PDR

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

JAN 23 1980

WMUR:RC
WM-22

Mr. Albert J. Hazle, Director
Radiation and Hazardous Waste
Control Division
Colorado Department of Health
4210 East 11th Avenue
Denver, Colorado 80220

Dear Mr. Hazle:

The radiological impact evaluation of the Cotter uranium mill in Canon City, Colorado on the proposed Oro Verde subdivision has been performed as requested in your letter to G. Wayne Kerr, dated December 19, 1979. A copy of the results are enclosed.

The data were derived through the use of our modified UDAD program which utilized the same assumptions as in our previous analyses for this site. Since the data are the result of a predictive analysis and since the effects of local terrain were not addressed in this run, it is recommended that the Department require Cotter Corporation to install air monitoring equipment at the boundary of the subdivision nearest the Cotter site to enable a more accurate determination of doses.

It is our understanding that this should fulfill your requested needs. If further questions arise on this matter or other actions are required, please adivse.

Sincerely,

Ross A. Scarano, Chief
Uranium Recovery Licensing Branch
Division of Waste Management

Enclosure:
As stated

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ENCLOSURE

1. Maximum individual from previous assessment 4/79.

5.3 km E of mill

Total Dose Commitments (mrem/yr)

Exposure Pathway	Total Body	Bone	Lung	Bronchial Epithelium
Inhalation	0.16	4.54	13.4	16.0
External	2.90	2.90	2.90	-
Veg. Ingestion	1.06	12.7	1.06	-
Meat Ingestion*	0.44	5.58	0.44	-
	4.56	25.72	17.80	16.0

40 CFR 190 Dose Commitments (mrem/yr)**

Exposure Pathway	Total Body	Bone	Lung
Inhalation	0.16	4.54	13.4
External	0.09	0.09	0.09
Veg. Ingestion	1.06	12.7	1.06
Meat Ingestion*	0.44	5.58	0.44
	1.75	22.91	14.99

*Meat ingestion doses from cattle grazed 1.82 km ESE of mill.

**These dose commitments exclude contributions from Rn-222 and its radioactive daughters.

2. Residence location 1.07 km W of mill 1/80.

Total Dose Commitments (mrem/yr)

Exposure Pathway	Total Body	Bone	Lung	Bronchial Epithelium
Inhalation	0.49	14.2	59.3	57.4
External	4.83	4.83	4.83	-
Veg. Ingestion	1.79	21.7	1.79	-
Meat Ingestion*	0.44	5.58	0.44	-
	7.55	46.31	66.36	57.4

40 CFR 190 Dose Commitments (mrem/yr)**

Exposure Pathway	Total Body	Bone	Lung
Inhalation	0.49	14.2	59.3
External	0.23	0.23	0.23
Veg. Ingestion	1.79	21.6	1.79
Meat Ingestion*	0.44	5.58	0.44
	2.95	41.61	61.76

*Meat ingestion doses from cattle grazed 1.84 km ESE of mill.

**These dose commitments exclude contributions from Rn-222 and its radioactive daughters.

3. Residence location 1.07 km WNW of mill 1/80

Total Dose Commitments (mrem/yr)

Exposure Pathway	Total Body	Bone	Lung	Bronchial Epithelium
Inhalation	0.56	16.6	71.4	64.0
External	5.46	5.46	5.46	-
Veg. Ingestion	2.02	24.4	2.02	-
Meat Ingestion*	0.44	5.58	0.44	-
	8.48	52.04	79.32	64.0

40 CFR 190 Dose Commitments (mrem/yr)**

External Pathway	Total Body	Bone	Lung
Inhalation	0.56	16.6	71.4
External	0.27	0.27	0.27
Veg. Ingestion	2.20	24.4	2.02
Meat Ingestion*	0.44	5.58	0.44
	3.47	46.85	74.13

*Meat ingestion doses from cattle grazed 1.82 ESE of mill.

**These dose commitments exclude contributions from Rn-222 and its radioactive daughters.

40 CFR 190 limits doses to any member of the public as follows:

i) 25 millirems/year to the whole body,
ii) 75 millirems/year to the thyroid, and
iii) 25 millirems/year to any other organ.

The lung dose to any individual at location 3 exceeds the limit by a factor of 2.97.