D509 6647 S. Washer 58FR11642

PERKINS COIE

A LAW PARTNERSHIP INCLUDING PROFESSIONAL CORPORATIONS
607 FOURTEENTH STREET, N.W. • WASHINGTON, D.C. 20005-2011
(202) 628-6600 • FACSIMILE (202) 434-1690

2/24/93

(21)

May 28, 1993

VIA CERTIFIED MAIL

Chief, Rules Review and Directives Branch
Division of Freedom of Information
and Publication Services
Mail Stop P-223
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Re: Revised
Comments of US Ecology, Inc. on the Nuclear Regulatory Commission's Draft Environmental Impact Statement Regarding Envirocare of Utah, Inc.'s License Application to Dispose of 11e.(2) Byproduct Materials

Dear Sir:

Please find enclosed a further revised version of the Comments of US Ecology, Inc. on the Nuclear Regulatory Commission's Draft Environmental Impact Statement Regarding Envirocare of Utah, Inc.'s License Application to Dispose of 11e.(2) Byproduct Materials. Previous versions of this document were supplied to you on April 30 and May 4, 1993.

I apologize for any inconvenience this may have caused you. In order to avoid confusion, I suggest you discard all previous versions of our comments supplied to you.

As always, please call if you have any questions or comments regarding these materials.

Very truly yours,

Anthony J. Thompson

AJT:clc
Enclosure

[09901-0001/DA931240.004]

COMMENTS OF US ECOLOGY, INC. ON THE NUCLEAR REGULATORY COMMISSION'S DRAFT ENVIRONMENTAL IMPACT STATEMENT REGARDING ENVIROCARE OF UTAH, INC.'s LICENSE APPLICATION TO DISPOSE OF lle.(2) BYPRODUCT MATERIAL

General Comments.

1. US Ecology regrets that its comments on the Draft Environmental Impact Statement (DEIS) regarding Envirocare of Utah, Inc.'s application to dispose of high volume, low-activity, lle.(2) by-product material are filed after the date comments were due (April 26, 1993). The notice of availability of the DEIS published by the Nuclear Regulatory Commission (NRC) (58 Fed. Reg. 11642, February 26, 1993), contained no date by which comments would be due. The notice of the due date for comments was published by the Environmental Protection Agency (EPA) (58 Fed. Reg. 13597, March 12, 1993) in a tiny blurb that provided a difficult to find and confusing vehicle for public notice of the time frame for filing comments. In any event, US Ecology appreciates NRC's stated willingness to consider these comments.
2. US Ecology observes that in evaluating Alternative 1 (an above-ground embankment) and Alternative 2 (a below-

ground embankment) for disposal at the South Clive, Utah site, the DEIS makes no reference to the fact that under Criterion 3 in 10 C.F.R. Part 40, Appendix A, the "prime option" for disposal of tailings is below grade disposal. (DEIS 2.4-.5). The DEIS merely indicates that Alternative 2, while viable, is not preferred because the design places the waste closer to the water table (i.e., within five feet) and would require a greater amount of acreage to dispose of the same volume of waste, increasing unit costs and land requirements.

The alternatives that are addressed are rather cut and dried and the solution to the "questions" presented seems to be a forgone conclusion. For example, the DEIS also indicates that no "detailed design" was even made for Alternative 2. This hardly constitutes a rigorous explanation of why the "prime option" (or some modification thereof) is so cavalierly brushed aside.

3. Placing the tailings below grade at the proposed site could be important because it is located within a few hundred meters of a major U.S. Interstate Highway (I-80). A high-profile site reclaimed with rock rip-rap not otherwise available in the area might prove to be an attractive nuisance which would lure inadvertent intruders who could access an unpatrolled and unguarded site and remove the rock for personal use.

4. There should at least be an in-depth discussion of the trade-off between placing the bottom of the facility within five feet of the groundwater, which is of notably poor quality (DEIS at 4.32), and the erosion potential associated with a mound that is 44 feet above the surface. Additionally, there is no discussion of whether or not a modified, shallower below-grade disposal alternative that would result in more of a buffer between the facility liner and the groundwater, and that would accordingly result in a lower profile surface mound, would be a preferable option.

   For example, the cell could be designed using a balanced cut-and-fill to ensure that a significant portion of the tailings will be placed below grade. The additional excavated soil materials could be used to construct protective containment berms around the cell that would provide some degree of wind protection (and thus reduce dusting potential) and prevent the release of tailings should the site experience a large-magnitude precipitation event (e.g., the PMP).

5. It is unclear from an evaluation of the diagrams included in the DEIS whether the proposed disposal areas would comply with the requirements of 40 C.F.R. Section 61.252(b)(1) or (2) which requires (1) phased disposal of tailings in lined impoundments that are no more than 40

acres in area at operational tailings disposal facilities, or (2) continuous disposal and dewatering with no more than 10 acres of tailings exposed at any time. The DEIS indicates that the disposal cell will be 1776 x 1809 feet (EIS at 5.15) which is substantially larger than 40 acres. This is clearly an issue that the EIS should address.

6. The proposal includes a significant buffer zone (300 feet between the closest edge of any embankment and the outside site boundary or property line), as well as a buffer zone of 100 feet between the closest edge of any embankment and the Vitro site fence. (EIS 2.9). The EIS also indicates that the perimeter berm during construction would be replaced by a perimeter ditch, four feet deep and forty feet wide around the tailings impoundment. US Ecology wonders whether there has been a written affirmation by DOE that it will take title to the berm and/or the buffer zones at the time of final closure. The DEIS merely assumes that site ownership will be transferred to DOE and that DOE will accept it. (DEIS at 5.34). The question is: what constitutes the "site?"

   This issue does not appear to be discussed in the DEIS although it is a question of some significance, considering the fact that there are multiple sites at the

South Clive facility. The sites include the DOE Vitro site, the proposed 11e.(2) site, a NORM/Low-Level Radioactive Waste (LLRW) disposal site (which is not owned nor committed to be owned by either the State of Utah or the Federal Government) and a mixed waste disposal facility (which also has no commitments regarding long-term federal or state ownership, although it will contain LLRW). As a result of the potentially conflicting regulatory requirements, and the potential difficulties that may stem therefrom (e.g., such as determining the source and responsibility for any releases outside various cell boundaries whether within the site boundary or not), it would appear that the DEIS is flawed in not discussing what portion of this site DOE has formally agreed to accept.

Additionally, the most recent draft version of the NRC's Staff Technical Position (STP) entitled "Alternate Concentration Limits for Title II Uranium Mills" (December 1992), would require written concurrence from DOE if a licensee proposes to include lands beyond the tailings or impoundment boundary(ies) as part of the land to be transferred for long-term care. It would appear that this requirement would apply equally to the buffer zone and diversion channels if they are to become part of the final landform.

7. The discussion of Alternative 1, while describing the proposed stabilization plan in very general terms, nowhere mentions whether it would comply with NRC's recently "Final Staff Technical Position, Design of Erosion Protection Covers for Stabilization of Uranium Mill Tailings Sites (August, 1990)." All current Title II licensees all were recently required to revise their proposed reclamation plans in light of NRC's Final Staff Technical Position, and a discussion of how the Envirocare proposal would comply with NRC's current stabilization criteria would appear to be appropriate in an NRC DEIS.

Specific Comments.

1. The DEIS contains scant discussion of the proposed seven-foot thick clay cover. To be acceptable, the cover should both reduce radon emanation to acceptable levels and retard the infiltration of moisture from precipitation. The second point is important because Envirocare proposes to use a rock armor as the final cover. The rock armor will act as a mulch and will trap and hold moisture from snow and rainfall that would otherwise blow away or evaporate. It is therefore likely that the cover would quickly saturate, even under the low amount of estimated precipitation for the area. Once

saturated, moisture would infiltrate through the cover and recharge the tailings. The saturated tailings would then become a long-term source of seepage and ground-water radionuclide contamination.

2. **Section 2.3.2.3 Support Facilities.**

Gray water from showers, etc., will likely be contaminated with 11e.(2) material and should therefore be considered byproduct material for the purposes of treatment and disposal. That is, it should be used only for dust control on the disposed tailings or evaporated in lined ponds specifically constructed for that purpose. The byproduct sludge from these ponds should also be placed in the final cell at the end of operations.

3. **Section 2.3.2.6 Support Facilities.**

Decontamination Areas: No mention is made of radiological surveys of decontaminated equipment which should be conducted prior to releasing any trucks or rail cars that transport 11e.(2) materials to the site for unrestricted use. NRC should address this issue.

Excavated Materials Area: Native vegetation should be used to stabilize the overburden and topsoil

stockpiles. If vegetable growth cannot be sustained, the facility should use a commercial dust palliative to prevent particulation and excessive dust emissions.

4. **Section 2.3.3 Principal Design Features.**

Excavating to a depth of 8 feet will not provide adequate berm material to construct cells of adequate size to contain the tailings. It appears that a significant portion of the waste is to be placed above grade - without protection from wind and water erosion - and covered later. Without wind protection, or continuous wetting, or the continuous application of a dust control agent, the tailings could blow and contaminate a large area outside the designated disposal cell(s). Further, in the event of a large rainfall occurrence, such as the PMP, berms that exceed the height of the tailings would both protect the tailings from the wind and would contain the full volume of tailings should an extreme precipitation event occur. It is likely that NRC would find a similar design (without berms) for a conventional tailings disposal cell inadequate, even for dewatered tailings, since byproduct material could be released under ar

extreme runoff event such as the PMP. The DEIS does not fully address these issues.

5. **Section 2.3.3.1 Water.**

The DEIS dismisses the potential for significant recharge of the tailings due to infiltration. However, U.S. Ecology is aware that DOE sites reclaimed with rock covers in arid areas of the west have experienced significant recharge, thought to be caused by the rock protection used to stabilize the piles for the long term. Further, experience using the EPA HELP model at DOE sites indicates around 1/2 inch of infiltration (recharge) would occur each year at the Clive area, assuming a vegetated surface. However, the Clive site will be protected with rock which may enhance recharge. Nonetheless, if one nonconservatively assumes 1/2-inch of recharge per year, the tailings would resaturate after relatively few years because of the relatively low tailings porosity. The resaturated tailings would then begin to seep and eventually saturate the liner. Further, if the processed clay liner proposed for the cell bottom is significantly less permeable than the cover, the cells will become "bathtubs" and exacerbate seepage by creating a significant driving head. Hence, NRC's arguments

are not very convincing, especially given its own overriding concerns with infiltration at Title II sites.

6. **2.3.3.2 Radon Barrier.**

As noted previously, the rock cover that will ostensibly reduce potential drying of the recompacted clay will actually act as a water conserving mulch and thus promote moisture infiltration.

Placing clay materials in 12 inch loose lifts has generally been frowned on by NRC at Title II sites. NRC usually prefers to see covers placed in loose lifts that do not exceed nine-inches and compact to 6 inches. Further, placing the clay material in thicker layers may require that the licensee test more frequently to assure that they attain 95 percent of maximum dry density. It is not clear whether NRC finds these proposed construction specifications acceptable for this site or why. This issue should be clarified in the DEIS.

7. **2.3.3.3 Erosion Barrier**

Again, the rock armor will serve as an infiltration-promoting mulch which will enhance tailings recharge and exacerbate potential long-term seepage.

8. **2.3.3.9 Construction Considerations**

NRC historically has not approved placement or compaction of soil materials in tailings embankments at less than 95 percent of maximum density and should explain why compaction at 90 percent of maximum density is acceptable in this instance. Also, NRC does not say whether the proposed site will have sufficient runoff storage to contain and evaporate the contaminated water that would accumulate if a significant precipitation event (e.g., 100 year return interval or greater) were to occur.

9. **Section 4.4.1.3 Synthetic Flood Analyses**

The PMP analysis says nothing about the ability of the site to contain and/or evaporate the contaminated water that would accumulate if the PMP were to occur during operations. Also, NRC has not analyzed runoff velocities across the site, the tailings or the cell berms during operations. NRC

should correct this deficiency. Further, if berms are not constructed to the full height required to contain the disposed tailings and PMP rainfall, the resulting runoff could erode and release a significant quantity of tailings.

10. US Ecology notes that the DEIS does not contain any assessment of whether or not the facility will comply during operations with the radon emission limit (20 $pCi/m^2/s$) contained in 40 C.F.R. Section 61.252(a). In addition, the DEIS states that, in general, "site specific assessments of potential radiological impacts from the proposed Envirocare 11e.(2) by-product material disposal facility are not sufficiently advanced to estimate occupational and public doses with confidence." (DEIS at 5.14). Indeed, the estimated radiological impacts appear to rely entirely upon the analysis prepared by DOE for the Vitro facility (DEIS at 5.16-.17). The discussion of DOE's evaluation appears to rely primarily on potential radiological impacts at the Vitro facility <u>after</u> <u>closure</u> as the flux rate from uncovered tailings at Vitro was assumed to be on the order of 560 $pCi/m^2/s$. This number would greatly exceed EPA's operational flux limit of 20 and the DEIS assumes that final cover will begin to be

applied about 4 or 5 years after facility operations begin.

Further, it is evident that the radiological impact assessment appears substantially deficient when compared to similar assessments performed by applicants for uranium milling licenses. Since the site is essentially a uranium mill tailings disposal site, it should be held to an equivalent level of analysis and be judged on that basis on its own merits. Therefore, the DEIS' evaluation of this issue appears to be wholly insufficient.

It is also likely that at 560 pCi/gm, Radium-226, the designed unit will not comply with the Subpart W 20 pCi/m^2-sec radon emanation standard without concurrent covering or wetting of the tailings. Wetting at a level sufficient to control radon emanation could likely saturate the tailings and cause contaminated seepage to accumulate on the impoundment "liner." Again, there is no cogent plan to control potential seepage releases.

11. It is also worth noting that with respect to occupational exposures from radon, DOE made assumptions during closure at the Vitro site that were never validated because the State of Utah

failed to measure radon concentrations during closure. (DEIS at 5.18).

12. The DEIS does not appear to discuss in any great detail how the Envirocare proposal will differ from the Vitro site and whether or not differences in the likely characteristics of the waste are significant in light of the recent revisions to 10 C.F.R. Part 20. For example, the limits for release of thorium in 10 C.F.R. Part 20 have been reduced almost 300 times and would have potential compliance impacts with respect to both worker and environmental exposure.[1]

The relatively high thorium-230 concentration in the tailings and an assumed release rate of 440 tons per year of particulate are further indications that the site may not meet the proposed thorium standard at the site boundary.

---

[1]It should be noted that EPA regulations for control and stabilization of uranium mill tailings (40 C.F.R. 192.41 et seq.) apply to both thorium and uranium mill tailings. Id. See also, 10 C.F.R. Part 40, Appendix A, Introduction.