

40-1341/RFB/85/04/09/1

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JUN 04 1985

URFO:RFB
Docket No. 40-1341
04001341320E

Tennessee Valley Authority
ATTN: J. W. Hufham
500A Chestnut Street - Tower II
Chattanooga, Tennessee 37401

Gentlemen:

Our review of your submittal entitled "Reduction in Final Cover on the Edgemont Decommissioning Disposal Site," dated March 6, 1985, has been completed. Your estimated cover thickness required to ensure compliance with the radon flux criteria at the end of 1000 years (i.e., 1 foot) is considered to be an acceptable prediction of the soil loss due to water and wind erosion processes during this time period. However, your proposed cover thickness of 5 feet, including the 3-foot thick clay cap is insufficient to attenuate radon to the required average flux of 20 picoCuries per square meter per second. This staff position is based on calculations utilizing the RAECOM computer code and input data obtained from your submittal dated September 19, 1983. An additional 2 feet and 3.6 feet of cover is required for Cell Nos. 3 and 4, respectively. These calculations assumed a radium-226 concentration of 300 picoCuries per gram for the sand tailings and 3000 picoCuries per gram for the slime tailings. Thus, the total required cover thickness is 9.6 feet (6 feet proposed, plus 3.6 feet additional) to meet the radon flux criteria at the end of 1000 years.

Although the cover thickness design was based on a radon flux criteria, we will also require that the clay cap be protected from the weathering effects of frost. Our preliminary information indicates that the average frost depth in the Edgemont area is about 4 feet. Therefore, please provide us with a conservative frost depth estimate for the Edgemont area, approximately equal to the design life of the project, substantiate this estimate and submit a revised design for our review and approval.

Receipt of the requested information is necessary before we can proceed with review of your proposed cover design. No further action on the

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proposed changes will be performed by the staff, pending receipt of the requested information. A copy of the staff review of your submittal is enclosed for your information.

If you have any questions, please contact Mr. Randy Brich on FTS 776-2814.

Sincerely,

Original Signed By
Edward F. Hawkins

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

Enclosure: As stated

OFC	:URFO	:URFO	:	:	:	:	:
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