



40-8787

UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D. C. 20555-0001

OCT - 6 1983

MEMORANDUM FOR: John J. Surmeier, Acting Assistant Director  
State Agreements Program  
Office of State Programs

FROM: Michael J. Bell, Chief  
Low-Level Waste Management Branch  
Division of Low-Level Waste Management  
and Decommissioning  
Office of Nuclear Material Safety  
and Safeguards

SUBJECT: ENVIROCARE LICENSE AMENDMENT REVIEW BY THE STATE OF UTAH

The State of Utah has tentatively approved, subject to resolution of public comments, a request by Envirocare to amend their disposal license to include fourteen additional radionuclides for receipt and disposal, including the mobile long lived radionuclides I-129, Tc-99, and C-14. The State has imposed strict requirements to prevent additional degradation of the Class III ground water for a period of 200 years for heavy metals and 500 years for mobile radionuclides. Waste containment for the periods of performance is achieved through design requirements for low permeability covers and liners. The State's evaluation does not consider performance beyond 500 years. By not allowing additional ground water degradation for 500 years, the State's standard is initially more strict than the radiological dose standard in 10 CFR Part 61, which would allow some ground water degradation over time. However, the State does not address facility degradation and long term performance beyond 500 years, which the Nuclear Regulatory Commission considers necessary.

The NRC was provided an informational copy of the State's evaluation. Although the evaluation was noticed for public comment, the State did not request comments specifically from the NRC. The staff reviewed this document in a similar manner to a normal State program review. The results of the staff review should be communicated to the State as the comments or concerns may still be valid at the next NRC program review.

Staff comments, based upon a limited review, are as follows:

The principal comment by the staff is that the State has not demonstrated compliance with all of the Utah Agreement State regulations which have previously been determined to be compatible with 10 CFR Part 61. The State analysis is based upon establishing and maintaining design requirements over the State's period of concern (i.e., 500 years.) However, 10 CFR Part 61.13 would require a pathways analysis demonstrating the public would be protected within the exposure limits set forth in 10 CFR Part 61.41. Part 61.13 would also require an analysis of long term site stability including an evaluation of design features subject to degradation from natural processes after closure. Adding long-lived radionuclides to the license would extend the period of the analysis well beyond 500 years. The end result of this analysis would be a finding of reasonable assurance that the performance objectives

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The State analysis discusses air pathway releases of Pu but does not address other potentially significant nuclides such as C-14 or tritium. Perhaps the State has additional documentation concerning pathways analysis which was not available to the staff. However, the staff experience to date, both in their own performance assessment efforts and in the efforts by the Department Of Energy facilities, has indicated a need to specifically evaluate C-14 in the air pathways analysis. For all of the above reasons, the Staff considers that the State's performance assessment needs to be updated.

Finally, regarding disposal of wastes containing heavy metals, it is unclear in the documents that we have been provided as to whether or not the amended Ground Water Quality Discharge Permit only pertains to previously disposed hazardous waste, or whether it would allow additional amounts of heavy metals to be disposed in the low-level waste embankment. The wording allows the interpretation that the amended Ground Water Quality Discharge Permit would permit continued disposal of heavy metals in the low-level waste facility. In addition, the State acceptance of the mixed waste at the low-level waste facility appears to be based on the similarity of the waste to uranium mill tailings. The NRC does not accept the application of regulations that were specifically promulgated for mill tailings disposal to be applicable for disposal of hazardous waste on the grounds that the hazardous waste has similarities to mill tailings. Therefore, it is our recommendation that the State should limit the disposal of wastes containing heavy metals to the mixed waste facility as was authorized under the original Ground Water Quality Discharge Permit.

**ORIGIOM SIGNED BY**

Michael J. Bell, Chief  
 Low-Level Waste Management Branch  
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As a final note, the State analysis appears to imply that the Executive Secretary has the authority to allow the addition of heavy metals to the site and to limit the analysis for heavy metals to 200 years. This State of Utah position to allow disposal of heavy metals in the low-level waste facility is questionable and should be discussed with the Office of General Counsel. Mill tailings wastes are defined by regulation and it is questionable to conclude that because something is similar to mill tailings all other provisions of the regulations are applicable. Second, a UMTRA analysis would start with the goal of 1000 year safe disposal and would consider 200 years as the minimum goal. The Executive Secretary may have had adequate justification for the licensing decisions, but it is not documented in the State's evaluation.

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John Surmeier

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As a final note, the State analysis appears to imply that the Executive Secretary has the authority to allow the addition of heavy metals to the site and to limit the analysis for heavy metals to 200 years. The only justification provided is that the metals are similar to the heavy metal contaminants found in mill tailings wastes and therefore should be acceptable. This is admittedly a RCRA issue, is outside of the staff's responsibility, and may well be within the authority of the State under their agreement with EPA. However, the simple statements in the analysis raise more concerns than it resolves. First, mill tailings wastes are defined by regulation and it is not acceptable to state that something is similar to mill tailings so the mill tailings limits apply. Second, a UMTRA analysis would start with the goal of 1000 year safe disposal and would consider 200 years as the minimum goal. The Executive Secretary may have had adequate justification for the licensing decisions, but it is not documented in the State's evaluation.

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