



**SOUTHWEST RESEARCH AND INFORMATION CENTER**  
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2002

Steve Zappe  
New Mexico Environment Department  
2905 Rodeo Park Drive, Building 1  
Santa Fe, NM 87505

RE: WIPP Remote-Handled (RH) Waste Draft Permit Modification

Dear Steve,

Southwest Research and Information Center (SRIC) requests that NMED deny the permit modification because it is not adequately supported technically and is so incomplete as to not provide enough basis to proceed as a class 3 modification. Regulations under the New Mexico Hazardous Waste Act (20 NMAC 4.1.900, incorporating 40 CFR 270.42(c)(6)) provide that NMED may deny a Class 3 modification. SRIC requests that NMED deny the modification without prejudice to the permittees submitting a more technically adequate modification in the future.

If NMED does not deny the modification, SRIC requests that public comment be fully considered and included in any notice of deficiency (NOD) that NMED issues on this matter. SRIC also requests that if NMED proceeds with an NOD that it require the permittees to notice the WIPP mailing list of its response and make any such response readily available to the public.

1. The following comments are not exhaustive of the many deficiencies with the modification request, but they indicate that the request is very substantially incomplete so that there must be further information provided before NMED proceeds with the request. Such information should be provided to NMED and the public. Some examples of the needed information follow.

A. Waste inventory. The modification request states that the estimated volume of remote-handled waste is "approximately 2000 m<sup>3</sup>." at 1-2. The request would allow 2,924 canisters of RH waste to be disposed in panels 2, 3, 4, and 5. at 3-16. Each canister has a maximum capacity of 31.43 cubic feet or 0.89 cubic meters. at 3-11. Thus, 2,924 canisters would have a volume of 2,602.4 cubic meters. at 18-16. That is 130 percent of the stated total amount of RH waste to be disposed in all of the underground hazardous waste disposal units (HWDUs). Additionally, DOE has stated that it would also dispose of RH waste in panels 6, 7, and 8. If similar amounts (731 canisters) would be emplaced in those three panels, that would amount to more than 4,550 cubic meters in those 7 panels, or more than 225 percent of the estimated disposal volume.

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However, Supplement 1 shows the "planned disposal" to be 2,840 cubic meters. at 5. Those widely different and inconsistent volume amounts are consistent with DOE's history of wildly dissimilar guesstimates, but they cannot be the basis for an approvable modification. Indeed, the information presented does not meet the requirements of 40 CFR 270.14 and 270.15.

NMED should deny the permit modification request and require that any future request provide accurate RH inventory information. Such information is essential to comply with the Hazardous Waste Act and to ensure that public health and the environment will be protected.

#### B. Waste characterization

In prohibiting RH waste management, storage, or disposal in the WIPP permit, NMED stated: Applicants "failed to address numerous critical technical questions regarding RH waste characterization." NMED Findings of Fact, Remote-Handled TRU Waste Prohibition, Page 6 of 13.

"A non-exhaustive list of deficiencies" included:

- Applicants failed to present evidence that CH waste characterization techniques are applicable to RH waste;
- Applicants failed to explain the application of radiographic analysis to lead-shielded RH waste containers;
- Applicants failed to describe the application of core technology to RH waste;
- Applicants failed to adequately address whether modifications of CH techniques would be required for use in radiological containment areas;
- Applicants failed to address the need for additional equipment, likelihood of longer periods of time and increased analytical costs, and radiological safety and secondary waste generation issues associated with RH waste characterization;
- Applicants failed to address potential problems with RCRA analytical methods for RH waste, such as interference, gas generation, and other method limitations;
- Applicants failed to describe procedures for acquiring representative samples of RH waste, given applicable radiation protection requirements for personnel;
- Applicants failed to describe the QA/QC requirements for RH waste sampling and analysis.

*Id.* at pages 6 and 7 of 13.

At a minimum, the permittees must submit a modification request that accurately and completely addresses these deficiencies. But the request does not do so.

40 CFR 264.13(a)(1) requires that before the permittees can store or dispose of any RH waste that they "must obtain a detailed chemical and physical analysis of a *representative sample* of the wastes." (emphasis added). SRIC is especially concerned that the permittees do not seem to recognize the requirement for representative sampling. In the references to 40 CFR 264.13(a)(1) in Section 5 of the modification request, the assertion is made that the RH Waste Analysis Plan (WAP) (Attachment R) meets the characterization requirements, but no place does that section

specifically mention the representative sampling requirement or demonstrate that the RH WAP meets that requirement. Indeed, SRIC does not believe that the proposed RH WAP meets the representative sampling requirement, and therefore it cannot be approved. NMED should deny the modification request and inform the permittees that any future modification request must require representative sampling in the RH WAP.

The permit's required sampling includes sampling and analysis of every container "to determine the concentrations of VOCs ... in headspace gases." at B-10. "Any waste container which has not undergone headspace gas sampling and analysis to determine concentration of VOCs is not acceptable at WIPP." Permit Condition II.C.3.i.

The modification request does not include headspace gas sampling for every RH waste container. On the contrary, the modification request apparently only allows, but does not require, headspace gas sampling of any RH waste container. The modification request asserts that headspace gas sampling "is unnecessary." at 5-23. Instead, the permittees would lower the room-based VOC concentration limits to compensate for the estimated VOC concentrations in RH waste containers. at 5-16, Table IV.D.1. SRIC does not agree that the proposed approach is adequately justified or that it protects public health and the environment.

As noted in section 1.A, the permittees have not provided accurate waste inventory data. Thus, the estimates used in Supplement 3 to calculate VOC emissions are highly suspect and cannot be relied on. This inadequacy includes the estimates of cellulose, rubber, and plastics in RH waste. The basis of those estimates is the *Baseline Inventory Report* of 1996, which is clearly out of date. The permittees should either update the BIR or provide other documentation based on actual RH container investigation at individual sites. Without accurate inventory information, NMED should not accept the VOC calculations in Supplement 3 to be an adequate basis to determine actual or bounding RH waste VOC emissions.

In addition, SRIC believes that the permittees, at a minimum, must discuss various possible methods of headspace gas sampling for each container before that requirement can be eliminated. The permittees also should provide data on the effects of various packaging configurations on the amount of VOCs in each container and the risks and estimated radiation exposures to workers from alternative sampling methods.

In their permit application, the permittees stated that "radiography will be used on 100 percent of stored waste containers and most RH TRU waste containers to determine the physical composition of debris mixtures." Revision 6, page C-10. The permittees' position has now dramatically changed. Radiography would apparently be allowed, but not required, for waste containers. Thus, few, if any, drums would be subject to radiography.

As noted above, NMED (and SRIC) have concerns about the effectiveness of radiography for RH waste. The modification request must provide data as to the effectiveness of radiography and must specify under what circumstances radiography would be used.

The permit also requires visual examination (VE) of some containers. Sections B-3c, B-3d, Attachment B2. The modification request allows VE of some containers. at 5-21. But the specific requirements for when VE will be used are not stated. As with contact-handled waste, SRIC's position has long been that for much of the required waste characterization that visual examination is the most reliable technique. The modification request states that 95 percent of the RH waste will be repackaged. at 1-3. Thus, visual examination can be done as part of the repackaging and should be required if RH waste is permitted at WIPP. VE could be used to identify or confirm waste form, material parameter weights, and ensure that prohibited items are not in the container. The specific possible techniques for such VE should be discussed in the modification request, in much more detail than the vague descriptions of the "characterization at the time of packaging" (CTP) so that the most effective techniques with the least exposure to workers are used.

The vagueness of the modification request as to when radiography and VE would be used is unacceptable and would not ensure that all waste is adequately characterized. The vagueness would allow each site to have widely differing requirements without providing any technical basis for the differences. It could also make the audit and surveillance program more complicated and less effective. SRIC believes that any modification request must establish specific requirements for the use of radiography and visual examination with RH waste containers.

The record from the WIPP permit hearing clearly shows the unreliability of Acceptable Knowledge (AK). Transcript, pages 471-474, 505-518, 527-532. Nonetheless, the permittees are basing their proposed RH WAP on AK. There is no basis at this time for NMED to approve such a procedure. If the permittees want to use AK, they must demonstrate during the modification process, and at the public hearing, that AK is reliable at each of the sites that will be characterizing RH waste.

While the permit does allow use of AK, it also requires confirmation using other techniques. For RH waste, the modification request allows, but does not require, confirmation, except perhaps for 10 percent of some waste streams. at 5-22. SRIC believes that AK for RH waste, as well as CH waste, must be confirmed, and therefore objects to AK for RH not also being confirmed. A program of 10 percent confirmation is not adequate, nor have the permittees explained or justified that number, which appears to be totally arbitrary.

Important conditions of the permit, which were fully justified and strongly supported during the WIPP permitting process, relate to prohibited items. II.C.3.a to g. The permit prohibits AK from being used as the sole basis to determine that prohibited items are not in drums that are shipped to WIPP. The modification request does not provide equivalent requirements related to prohibited items. The RH WAP must require that AK is confirmed related to prohibited items and specify the techniques to do so, both for waste that will not be repackaged and for the repackaged containers.

### C. Waste storage and handling

Parking Area. The modification request would expand the parking area capacity to 29 shipping containers (from the current limit of 12). at 3-12. SRIC does not agree that such a substantial increase in containers and trailers is justified, and the permittees have certainly not provided adequate information to support such a dramatic increase in and container equivalents capacity and volume. Moreover, the use of "Up to 29 loaded NRC-certified shipping containers" (at 3-12, 7-5 16-7) could lead to substantial confusion because 29 TRUPACT-IIs would exceed the 60 cubic meter capacity limit. It appears that the effect of the proposed change could be to allow more than 12 TRUPACT-IIs to be in the parking area. SRIC would not agree that under any circumstances in this permit modification that the limit of 12 TRUPACT-IIs should be increased. Thus, any container equivalent change should specify the maximum number of each container: "Up to 12 TRUPACT-IIs and Up to \_\_\_ of [other specific containers]." SRIC would strongly object to allowing 17 RH waste shipping containers to be in the parking area because it is unnecessary and dangerous. Each shipping container contains a substantial amount of radioactivity, so the number of containers in the parking area should be minimized. The more shipping containers in the parking area the greater the likelihood of accidents and potential releases into the environment. The permittees must provide information fully explaining and justifying any increased capacity in the parking area, and certainly 29 shipping containers is excessive and should not be permitted.

The modification request states that an "additional route for waste transport trucks is planned." at 10-2. The request must specifically describe the route and show it in a revised Figure G-2.

Waste Handling Building. The modification request includes adding the RH Bay, Cask Unloading Room, Hot Cell, Transfer Cell, and Facility Cask Loading Room as permitted facilities in the Waste Handling Building. Table III.A.1. The specified capacity limits would allow for up to 12 shipments of RH waste to be in the Waste Handling Building at the same time. The rate of disposal is two shipments (canisters). at 16-22. Thus, the request would allow more than a week's disposal rate of RH waste being in the WHB. SRIC strongly objects to those limits, which are unnecessary and dangerous and should be substantially reduced.

The modification request states that "larger containers" could be used to overpack RH containers. at 16-17, see also 16-24. Information on such overpack containers is not included in the modification request, and no such containers are currently approved in the permit. So the modification request is clearly incomplete as to such containers. Moreover, SRIC does not believe that the 85-gallon overpack should be used for 55-gallon RH containers.

The shipment from INEEL that was not acceptable at WIPP and was returned to Idaho on August 28 clearly demonstrates that unacceptable containers can arrive at WIPP. The consequences of such situations with RH waste at WIPP are severe and could dramatically affect human health and the environment. The permit modification must provide clear procedures to check RH shipping containers before they are unloaded so that any leaking containers are identified.

Several of the procedures described in the modification request are not protective of human health and the environment and cannot be approved. For example, when shipping casks arrive and are found to have surface dose rates that exceed acceptable levels, the cask would remain in the parking area and ropes and placards would be placed as radiological boundaries. at 16-23. The permit modification should specify the "acceptable levels," which should be fully justified. For beta and gamma radiation, ropes and placards may not provide sufficient boundaries. In addition, where such a location could be established within the parking area if 28 other shipping containers are present must be demonstrated. The permit modification must also include much more specificity about the basis of any determination to return the shipping cask or decontaminate the cask. *Id.*

For the 10-160B shipping cask, 55-gallon drums can be unloaded in the hot cell before it can be determined if the proper drums are in the shipment that arrives at WIPP. at 16-25. For the RH-72B shipping cask, the canister number is apparently not verified until the transfer into the facility cask. at 16-26. Since there is a history of CH drums arriving at WIPP with number discrepancies, additional procedures must be established. The permittees should discuss options for such improvements, including, for example, a requirement that loading the drums at the generator site be videotaped to provide confirmation that the WWIS information is accurate. For the RH-72B cask, the canister should be identified so that the number can be verified when the shipment is in the RH Bay.

The permittees must develop better procedures for proper handling of the "orphan" tenth drum in 10-160B shipments. The procedures for "storing" such a drum are not specified nor is the location for such storage. at 16-25. It has not been demonstrated that storage of such a drum in the hot cell would not interfere with other operations. The permittees should describe alternative procedures, including prohibiting shipment to WIPP of RH drums other than in increments of three per shipment so that each shipment's drums can be accommodated in facility canisters.

The modification request does not discuss "derived RH waste." The request must either demonstrate that, unlike with CH waste, no such waste will be generated or it must describe in detail how such waste would be managed, stored and disposed.

#### D. Waste disposal

The modification request includes use of panels 4 and 5 for both CH and RH waste. at 3-16, 16-52. It is totally unacceptable to modify the permit's prohibition on emplacing CH waste in panels 4 and 5 in a modification that covers RH waste only. The modification includes no information regarding CH disposal practices in those panels, how they would be mined, and other required information. The use of panels 4 and 5 for any waste in this modification must be eliminated.

The term of the permit is until October 2009. Yet the permittees appear to be seeking an extension of the permit along with expanding the disposal panels. at 18-16. Such a permit extension must be denied, because it is not in compliance with the requirements of 40 CFR 270.50 and 270.51.

The modification request provides that 731 canisters of RH waste could be disposed in panel 2. at 3-16. Since CH waste disposal is scheduled to commence in panel 2 in early 2003, months or years before RH waste disposal is permitted, no RH waste disposal should be permitted in panel 2.

The modification request would increase disposal activity from one room as in the permit to three rooms. at 16-52. The implication is that disposal activity could be occurring in three rooms and at least two panels simultaneously. The permittees have not demonstrated how such disposal could be done without incident, nor have they demonstrated how underground transport of RH and CH drums simultaneously can be accomplished without accidents occurring. The request must detail how such activities will occur.

2. As the problems noted in #1 indicate, there is much missing required information, which also indicates the technical insufficiency of the request. Much of the missing information is because of a lack of technical data to support specific parts of the modification request. Where there are technical gaps, that data and technical justification must be developed and included for public comment in future modification requests.

3. As NMED is well aware, SRIC has long maintained that for reasons of public health and safety, interrelationships of various proposed modifications, and efficient use of resources that public hearings on Class 3 modifications be consolidated so that there are not separate hearings on various modifications every few months. Given that there are other pending Class 3 modifications -- the Centralized Confirmation Facility (CCF), Data Management (and potentially other modifications from the June 28, 2002 submittals), and Panel Closure -- any public hearing on the RH modification should be consolidated with the hearing on other modifications. The CCF modification, especially, is directly related to the RH since at least some of the activities, such a radiography included in the RH modification, could be conducted at WIPP if the proposed CCF is allowed.

4. The permit modification contains other errors.

The permittees propose a change on line 30 on page 16-52. While SRIC does not object to changing "min" to "minute," we would point out that the entire sentence still is incomplete since it does not state 35,000 cubic feet of what will be maintained.

Thank you for your careful consideration of these comments.



Don Hancock