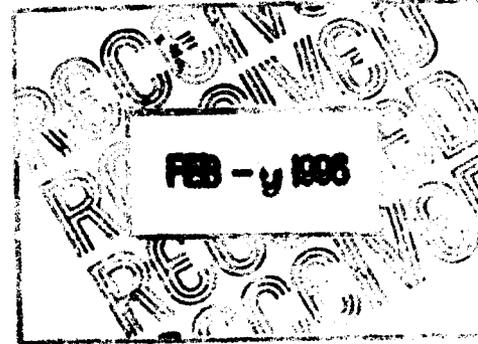


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February 8, 1996

Mr. Benito Garcia
New Mexico Environment Department
Hazardous & Radioactive Materials Bureau
P.O. Box 26110
Santa Fe, NM 87502

VIA FAX (505) 827-1557

RE: WIPP RCRA PERMIT APPLICATION

Dear Mr. Garcia:

As we discussed at a meeting with Secretary Weidler on December 18, 1995, and based on further conversation with Steve Zappe, Southwest Research and Information Center (SRIC) submits some technical comments for consideration in the department's issuance of a Notice of Deficiency to DOE regarding its permit application. These comments are based on our review of Revision 5.2 and are not intended, nor should they be deemed, to be a substitute for public comment on the draft permit, if one is issued. Further, in these comments we identify only some issues that we believe need special attention at this time.

SRIC hopes that these or similar comments will be included, along with many other issues, in the notice of deficiency. Please send us a copy of that notice when it is issued.

1. The application is wholly deficient in its consideration of remote-handled (RH) wastes. Unless significantly improved and detailed information is provided regarding many aspects of RH wastes, such wastes should be deleted from the application.

Among the many deficiencies are:

* wholly inadequate waste characterization information.

The applicants state:

"At this time detailed information on RH TRU waste characterization methods is not available." (Response to comments on Chapter C, p. 4).

"At this time, detail about RH TRU waste characterization is not available." (Response to comments on Chapter C, p. 24).

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* nonexistent analytical methods for RH wastes.

The applicants have stated:

"The WIPP intends to impose the same sampling and analysis requirements on RH TRU as are applied to CH TRU, however, WIPP understands that the high radiation fields associated with RH TRU may make much of this sampling and analysis impossible." (Response to comments on Chapter C, p. 26).
"Analytical methods for RH wastes have not been included in the Methods Manual at this time.... Since analytical and sampling methods have not been finalized, QA/QC parameters have not been defined." (Response to comments on Chapter C, p. 41).

* inadequate waste handling facilities at WIPP.

The Waste Handling Building (WHB) facilities have not been adequately detailed to ensure that wastes will be properly handled, nor is it demonstrated in the application that those facilities -- designed almost 20 years ago -- are adequately designed and maintained to meet today's regulatory requirements. The applicants should provide a detailed description of the design and maintenance of the RH portion of the WHB, including information about planned design modification and maintenance improvements.

Page D-64 states that if a canister is contaminated or physically damaged, it could be overpacked (see also Figure D-38). No adequate description of how and where such overpacking would be done is included.

Further, because of the radiation hazards, the RH bay cannot be adequately inspected -- inspections are only done annually (p. G-9).

* inability to adequately handle RH wastes underground.

On page D-63, the applicants assume the RH waste emplacement precedes CH emplacement, even though there will be no RH waste ready for several years after WIPP's scheduled opening date. (On page F-18, the applicants imply that RH wastes will not be coming until about the year 2002.) Either RH wastes must be eliminated or the application must be revised to provide a detailed description of how RH wastes would be emplaced in a room that is partially or totally filled with CH wastes or the application must clearly state that such a process cannot be done and revise the application accordingly to reflect the downwardly revised volumes of RH wastes for which a permit is sought.

The RH shield plug design is changing and not finalized (Responses to comments on Chapter D, page 11). Thus, the

application does not adequately describe the plug and how it will function.

The application also does not adequately describe the effect of creep closure and temperature on RH canisters. Such information is essential to evaluate the safety of the underground operations. The applicants must provide complete information on such issues, along with supporting documentation.

Additionally, the underground facility is not capable of handling the amount of RH wastes the application says would be disposed at WIPP. Page A-5 states that "up to 7,080 cubic meters may be remote-handled (RH) transuranic mixed waste." (On page D-15, the applicants state that the capacity for RH may be 7,075 cubic meters.) However, page B-18 states that each panel has the capacity for 649 cubic meters. Thus, the eight panels that the applicants plan to use for RH waste are designed for no more than 5,192 cubic meters. (Response to comments on Chapter I, p. 6, states that no RH wastes will be placed in the drifts.)

* inadequate contingency plan.

In the WHB, the applicants assume that the RH shipping container provides adequate double containment (Response to comments on Chapter G, p. 18). However, the application also acknowledges that contamination or damage of the container can occur (e.g., pages B-14, D-63), in which cases double containment could be lost.

The applicants state that the RH shipping container will withstand a 30-minute fire. While that is the Nuclear Regulatory Commission (NRC) requirement, the actual container has not been certified by the NRC so it cannot be relied upon as the basis for the application. Further, the application provides no basis to assume that a fire would be extinguished within 30 minutes.

In the event of the need to remove wastes from the RH bay because of an accident or other problems, there is no plan for storage of such wastes and no location at WIPP designed to handle such contingencies.

Similarly, there is no discussion of contingency plans in the event of a room collapse in an area with RH wastes.

2. The application does not justify the use of Panel 1, so use of that panel should be eliminated from the application.

The applicants base use of Panel 1 on the 1986 Final Design Validation Report (p. D-16). Such reliance is unjustified

for many reasons:

* The validation report states: "the reference design is based on the assumption that the storage rooms and panels will be excavated in stages coordinated with the scheduled arrival of waste." (p. 3-16) Such an assumption is incorrect regarding Panel 1, which will be more than 10 years old before any waste is emplaced.

* The validation report has as an operational requirement that wastes stored are retrievable for up to 5 years after initial emplacement (p. 12-6). Such a requirement is not included in the application and is inconsistent with statements in the application that a panel will be closed about 2.5 years after waste emplacement begins (p. D-63).

* The validation report has as "essential features" that minimum design dimensions be maintained for up to 5 years (p. 12-6). Such dimensions cannot be ensured in Panel 1 rooms, which have to be regularly maintained, a process that likely cannot be done in rooms where waste emplacement is underway. At a minimum, the application has to describe how such on-going maintenance activities could be carried out safely and without increased risks of accidents and releases.

* The validation report assumes backfill is emplaced around the drums and boxes (p. 12-5). Such a requirement is not included in the application and is being dropped from the applicants' plans.

* The validation report does not include discussion of a roof support system like that done in some rooms in Panel 1 (pp. D-53, D-90-91). Thus, the report cannot be used to justify the effectiveness of such a program.

The applicants also briefly try to justify use of Panel 1 based on the 1991 expert review panel (p. D-91). A 5-year-old report is not sufficient justification for use of the panel. Further, the application states that room stability will also be reviewed by the Bureau of Mines (p. D-53). That agency no longer exists and will not make the inspections.

3. Waste characterization of CH wastes is inadequately discussed. Much more complete information about actual waste characterization at each site and about waste acceptance criteria is required.

Although the NMED made numerous comments about deficiencies regarding waste characterization, DOE's responses and the revised application are seriously deficient. The Baseline Inventory Report used for Table C-1 is being revised, so it cannot provide the basis for characterization information.

The applicants propose to use acceptable knowledge as its primary waste characterization process (e.g., pp. C-24 and

C-25). But based on the application, what constitutes acceptable knowledge can vary dramatically at each site, but exactly how acceptable knowledge will be established at each specific site is not adequately described. The application must be revised to specifically describe how acceptable knowledge would be achieved at each actual site.

NMED specifically asked for whether DOE would modify the 1991 Waste Acceptance Criteria (Response to comments on Chapter C, p. 16), but DOE did not answer the question or change the application to provide an answer. In fact, DOE is planning to issue revised Waste Acceptance Criteria within the next few months. Such revisions must be incorporated in the application, so it appears premature to even consider issuing a draft permit without such information.

A related problem regarding changing waste acceptance criteria and inadequate characterization methods are the various examples of inconsistent statements in the application about free liquids. On page B-23, the applicants state that "the waste will not contain free liquids." In the discussion of waste not accepted at the WIPP facility on page C-15, free liquids are included as unacceptable except "in well-drained containers...of less than one percent by volume." On page C-16 is the further statement that one percent is by the volume of the container. However, because the word container is not included in the glossary and is used in different ways in the application -- to refer to a waste container (drum or box) or to a bottle containing liquids -- it is unclear exactly what container is meant in the description. On page D-3, the applicants indicate that the one percent limit criterion "is likely to change" regarding how it is measured. Moreover, it is unclear how that one percent level can be verified since radiography is the only consistently applied method for each waste drum and box, but such a process cannot always identify all liquids. (Response to comments on Chapter C, p. 86). Thus, the application must be revised to adequately describe how the criterion will be maintained.

Given the great heterogeneity of the mixed wastes because of the very different generation and storage processes at every site and the deficiencies of radiography, a much more intensive and adequate waste characterization process will be necessary to ensure that any adequate waste analysis plan is met. The application should be revised to describe such alternative processes.

4. The application inappropriately assumes that a no-migration variance will be granted by EPA. The application must be revised

to describe the characteristics and treated wastes based on the assumption that a no-migration variance is not issued.

On page C-51, the applicants continue to maintain that they will request and receive a no-migration variance from EPA so that the WIPP is allowed to dispose of restricted waste. Likewise, in Response to comments on Chapter C, p. 60, the applicants refuse to modify the application in response to NMED's previous comment on this issue. NMED should reiterate its requirement that the application be revised to indicate how waste will meet the land-disposal requirement and how conformance assessment with the no-migration determination would be accomplished. In addition, the application should be revised to indicate the characteristics of treated wastes, including the treatment techniques currently being proposed at the Idaho National Engineering Laboratory.

5. The application does not adequately describe how mining can be safely undertaken while waste emplacement proceeds. The application must be substantially revised to address the issue or mining should be prohibited while waste emplacement is in progress.

On page B-17, the applicants state that "panel construction will occur during the other shift so there is no overlap between the mining operations and waste handling on the same shift underground." However, on page B-28, the applicants state that mining construction "will usually take place on a different work shift" than the two shifts per day of waste emplacement. Such contradictory statements cannot be relied upon, particularly since mining while waste emplacement proceeds is both a safety and monitoring problem. It is a safety problem because the construction equipment and activity poses an increased risk of accidents which has not been adequately discussed in the application. Moreover, the application does not demonstrate that areas of mining construction could be adequately sealed off from the waste emplacement panels. It is a monitoring problem because the dust generated by mining affects the performance of the continuous air monitors (see EEG-60, January 1996, The Influence of Salt Aerosol on Alpha Radiation Detection by WIPP Continuous Air Monitors.)

6. The application briefly states that an entire TRUPACT-II shipping container filled with wastes might be disposed underground at WIPP (p. D-62). Such an operation is not adequately described and must be eliminated from the application. The application should describe the contingency plans to deal with such contaminated TRUPACT-IIs other than waste emplacement at WIPP.

The application does not include the TRUPACT as a disposal container. The surface and underground facilities are not designed to handle entire TRUPACTS and such a description is not included in the facility descriptions in Chapter B or D. Thus, the application does not demonstrate that such emplacement could be done safely. Instead of such a description, the application provides as the only justification for such disposal that "it may be more cost effective." Such a statement is not supported by any documentation and must be disregarded. Moreover, cost-effectiveness cannot be used to avoid compliance with RCRA requirements.

7. The applicants have provided contradictory information about the operations of the Waste Handling Building regarding overpacking. The application must be revised to be consistent and adequately describe all operations.

In responses to comments on Chapter A, p. 2, the applicants state "the overpack and repair room, and the overpack enclosure have been deleted from discussions of TRU mixed waste management." Indeed, the application contains no discussion of those rooms, which would not be permitted. Despite the elimination of the room and enclosure, numerous references to overpack operations remain in the application (e.g., p. B-19, D-60, D-63, G-32). The application does not clearly describe how such overpacking would be done and whether the elimination of the overpack and repair room reduces the capability to successfully overpack.

As a final comment, SRIC would note that in 1993 and 1994 we strongly advocated that NMED deny DOE's previous Part B application and require the applicants to submit an all-new application. In support of its insistence on "revising" its application, DOE stated that much of the application would be unchanged or only slightly modified. At this stage of the "revision" process, it is clear the current Revision 5.2 and the upcoming Revision 6.0 are substantially different than the previous application for the test phase. Every chapter is substantially changed, with many parts being totally rewritten.

Thank you for your consideration of these comments.



Don Hancock, Director
Nuclear Waste Safety Project