

April 11, 1997

Mr. George Rael, Acting Director
U.S. Department of Energy
Albuquerque Operations Office
ERD/UMTRA
P.O. Box 5400
Albuquerque, NM 87185-5400

SUBJECT: REVIEW OF PROJECT INTERFACE DOCUMENT NO. 11-S-14 FOR THE SLICK ROCK
DISPOSAL SITE

Dear Mr. Rael:

On September 5, 1996, the U.S. Department of Energy (DOE) transmitted Class II Project Interface Document (PID) No. 11-S-14 for the Slick Rock, Burro Canyon disposal cell to the U.S. Nuclear Regulatory Commission. PID 11-S-14 proposes a change in the borrow source for the radon barrier material. Based on its review, the NRC staff has concluded that the subject PID should be classified as a Class I change, because it involves changes to the radon barrier material; therefore, the PID was reviewed by the staff.

Based on the information provided by DOE, the staff concurs in the change of borrow source for radon barrier material proposed by DOE in PID 11-S-14. The staff's review is documented in the enclosed Technical Evaluation Report.

If you have any questions concerning this letter or the enclosure, please contact the NRC Project Manager, Charlotte Abrams, at (301) 415-5808.

Sincerely,
(Original signed by)
Charles L. Cain, Acting Chief
Uranium Recovery Branch
Division of Waste Management
Office of Nuclear Material Safety
and Safeguards

Enclosure: As stated

cc: J. Pape, DOE Alb
S. Hamp, DOE Alb
E. Artiglia, TAC Alb

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TECHNICAL EVALUATION REPORT
SLICK ROCK, COLORADO, PROJECT INTERFACE DOCUMENT 11-S-14

SITE: Slick Rock, Colorado

LOCATION: Burro Canyon Disposal Site

PROJECT MANAGER: Charlotte Abrams

TECHNICAL REVIEWER: Elaine Brummett

SUMMARY:

U.S. Department of Energy (DOE) Project Interface Document (PID) 11-S-14 allows material from the offsite Sukla borrow source to be used as radon barrier material, instead of, or blended with, the previously approved Burro Canyon borrow material [U.S. Nuclear Regulatory Commission Technical Evaluation Report (TER, September 30, 1996) for the Remedial Action Plan for the Slick Rock site and TER for PID 11-S-03]. Test data (PID Calculation 11-535-01-00) were obtained for two borrow source options: all-Sukla material and a blend of 1.4:1, Burro Canyon to Sukla material. The radon flux was estimated (PID Calculation 11-535-02-00) based on blended radon barrier material with a model including a 1.5-foot-thick radon barrier plus a 2-foot-thick frost barrier of Burro Canyon material. DOE indicated that the geotechnical test data for the all-Sukla material are more conservative than data for the blended material; therefore, a radon flux analysis of the all-Sukla material was not performed.

DOE CODE INPUT

August 19, 1996, Sukla/Burro Canyon blended barrier, average values, calculation 11-535-02-00

LAYER/ MATERIAL	THICK (cm.)	POROS- ITY	DENS. (g/cm ²)	Ra-226 (pCi/g)	Rn EM.	MOIST. % by wt.	DIF. COEF (cm ² /s)
1. NC material	762	.44	1.51	345	.42	8.5	.019
2. UC Tailing	1067	.46	1.46	135	.19	4.3	.029
3. UC off and sub pile	853	.39	1.64	35	.32	(was 9.4) 8.0	.019
4. Rn Barrier	45	.366	1.72	0	-	13.9	.002
# samples		(3 sg)	(6)			(5)	(5)
5. Frost Barrier	61	.46f	1.56	0	-	6.0 assumed	.039 calc
# samples		(21sg)	(8)	0	0	19 in situ 9.1	0

NC = North Continent; UC = Union Carbide; sg = specific gravity

DOE's analysis indicates that the radon flux from the top of the frost protection layer will be 2.7 pCi/m²s, which is below the 20 pCi/m²s limit.

ENCLOSURE

TECHNICAL EVALUATION

The change in the borrow source for the Slick Rock disposal site will result in changes in the radon flux model parameter values for the contaminated materials, with the exception of the long-term moisture content of the UC off-pile and sub-pile material. The moisture content value was reduced from 9.4 percent, based on recent 15 bar capillary moisture testing. The change is acceptable; however, the NRC staff recommends that, DOE confirm the diffusion coefficient of this material during construction and, in its final flux analysis for the site Completion Report, provide a calculation of the radon diffusion coefficient using the revised moisture value.

ENCLOSURE