action; and Alternate Action, consisting of bin-scale and possible underground room-scale tests. Bin-scale tests use "sealed bins" where FEU wastes and other materials are stored in order to determine chemical and physical interaction". In other words, laboratory tests aboveground.

The listing now of 1. No Action option, which the DOE rejects, seems a bit whimsical, since the DOE has taken a lot of action: namely, a 700 million dollar hole in the ground.

The DOE also rejects the Alternate Action proposal of laboratory bin-scale tests. One objection is that it would delay using WIPP. My side of the coin is that the delay would be a blessing-- it might force the DOE to invent tests of aboveground repositories. As to delay, the DOE itself created the problem, since it could and should have done bin-scale tests a decade ago. With these tests they would <sup>now</sup> clearly have had data relevant to further large-scale action.

Another DOE objection is the cost (about 3.5 million) of a bin-scale test facility. My intuition tells me that it probably is less than the cost of the paper which the DOE has generated in the last decade. At any rate, it is a minute fraction of the cost of WIPP, and an appropriate expenditure as a starting point.

The SEIS also mentions the option of going from the bin-scale tests aboveground to room-scale tests at the WIPP, underground. But if they're serious about this, they certainly have created a room on a grand scale.

It seems to me that the analysis of WIPP has relied heavily on computer models. It brings to mind the old adage: "Computers

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3.6-2  
5.3.1-1  
5.3.2  
5.3.3

1-3  
5.3.1-1  
5.3.1

2.3.1-2  
7.3.1  
7.14.6

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don't lie, but liars can compute. Unrealistic results are inevitably linked to unrealistic assumptions. Some hard laboratory data on the interaction between salt-dome geology and radioactive waste would have generated some confidence in the public that is now clearly lacking. It is still not too late to make a more reasonable step-wise approach, to put the scale and cost of the research in its proper order.

In summary, what I'm really trying to say is the following: now is the critical time when we have the opportunity to pause and look at the fundamental notions about WIPP. First, let's stop making bombs and stop generating the associated waste. The status quo about storing waste looks pretty good. Let's put WIPP on hold. The time scale for opening it that the government seems to insist on is really artificial. Now's the time to look at it before we do something irreversible. Let's look at the research and effort that's gone into it as of now, see if it's adequate, and see if it's our best effort. All this is the least we can do for future generations.

Thank you for allowing me the time to present my views.

5.1-5  
5.3-1  
7.14-6

3.6-1

1-2

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Lynn Clayton

My heart goes out to people who live in such fear and misunderstanding that the heading someone is the only choice they have is to let the remains of someone's waste in their back yard. I know you feel it's fear itself. That is the saddest thing I've ever seen. It is not a rational choice. It is a choice made in the light of the present global crisis. I ask, what truth is so forced upon us, the destruction force present in Earth is making equal to the very fact that it is coming to be? It is the height of irony and absurdity that you would want to even look at that could destroy the entire Earth, rather than the sense of wanting peace, like everyone trying so desperately to feel good? Please, if you don't even feel love, that WIPP could even be considered a solution for disposing of WIPP is a reflection of the extent to which the real problems

3.6-1

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Lynn Clayton

has been done. The real problem is there's  
no other thing as "disposal" of it! We  
live in a closed biosphere! The Dept. is  
weak - the death about there's numbers else  
to get it! WAKE UP!!

Perhaps you would rather die unconsciously  
in your sleep, but if somebody is going  
slightly concerned, you have no money  
of a lot for life, you want to do take the  
Earth down with you.

The SES was written in the DOE's sleep +  
is just as meaningful as that. In reviewing  
the document of the DOE's record, I'm reminded  
of a quote made by the ordinary poet, William  
Blake: "The weak in courage are strong in  
courage." Significantly, the Latin words for the  
word "survivor" means heart. How you  
people are heart? At this point, I am at least  
than you poor in the public that you have

3.2-1

3.2-1

Lynn Clayton

thus human quality. If you continue  
to deny the danger imposed upon the  
people and the Earth by the nuclear  
waste mass you're creating, your blame  
of negligence will be too late. How  
many countries? At least comparable  
to that of West Germany will not be  
allowed to be repeated.

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3.2-1

My name is Elfreda Russell, P.O. Box 115, Denver, CO 80209

I have come to these hearings as a witness---one who has experienced firsthand the contamination of the Denver-Boulder metro area by the activity and possible collusion of the Denver-Boulder metro and DOE. That the environment around metro Denver-Boulder area has been violated and poisoned I have testimony; the Denver City Council in its proceedings have confirmed that there are genetic mutations of animals around the plant such as incorrect number of toes and other maladies. These observations have parallel confirmation by other persons in PA near Three Mile Island. I read for you a description of these maladies:

The complaints from farmers like Conley, which turned from a trickle to a flood after the accident, testify to whole litters of cats born deformed, to chicken legs that would not hatch, to a dog born a quarter-mile from the plant without eyeballs. . . more than a dozen cows at a single farm mysteriously died . . . in another, 500 exotic birds expired in mass at an Anurville aviary. . . one 25 year old bird gave birth to a hydrocephalic child with a single eye. . . one of its foreheads; another baby was born with its brain outside its head . . .

A friend of mine, who lived near Rocky Flats also gave birth to a baby born with its brains outside its head. And gigantism of plants near Three Mile Island and Chernobyl are now common place observations. I will read briefly a description of these plants:

The local press has reported the finding of a 55 lb. mushroom, duly submitted to Guinness. There have been tomatoes the size of cataloupes, cucumbers the size of large zucchinis.

In Chernobyl they describe plants as suffering from gigantism, Some tree branches and leaves are abnormally formed and stems tend to split . . . tree buds have turned

3-12  
3-2-1  
3-2

into leaves in seasons when they should lie dormant . . . the population of elk and wild boar seems to have dropped.

These genetic maladies are part of an overall pattern of genocide that is being practiced by the U.S. govt. represented by DOE and other countries involved in nuclear power. Land owned by my family and other landowners has been contaminated by Plutonium as evidenced by the soil samples we took. A suit against DOE has been settled, yet the land is now uninhabitable for 240,000 years. The city where I was born, once described as a Shrangri-lah, has the highest reading of plutonium in its air in the world, even higher than Chernobyl. And yet, Rockwell and other federal participants high up in DOE persists in lying and criminally gassing the metropolitan community in the Denver-Boulder area.

In 1987, Rockwell secretly burned plutonium over the area. I enclose Colorado Department of Health knew nothing of the burn. I enclose documentation. The most recent criminal act is the incinerating of material, including plutonium, no doubt, in the middle of several nights in December, 1988. Infrared photos were taken by the FBI that has been investigating the Flats since 1987. Rocky Flats promised in 1987 not to incinerate plutonium and other radionuclides over the metro area with a new incinerator. It violated violently this agreement in December of 1988. I believe that the metropolitan population of Denver-Boulder should massively file suit against DOE for criminal action toward their lives and future lives based on the genocide codes passed at Nuremberg. Now DOE is opening a new scenario of nightmarish proportions, spreading Rocky Flats throughout the United States. I believe that there should be a reconvening of a world court that monitors genocide practices toward nature by countries, including the United States.

3-12  
3-2-1  
7-13-26  
7-13-1-8  
9-2





TRUBLE AT ROCKY FLATS

# FBI: Flats burned waste secretly

By FOR LINDAVY and JAMIE BAY  
The Associated Press



FBI photo with infrared camera's reflected night burning of toxic wastes at Rocky Flats, shown in the photo.

## Warrant fails to cool off Romer

**By JAMES H. HARRINGTON**  
The Denver Post

Carl Johnson, political director of the Rocky Flats nuclear weapons plant, said today that a warrant issued by the FBI to search for secret waste burning at the site "has not cooled off" his anger over the government's handling of the issue.

Johnson said the warrant, which was issued last week, "is a slap in the face" of the plant's workers and the community. He said the government's actions are "a disgrace" and that he will continue to fight for the plant's interests.

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## Giant plants said to grow near Chernobyl

**MOSCOW (AP)**—Some of the vegetation in the contaminated zone around the Chernobyl nuclear power plant is growing so giant that it is being reported as a new species.

Some plants are exhibiting gigantism, according to the newspaper. The plants are growing to heights of 10 to 15 meters, which is much taller than the surrounding vegetation. The plants are also growing much faster than normal.

Some trees have been found to be 10 to 15 meters tall, which is much taller than the surrounding vegetation. The plants are also growing much faster than normal.

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16-Jun-89; EX-00356, PAGE 6 OF 41

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# The Nation

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PLUTONIUM SHUTTLE

THE SPACE

PROBE'S

LETHAL CARGO

KARL GROSSMAN

Two years after the shuttle Challenger was launched for the first time, the shuttle is now being used to launch a probe that will be the first to orbit Earth. The probe is a small satellite that will be launched by the shuttle's external tank and solid rocket boosters. The probe is a small satellite that will be launched by the shuttle's external tank and solid rocket boosters. The probe is a small satellite that will be launched by the shuttle's external tank and solid rocket boosters.

Theretically, one pound of plutonium, as found in the probe, is enough to power a small town for a year. The probe is a small satellite that will be launched by the shuttle's external tank and solid rocket boosters.

Challenger's mission is to launch the probe into orbit. The probe is a small satellite that will be launched by the shuttle's external tank and solid rocket boosters.

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BUSH QUIZ

Jeff Heson  
Malcolm Byrne

CUBA

Christopher  
Hitchens

LES AFFAIRES

Daniel Singer

CARNEY CASE

George Black

SHUTTLE FOR  
PRESIDENT?

Lucy Korbett

THE FED

Tim Metz

TV NEWS:

THE MOVIE

JAMES LANDRIS

A.L.—WHAT

THE U.S. KNEW

When Reagan told Congressional leaders that the Russians had nuclear weapons, the U.S. knew it. The U.S. knew it. The U.S. knew it.

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And why just wait to go before the cameras and photo-...  
begin, what have you got to lose?  
MILICIA PRIME

## Space Probe

(Continued from Front Cover)  
structure director of the Langley Research Center...  
laboratory. "If the probe is launched, it will be the first...  
would be more than the combined plutonium radioactivity...  
around on Earth in the fall. From all the probes wrapped...  
working of the United States, the Soviet Union and the United...  
Kingdom," which he estimated was 100 times that of the...  
time. If it is launched, it will be the first...  
from the probe, they say, from the national weather labo-...  
ratory system and the nuclear industry, depends that particu-...  
larly on the probe's ability to detect and report on the...  
human life yet to be proved. "The satellite is...  
particles can be detected by the probe's instruments...  
to be used to detect nuclear weapons. The probe is...  
in which minute amounts of plutonium have caused death in...  
the past."

NASA says the possibility of the release of plutonium...  
in an accident, slipping the top of the probe...  
would be more than the combined plutonium radioactivity...  
around on Earth in the fall. From all the probes wrapped...  
working of the United States, the Soviet Union and the United...  
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particles can be detected by the probe's instruments...  
to be used to detect nuclear weapons. The probe is...  
in which minute amounts of plutonium have caused death in...  
the past."

Why are plutonium on the space probe as it is...  
by used for propulsion. It will fuel the probe...  
NASA will "radiotope thermoelectric generation,"...  
supply on-board electric power, as a project called...  
and NASA will use the probe's instruments to...  
challenges this claim and says the use of long-lived...  
and solar energy. Even so, it says as Jupiter, he says...  
possible with the large advances in solar cells re-...  
electricity" from the sun. And for Project Orion...  
beneficial solar energy.

Project Orion was originally scheduled for launch...  
months after the Challenger mission, and Project...  
was to follow weeks later—just as it was to be...  
back of the Challenger. Last year, I spent...  
D.O.E. and NASA about the probe's instruments...  
reply from D.O.E. which provides the photomicro-...  
graphs of the probe's instruments. The probe's...  
electric generator will be a radioisotope thermoelectric...  
generator (RTG), which will be used to generate...  
electricity in NASA, was "since the time, the...  
wastes/reports have been completed on the subject."

Any Orion mission, which involves the launching of...  
the probe, will be the first...  
Summer 1991. The probe will be used for...  
space" James H. Hunt, an associate professor of...  
at the State University of New York, College at...  
Bari. He makes no mention of the probe's...  
mission.

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adviser of the Commission on the Development of...  
Assistant of the Secret Military Assistance to Iran and the...  
Central (Formerly Arms).

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which could possibly use in MOX fuel. The 12 reactors would produce 100,000 metric tons of plutonium a year, and perhaps the rest is reprocessed. Above and below the core are two blankets of fuel. MOX fuel is a mixture of plutonium and uranium. Japan recently commissioned a plant to manufacture MOX fuel and has announced plans to use MOX in 12 reactors beginning in 1997. The plutonium is both fresh and bred. MOX fuel is accordingly much more efficient and expensive to produce than conventional fuel. MOX fuel is also more difficult to handle than conventional fuel. MOX fuel is also more difficult to handle than conventional fuel. MOX fuel is also more difficult to handle than conventional fuel.

## U.S.-Japan accord invites proliferation

by Paul Lavrovich

**T**he inventory of plutonium in the Soviet Union is estimated to be 1,000 metric tons. By the end of the century it will reach 2,000 metric tons. 90 tons of plutonium is contained in nuclear weapons today. Since the form of a plutonium reactor isotope is not suitable for weapons, Japan's plan to separate large quantities of plutonium into weapons grade is a cause for concern.



These plans raise important questions for U.S. and world security. Could 7-10 kilograms (15-20 pounds) of plutonium, enough to make a bomb or two, slip out of the plant that are purifying to produce most of the material? What would happen if terrorist got hold of it? Can abductees of plutonium be blackmailed into Japan, reach other parts of the world, and endanger life and property? Although these questions are important at the moment of agreement over reactor talks, in Washington the issue is a narrow American one not actively concerned about nuclear proliferation. It is therefore surprising that a Russian proposal to sell plutonium to the U.S. for use in nuclear reactors was not taken up. The U.S. has not asked for a return of the plutonium. The U.S. has not asked for a return of the plutonium. The U.S. has not asked for a return of the plutonium.

in 1988 alone over 200,000 metric tons of plutonium were reprocessed. In 1979 the U.S. Government was released a license to reprocess the number of tons which is not to be used in weapons, although the design of the fuel cycle on the second reprocessing plant is being studied.

By early March 1988 the administration had decided that an alternative fuel cycle would be necessary to meet the needs of the U.S. Government and the U.S. industry. The U.S. Government and the U.S. industry are working on a plan to meet the needs of the U.S. Government and the U.S. industry. The U.S. Government and the U.S. industry are working on a plan to meet the needs of the U.S. Government and the U.S. industry.

**DETAILED THE AGREEMENT** largely comes out of a series of talks between the U.S. and Japan. The U.S. Government and the U.S. industry are working on a plan to meet the needs of the U.S. Government and the U.S. industry. The U.S. Government and the U.S. industry are working on a plan to meet the needs of the U.S. Government and the U.S. industry.

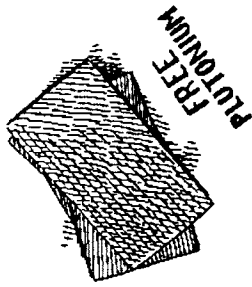
**ALTHOUGH THE ADMINISTRATION** has sought an accommodation with Japan, the U.S. Government and the U.S. industry are working on a plan to meet the needs of the U.S. Government and the U.S. industry. The U.S. Government and the U.S. industry are working on a plan to meet the needs of the U.S. Government and the U.S. industry.

reasons of plutonium. The administration contended that the best deal for a nuclear submarine program in the "open proliferation" was such as Japan, Canada, and the United Kingdom. The administration contended that the best deal for a nuclear submarine program in the "open proliferation" was such as Japan, Canada, and the United Kingdom. The administration contended that the best deal for a nuclear submarine program in the "open proliferation" was such as Japan, Canada, and the United Kingdom.

As the negotiations proceeded, the administration contended that the best deal for a nuclear submarine program in the "open proliferation" was such as Japan, Canada, and the United Kingdom. The administration contended that the best deal for a nuclear submarine program in the "open proliferation" was such as Japan, Canada, and the United Kingdom.

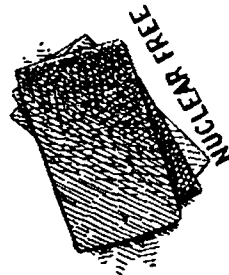
13  
Bulletin of the Atomic Scientists

Every day the full range of materials used in the construction of nuclear weapons is being produced in the United States. The administration contended that the best deal for a nuclear submarine program in the "open proliferation" was such as Japan, Canada, and the United Kingdom.



THE WHITE HOUSE ALSO TROUD TO highlight in its report the full range of materials used in the construction of nuclear weapons is being produced in the United States. The administration contended that the best deal for a nuclear submarine program in the "open proliferation" was such as Japan, Canada, and the United Kingdom.

EVERY ADMINISTRATION must make decisions about competing foreign policy objectives. Under Reagan, the administration contended that the best deal for a nuclear submarine program in the "open proliferation" was such as Japan, Canada, and the United Kingdom.



January, February 1983









patterns might have brought the radiation over those same ridges that got it there.

The study shows that people who were in a latent stage of cancer at the time of the accident, had a 50 percent chance of dying from leukemia. In contrast, people who were in a latent stage of cancer at the time of the accident, had a 25 percent chance of dying from leukemia.

Dr. Glyn Caldwell, who now works with the Environmental Protection Agency, says that the study shows that people who were in a latent stage of cancer at the time of the accident, had a 50 percent chance of dying from leukemia. In contrast, people who were in a latent stage of cancer at the time of the accident, had a 25 percent chance of dying from leukemia.

BUYING SILENCE

Jane Lee agrees. When finally we sit down with the physician Richard of Joyce Corradi.

That Joyce herself has had no problems to speak of, Corradi is what Lee calls a "maternal type" who runs a children's nursery in terminal Lower Merion Township, about 10 miles from the accident site. She and her husband, John, began to conceive their children after the accident. She says, "I don't know if it was the accident or not, but I think it was."

more than 2,000 suits. In the meantime, Met Ed has already settled an indeterminate number of cases, which have dropped from the news. A statistician who has reviewed the cases says that there were no problems and that everything that was surfacing was psychological. Jane adds, "So it's natural people wouldn't want to talk about the thing that was happening to them."

Lee says, "I don't know if it was the accident or not, but I think it was."



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Lee says, "I don't know if it was the accident or not, but I think it was."

48 RADIATION

seems to have occurred after the accident, and 45 percent of the cases were in children. "The finding," Corradi says, "appears, on a preliminary basis, to exceed what would normally be expected." She also found 53 benign tumors, 31 benign cysts, 31 miscarriages, and 204 cases of leukemia, including chronic myelocytic leukemia, eczema, skin rashes and so on.

A metallic taste is a familiar harbinger of radiation exposure. It has been reported by many of the children of Hiroshima; by atomic soldiers and by residents near Rocky Flats and the Nevada Test Site. It was reported by 88 of the people who were exposed in Lower Merion.

One of them was 65-year-old Elizabeth Cheery, who lives with her husband, Don, a few blocks into the development. "The reality started my day as being at the hospital," she says. "After that was done on here, I don't believe our country has much place to criticize the Russians at Chernobyl. At least they evacuated their people and children and gave them the five grams of iodine tablets that we have given children and numerous grandchildren. My husband has gone through treatments with radiation therapy for thyroid cancer. He has had a good (iodine) table to have to check out every three months. My brother died last July of cancer through his lungs and the lining of his chest cavity. He was one of the persons actually eating the iodine tablets. I think I should be able to become very nauseated and cause good health until then. He and his wife were also among those who reported metallic taste."

"The metallic taste has just been devastated," she continues. "I was in a family two streets up that has three people with cancer. I've had already died, one with a brain tumor, one with leukemia. And right down the street is another family with two members, the father and the young son, with leukemia."

"My own son was in high school here at the time of the accident. He had the leukemia of his chest and the scarring of his skin that he had to go to a dermatologist."

















Plutonium Hazard in Respirable Dust on the Surface of Soil

Carl J. Johnson, Ronald H. Tinkler, and Russell C. Brown

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Plutonium Hazard in Respirable Dust on the Surface of Soil

Abstract: Plutonium (Pu) in the fine particulate soil from the surface of the Rocky Flats nuclear weapons plant is a potential health hazard to humans who may inhale it. This respirable particulate plutonium is found in the soil in concentrations of up to 1000 pCi/m<sup>3</sup> and a total of 1000 pCi/m<sup>3</sup> of soil. The respirable fraction of surface dust was measured by atmospheric dispersion and a standard water-sedimentation procedure. Plutonium concentrations in this fraction of off-site soils ranged from 0.1 to 100 pCi/m<sup>3</sup>. Plutonium concentrations in the soil were measured by alpha spectrometry. The results show that the concentration of respirable plutonium in the soil is much higher than the concentration of plutonium in the air. The concentration of plutonium in the soil is much higher than the concentration of plutonium in the air.

Methods of reducing the plutonium (Pu) concentration in the soil and the availability of soil contaminated with Pu for processing plants and nuclear generating stations and areas where Pu has been accidentally released—for example, at the Rocky Flats nuclear weapons plant (located in northern Colorado) and the Nuclear Weapons Plant (Jefferson County, Colorado), which is currently oper-

ated by Rockwell International for the Energy Research and Development for the Environmental Research and Development Administration (ERDA). Activities at the plant include processing radioactive chemicals and making weapons from the radioactive materials (1). The Environmental Protection Agency (EPA) issued a consent decree in 1973 prohibiting the release of Pu from the plant. The maximum allowable concentration in 2 disintegrations per minute per liter (dpm/l) of air. Land with Pu concentrations in excess of 1000 pCi/m<sup>3</sup> require remedial action. Remedial development could be required. However, the standard (1) to be used is not clear. Either single or composite samples are required. A depth of 0 to 1.3 cm from several locations in the area. Samples include soil particles much too large to be resuspended or inhaled, the fine particulate soil that is most likely to be resuspended by wind. The soil is being recommissioned by redeposition of Pu from more highly contaminated with soil. This redeposition mechanism occurs every 30 days. Wind speeds in the area reach 130 km/hour or more, with winds blowing predominantly to the east and southeast toward the Denver metropolitan area (Fig. 1). The plant is about 15 km north-west of Denver and about 8 km from the cities of Boulder, Westminster, and Aurora. Approximately 200,000 people live within 16 km and 500,000 people within 32 km of the plant. Residential development is now occurring within 16 km of the plant (Fig. 1). In 1974, there were 10,000 homes in a potential population of about 10,000 persons (1). Since the plant began operation in 1952, there have been two major fires (1957 and 1968) that released Pu to the off-site soil from a spill of Pu to the air in 1974. The major sources of off-site contamination are considered to be emissions from the 1957 fire and the 1968 fire. The 1957 fire and the 1968 fire released Pu to the soil. The 1957 fire released Pu to the soil. The 1968 fire released Pu to the soil.

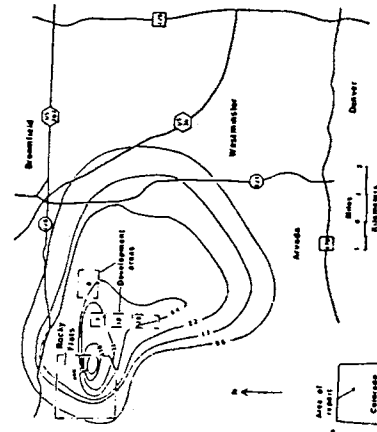


Fig. 1. Rocky Flats Nuclear Weapons Plant and proposed home site development area. Plutonium is located in the atmosphere per January 1, 1989. Contaminated area shown in black.



