



Many Voices Working for the Community

Oak Ridge Site Specific Advisory Board

April 11, 2000

Mr. Rod Nelson
Assistant Manager for Environmental Management
DOE-ORO
P.O. Box 2001
Oak Ridge, TN 37831

Dear Mr. Nelson:

Recommendations and Comments on the *Draft Environmental Impact Statement for Treating Transuranic/Alpha Low-Level Waste at the Oak Ridge National Laboratory, Oak Ridge, Tennessee, DOE-EIS-0305-D, February 2000*

At our April 5, 2000, Board meeting, the Oak Ridge Site Specific Advisory Board reviewed and approved the attached recommendations and comments on the subject document.

While the Board agrees with selection of the preferred alternative, the document, in general, does not meet our expectations in regard to other public documents from the Environmental Management Program. The Executive Summary alone contains enough simple errors (see attached comments) that it leads one to question if there are more complex errors buried in the technical sections. We are also concerned that an alternative (number 5) has been presented that includes permanent storage of transuranic waste in Melton Valley—an option that we find unacceptable.

We appreciate the opportunity to comment on the document and look forward to receiving your written response to our recommendations and comments.

Sincerely,


Steven H. Kopp, Chair

SHK/plo

cc: Bill Cahill, DOE-ORO
Susan Gawarecki, LOC
Clayton Gist, DOE-ORO
John Hankinson, EPA
Earl Leming, TDEC
Teresa Perry, DOE-ORO
Bryan Westich, DOE-ORO



Oak Ridge Site Specific Advisory Board
Recommendations and Comments
on the Draft Environmental Impact Statement
for Treating Transuranic/Alpha Low-Level Waste
at the Oak Ridge National Laboratory, Oak Ridge, Tennessee,
DOE-EIS-0305-D, February 2000

RECOMMENDATIONS

Road Construction

The issue of a new road to the Transuranic (TRU) Waste Treatment Facility was raised at the February 1999 scoping meeting. At that time, DOE said it was moving forward on the road under a categorical exclusion. We find no categorical exclusion applicable to construction of a two-lane, 1.4-mile road (suitable for two vehicles or two tractor-trailers to pass) through undisturbed woodland. We believe that DOE violated the National Environmental Policy Act (NEPA) and its DOE NEPA Implementing Procedures [10 *Code of Federal Regulations (CFR)* Part 1021] by (1) not preparing an environmental assessment for the construction of the road or (2) not including construction of the road in the Draft Environmental Impact Statement (EIS) for Treating TRU/Alpha Low-Level Waste (DOE-EIS-0305-D). Since the road is completed, the Oak Ridge Site Specific Advisory Board (ORSSAB) recommends that DOE at least include the impacts of road construction in the cumulative impacts section of the final EIS.

Alternative 5

This comment is confined to Alternative 5 [treatment of the TRU waste by vitrification, cementation, or drying and storage of the resulting product at some unspecified location in Melton Valley for a long-term (indefinite) period of time (see Table 5-3)].

The public has been led to believe that TRU waste will be treated on site, and following treatment, the product will be transported to the Waste Isolation Pilot Plant (WIPP) for disposal [Records of Decision (RODs) for the WIPP Site-Wide EIS II (DOE 1998) and the Waste Management Programmatic EIS (WM PEIS) (DOE 1998c) and various public SSAB meetings]. We recognize that some of the treated remote-handled TRU waste may remain on site until waste acceptance criteria at WIPP are determined. However, such short-term storage of part of the treated TRU waste is qualitatively quite different from a decision to keep all treated waste in Oak Ridge indefinitely.

We find Alternative 5 unacceptable for the following reasons, and even if the assessment were adequate, we believe the public would reject long-term storage of TRU waste on site for these reasons as well:

- a feasible stewardship plan for long-term storage is lacking;
- the costs and funding of long-term monitoring and maintenance are not addressed;
- the effects on future land use and on community image are not correctly considered;
- the more expensive vitrification process would likely be required in order to decrease any impacts to human health and the environment during indefinite storage without maintenance.

Thus, ORSSAB recommends that:

- Alternative 5 be deleted from the final EIS or be altered to provide for only short-term (temporary) storage in Melton Valley for a period of no more than 30 years,
- the final EIS find the current Alternative 5 unacceptable, or
- the inherent problems associated with Alternative 5 be fully assessed in the final EIS.

The retention of an alternative that includes long-term (permanent) storage of TRU waste on site is also likely to be costly in terms of public trust.

GENERAL COMMENTS

ORSSAB is inclined to agree with selection of the preferred alternative of low-temperature drying for the Melton Valley Storage Tank wastes (sludge and supernate) and segregation for the solid wastes [contact-handled and remote-handled TRU/alpha low-level heterogeneous debris], assuming that the relative differences in impacts of the alternatives for the proposed action remain as presented.

That the preferred alternative will actually achieve Resource Conservation and Recovery Act land disposal restriction standards in the event that WIPP is not accepting remote-handled TRU waste in time to meet the Tennessee Department of Environment and Conservation Commissioner's Order is of somewhat concern. It is understood that testing is underway, with results possibly not available until after a ROD is reached selecting the alternative.

Throughout the document, the subject of the WM PEIS and its associated ROD is addressed in the future tense. These references should all be revised to reflect the fact that the ROD has been issued, and the impact of that ROD should be described.

The issues of extraction of buried waste for treatment and transportation on the Oak Ridge Reservation (ORR) need to be addressed in some detail. Relying on other documents for this documentation does not allow the reader to understand the operations. It is a common observation that interface problems between two systems, e.g., transportation and facility, are often the most problematic aspects of a waste handling operation.

We would like to know if the three treatment options have ever been used on a large scale for materials similar to these waste. History shows that there are always unanticipated problems associated with start up of new technologies. If the technology is unproven, that should be acknowledged, and discussion of how to handle unexpected problems should be included.

The document, in general, is not particularly user-friendly. It does not meet the expectations of the public in regard to other public documents from the Environmental Management (EM) Program. In fact, there are enough simple errors in the Executive Summary alone (see the following specific comments) that it leads one to question if there are more complex errors buried in the technical sections; i.e., the non-technical errors lead to a question of overall credibility.

SPECIFIC COMMENTS

Page viii: Page numbers of Sects. 9, 10, and 11 are wrong. They should be 9-1, 10-1, and 11-1 respectively.

- Page S-1: The map of the ORR does not show the city boundaries of Oak Ridge, although it implies that it does visually. Change per the Site Specific Advisory Board recommendation on the topic, R04/01/98.10, *Accuracy in Describing Relationships Between ORR, City of Oak Ridge, and Surrounding Populated Areas* (see attachment), as agreed to by DOE-EM. Same comment on page 1-1.
- Page S-2: Line 7, add “EPA” to the list of those who have a high priority for cleanup.
- Page S-3: Second paragraph, last sentence - This implies complete, item-by-item characterizations of all solid waste to determine the presence of Resource Conservation and Recovery Act materials. Is this intended? If so, is it addressed in the technical analysis.
- Page S-3: Sect. S1.2.2, first sentence - Is 30 percent of the legacy tank waste still in Bethel Valley? The impression is that most of the Gunitite Tanks have been cleaned out.
- Page S-5: First paragraph - With all the cited documents requiring disposal of these wastes, how can alternatives 1 and 5 be considered?
- Page S-6: Third paragraph - First reference to WM PEIS ROD in the future tense.
- Page S-7: Last sentence above photograph - To what standards will decontamination and decommissioning (D&D) be conducted? Who is responsible for any residual contamination at the facility site?
- Page S-8: Preferred alternative is “Drying” not “During.”
- Page S-9: First paragraph: What are the “specified waste acceptance criteria?” Are they established now? They could have large impacts on performance, costs, etc.
- Page S-10: Sect. S1.4.2.2 does not mention the impacts of the facility access road. We believe that the use of a Categorical Exclusion is not proper for this action.
- Page S-10: Second paragraph, first sentence should read “...evaporating the free liquids and drying the TRU mixed waste sludges... .” You cannot evaporate sludges which include solids.
- Page S-11: Figure S-5 does not agree with descriptive text. It does not show the option of supernate transfer of the evaporator before mixing/sampling, nor does it show condensate reuse in sludge retrieval.
- Page S-11: Second paragraph - The topic of retrieval and delivery of solid wastes to the facility needs to be treated in this EIS.
- Page S-12: First paragraph - What happens if DOE does not find the compacted waste to be certifiable? Must it be recycled, and is the facility capable of that?
- Page S-12: Second paragraph - The conversion of units has an error. If $10,833 \text{ m}^3 = 3,843,546 \text{ ft}^3$ then $5,550 \text{ m}^3$ does not equal $19,423 \text{ ft}^3$ or vice versa.

- Page S-18: Table S-1 - This table is difficult to compare with other numbers in the text. Also, is D&D waste from the facility included? Does such waste go to the on-site disposal cell?
- Page S-19: Add to the difficulties with the Idaho National Engineering and Environmental Laboratory the fact that there is an agreement with the State of Idaho not to ship such waste to that state.
- Page S-20: Sect. S1.6.3 - Fauna list is probably not inclusive, e.g., skunk, possum.
- Page S-22: Sect. S1.6.9 - Water is supplied by the City of Oak Ridge Water Treatment Facility, not DOE.
- Page S-22: Sect. S1.6.10 - It is not clear whether these data (Table S-2) are for 1997 or for the period of plant operation. Also, should this operation not be separated from Oak Ridge National Laboratory (ORNL) calculations since there are two different contractors?
- Page S-23: Sect. S1.6.13 - Intuitively, the number of 7,500 people seems to be low for 5 miles from the center of ORR. It may be true for 5 miles from the center of ORNL.
- Page S-28: Table S-3 (Transportation) - There is no mention of the transportation of D&D waste, or of on-site transport of wastes to the facility.
- Page S-32: Paragraph 5 - Is ground disturbance fugitive emission from the EM Waste Management Facility spoils pit included? If not, why?

In Sect. 4.7.3, the air quality impacts of the low-temperature drying alternative are presented with a conclusion that the proposed emissions are below the State of Tennessee limits for air permitting exemptions. This assumption and recent changes in the regulations cited along with any consequences of ORNL being issued a Title V Operating Permit under the Clean Air Act during this time frame should be more closely evaluated. Continuous sampling that will be required for at least some radionuclides is not discussed.

Appendix B provides emissions and materials balance data for the preferred alternative and the vitrification and the cementation alternatives. Generally for radionuclides and metals, the methodology of Appendix D to 40 *CFR* Part 61 – Methods for Estimating Radionuclide Emissions – is applied. The procedure involves multiplying the amount used by a factor which depends on the physical state of the radionuclide (1 for gases, 10^{-3} for liquids and particulate solids, and 10^{-6} for solids). Additional adjustment factors are provided for effluent controls. For high-efficiency particulate air (HEPA) filters (plural), an adjustment factor to emissions of 0.01 is provided for particulate radionuclides. There may be some question, even though the factor is conservative, that it may be applied for each of multiple HEPA filters in series. Appendix D to Part 61 also states that if any nuclide is heated to a temperature of 100°C (212°F) or more that it must be considered a gas. The temperature of the low-temperature drying alternative is not apparent from any process descriptions in the document except in response to a question from the public scoping meeting summarized in Appendix A.3, where it was said to be 180–190°F. The temperature for vitrification is expected to be higher; therefore, the uncontrolled radionuclide emissions would be the amounts used in the process unless an additional assumption is made and validated. The Appendix D approach to calculating metals emissions may be questionable for mercury and possibly other metals with volatility such as lead. Finally, the basis for assumed inlet particulate concentrations (in grains per cubic foot) reaching the exhaust system HEPA filters is not

clear. Citation of additional data in terms of percent or fraction carryover from the process may be a helpful benchmark.

For the vitrification alternative, the treatment flow diagram (Figs. S-7 and 2-8) is presented in an over-simplified manner if a selective catalytic reduction unit is included for control of NO_x emissions.