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URFO:TTO
Docket No. 40-1341
SUA-816, Amendment No. 29
04001341610E

MEMORANDUM FOR: Docket File No. 40-1341

FROM: Thomas T. Olsen, Project Manager
Licensing Branch 1
Uranium Recovery Field Office, Region IV

SUBJECT: AMENDMENT NO. 29 TO SOURCE MATERIAL LICENSE SUA-816
FOR THE TENNESSEE VALLEY AUTHORITY'S EDGEMENT
PROJECT

BACKGROUND

By letter dated February 5, 1988, the Tennessee Valley Authority (TVA) requested an amendment to Source Material License SUA-816. The request specifically addresses License Condition No. 21, which requires clean up of windblown tailings and contaminated soil in the Pine Hills area, which is located on the eastern side of the mill site.

Through a cooperative agreement with the Department of Energy, TVA assumed the responsibility of clean up of the Pine Hills area. TVA evaluated the windblown contamination in the Pine Hills area and requests that a portion of the Pine Hills area not be disturbed due to numerous difficulties, including potential adverse environmental impacts and cost effectiveness of such clean-up activity.

In support of this request, TVA submitted a detailed evaluation based on criteria similar to 40 CFR Part 192.21, "Criteria for Applying Supplemental Standards." This criteria was established by the EPA for use at sites that are to be cleaned up under Title I of the Uranium Mill Tailings Radiation Control Act of 1978 (UMTRCA). An outline of 40 CFR Part 192.21 criteria for when supplemental standards can be

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applied to Vicinity Properties at Title I sites is as follows. The clean up to established levels of concentrations in soils would:

1. pose clear and present risk of injury to workers or public notwithstanding reasonable methods, to limit damage;
2. directly produce environmental harm that is clearly excessive compared to the health benefits to persons living on or near the site, now or in the future;
3. result in an estimated cost of remedial action which is unreasonably high relative to the long-term benefits, and the residual radioactive materials do not pose a clear, present or future hazard; or
4. result in unreasonably high cost of clean up of a building relative to the benefits.

The Uranium Recovery Field Office, (URFO) has completed a review based on criteria cited under 40 CFR Part 192.21 and the review basis is outlined in the following paragraphs.

EVALUATION

The clean up criteria required by their license is removal of material in the top 15 centimeters that exceed 5 pCi/g above background and in subsequent 15-centimeter layers that exceed 15 pCi/g above background.

The Pine Hills area exhibits a steep valley and draw topography and is vegetated by ponderosa pine trees. It is approximately 70 acres in spatial area and incorporates both TVA land and private land owned by Mr. Russell D. Heppner, a local rancher. TVA's proposal is to clean up areas within and around the valleys in accordance with the required limits for concentrations in soils, except where conditions for clean up would be environmentally impractical, a risk of injury to workers and not cost effective.

TVA has shown that the only method practicable for clean up is to use heavy machinery (dozers). However, about 30 percent of the area in the Pine Hills exceeds a 1:1 slope or 45 degrees. This is considered to be unsafe for operation of such heavy equipment and would be a potential risk for injury to workers assigned to heavy equipment operation. This

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would meet the first criteria under 40 CFR 192.21, which relate to the risk to workers.

The slopes existing in the Pine Hills area are presently vegetated with pine trees and intermittent juniper and cedar. All areas are covered with grasses such as wheat grass and blue stem, which serves to stabilize the slopes. To clean up all the contaminated material would result in total destruction of the trees. This is the only area in the immediate vicinity of Edgemont where these trees presently grow. Topsoil on slopes is marginal in depth, ranging from only 1 to 4 inches. Clean up or removal of such established vegetation and soils would cause excessive wind and water erosion to the area. There would be high potential for material mass movement and this could also interfere with the ongoing clean up of flat-lying areas downslope. This would clearly meet the second criteria under 40 CFR 192.21, in that the environmental harm is excessive in comparison to the benefits.

The removal of hillside materials could also interfere with local animal habitat by eliminating sources of food and shelter.

The TVA data shows that there are approximately 60,000 bank cubic yards of contaminated material in the Pine Hills area. The area that encompasses the steep hillsides is approximately 11,000 bank cubic yards. In comparison to the total area to be cleaned up, this is small in amount. The cost comparison shows that the additional clean up of the steep hillside areas would increase total expenditure by a factor of 5.5, or approximately 3 million additional dollars. Since the third criteria allows the consideration of excessive costs, these figures are unreasonable when compared to the long-term benefits.

Additionally, the radiological contamination is relatively low with an average of 8.6 pCi/g in the steep slope areas compared to a 20 pCi/g in the flatter valley areas. The overall radiological level established for background is 2 pCi/g for the entire area.

TVA's data also shows that the whole body exposure that would result from leaving the contaminated material in the Pine Hills area is approximately 2.8 mrem/yr. The total whole body radiation exposure to the maximum individual due to the Pine Hills area and decommissioned site residual materials would be approximately 1.9 percent of the NRC 10 CFR Part 20 limit and approximately 6.3 percent of the natural background in the Edgemont area. These values would result in very small increases over the ones estimated in the Final Environmental Statement. It is also

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noted that due to the topography in the areas that are proposed not to be cleaned, there is little likelihood that this land will be permanently occupied anytime in the future.

Additionally, the private land owner (Mr. Heppner) associated with the Pine Hills area has submitted a letter to URFO dated March 29, 1988, in which he supports the TVA request and that he does not wish the trees destroyed to remove the residual radioactive material.

CONCLUSION

Based on the above evaluations, the staff has determined that the Pine Hills area would meet three of the four criteria of 40 CFR 192.21 to allow the application of supplemental standards. The fourth criterion does not apply, as it is intended for buildings and other structures. The staff also notes that only one of the criteria have to apply, whereas the Pine Hills area meets the requirements of all that are applicable. Accordingly, the staff recommends that Source Material License SUA-816 be amended by revising License Condition No. 21 to read as follows:

- 21. The licensee shall determine the extent of and shall clean up windblown tailings and contaminated soil at the mill site as outlined in the TVA/DOE cooperative agreement dated April 24, 1987, in accordance with the procedures outlined in Section 2.2.2.6 of the FES, and with the submittal dated February 5, 1988.

Thomas T. Olsen, Project Manager
Licensing Branch 1
Uranium Recovery Field Office
Region IV

Approved by:

Edward F. Hawkins, Chief
Licensing Branch 1
Uranium Recovery Field Office, Region IV

Case Closed: 04001341610E

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