

Regulatory

File Cy.

**KERR-MCGEE CORPORATION**

KERR-MCGEE BUILDING • OKLAHOMA CITY, OKLAHOMA 73102

April 4, 1973

AIR MAIL
SPECIAL DELIVERY

Mr. L. E. Rouse, Chief
Fuel Fabrication and Reprocessing Branch
Directorate of Licensing
United States Atomic Energy Commission
Washington, D. C. 20545

Attention Mr. J. E. Rothfleisch

Dear Sir:

Please refer to our conversation of April 3, 1973 wherein you asked us for additional information on our March 7 submittal of "Application for Amendment to License SUB-1010, Docket 40-8027, Disposal of Raffinate Liquids."

1. The data presented for the proposed submerged combustion burner is not scaled up by a factor of $15.0/.3 \times 10^6$ BTU/Hr. The gas consumption and exhaust gas rates are taken directly from data supplied by Ozark-Mahoning Company as their nominal rates. As a consequence, the gas ratio calculated to be 52.5 rather than the 50.0 expected from the ratio of the rated heat loads of the two burners. The stack discharge rate given on Table II is the result of measurements rather than manufacturer's data. Minor variation may be experienced in the operation of the bigger unit.
2. Source of feed analysis for Table I is the feed analysis of all runs made during the test series selecting the most conservative data as charged to this proposed installation. The data actually used in the calculation is shown below Table A attached.
3. Calculations of stack emission were based upon Figures A, B and C attached. Data was collected as a part of similar operation or from Run No. 9 with the exception of the ammonia content which was specifically selected as 21 mg/M³ from Run No. 5 using neutralized raffinate.

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PDR ADOCK 04008027
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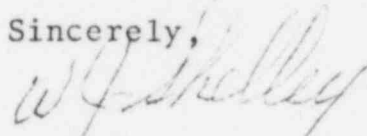
Mr. L. E. Rouse
April 4, 1973
Page Two

The differences in feed concentrations between Table II and III can be seen by examining Table A. A combination of data from several runs was used to provide the more conservative approach.

4. Please correct the value on Page VI-6.1.12, Paragraph 5, for XU/Q_{\max} to equal 1.2×10^{-3} rather than 1200 which is in error.
5. On Page VI-6.1.9 please correct the sentence at the top of the page to read: "The samplers will be initially examined for radioactive contaminants on each shift and for chemical gases daily for a period of three days to insure that the installation is meeting estimated effluent levels. After at least three days of routine operation levels, radioactive contaminants will be examined on a daily basis and chemical gases on a weekly basis."
6. On Page VI-6.1.14 please delete the last sentence of the third paragraph and replace it as follows: "In this manner, the radionuclides are separated from the bulk of the liquid waste resulting from the solvent extraction cycle and may be permanently disposed of as solids in a commercial licensed burial area or returned to the uranium mills for recovery of the uranium content."
7. Please add on Page VI-6.1.19 after the fourth sentence the following: "Solution will be treated with barium in batches and stored in the 10,000 gallon tank shown in Figure 1. Spraying solution will be sampled and tested for radioactive content prior to spraying on the proposed area. Solids resulting from the test operation will be returned to the basin or samples withdrawn for further development work as to ultimate disposal methods and subsequently returned to the basin."

If there is any additional detail or further information required, please let us know promptly.

Sincerely,



W. J. Shelley, Director
Regulation and Control
Nuclear Division

WJS:srj

TABLE A
INITIAL FEED COMPOSITIONS

Date	Run No	pH	Nitrates gms/l	Ammonia gms/l	Total Solids gms/l	Uranium gms/l $\times 10^{-6}$	Radium $\mu\text{Ci/ml}$ $\times 10^{-8}$	Thorium $\mu\text{Ci/ml}$ $\times 10^{-8}$
11/15/71	1	2.3	36.5			59,000	18	75
11/16/71	2	2.3	36.7			63,000	16	260
11/22/71	3	2.3				60,000		
11/23/71	4	7.5				60,000		
1/12/72	5	8.6	39	2.4	51			
2/17/72	6	8.62				340	90	1.4
2/17/72	7	8.62				340	90	1.4
2/18/72	8	2.25				54,000	140.47	59
2/24/72	9	2.25				54,000	140.47	59

DATA USED FOR TABLE I

8.0 36.93 2.4 51 60,000 140 75

TOTAL SOLIDS vs TEMPERATURE

Run No. 8

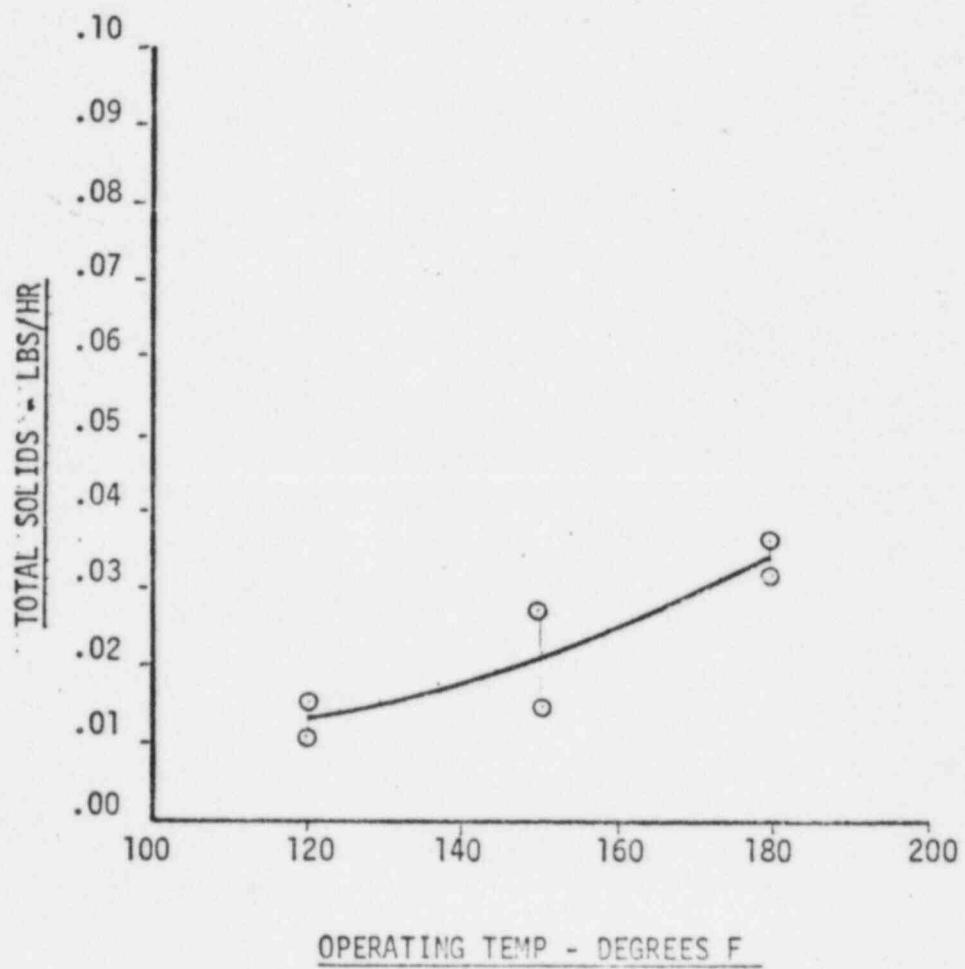


FIGURE A

TOTAL NITRATES vs TEMPERATURE

Run No. 8

⊙ BAD DATA

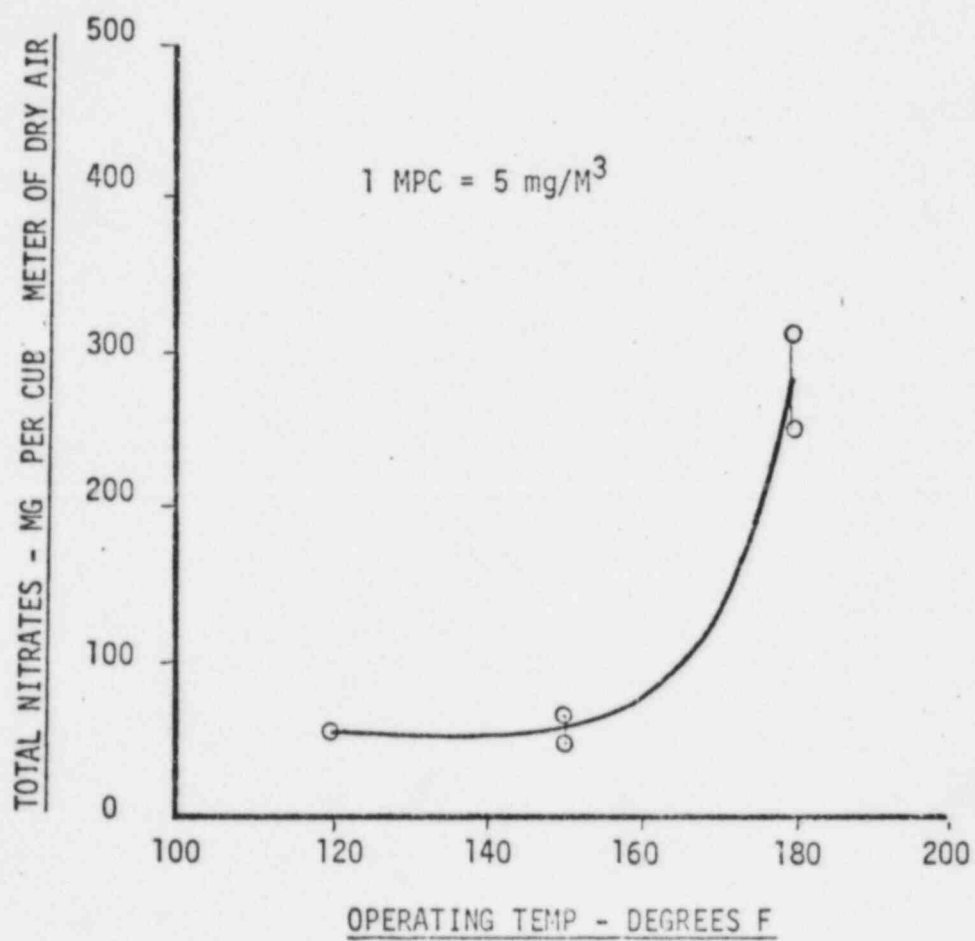


FIGURE B

RADIOMETRIC RESULTS FOR
THORIUM, URANIUM, AND RADIUM

Run No. 9

Thorium 234 1 MPC = 1×10^{-12} $\mu\text{Ci/ml}$

Uranium 238 1 MPC = 2×10^{-12} $\mu\text{Ci/ml}$

Radium 226 1 MPC = 3×10^{-12} $\mu\text{Ci/ml}$

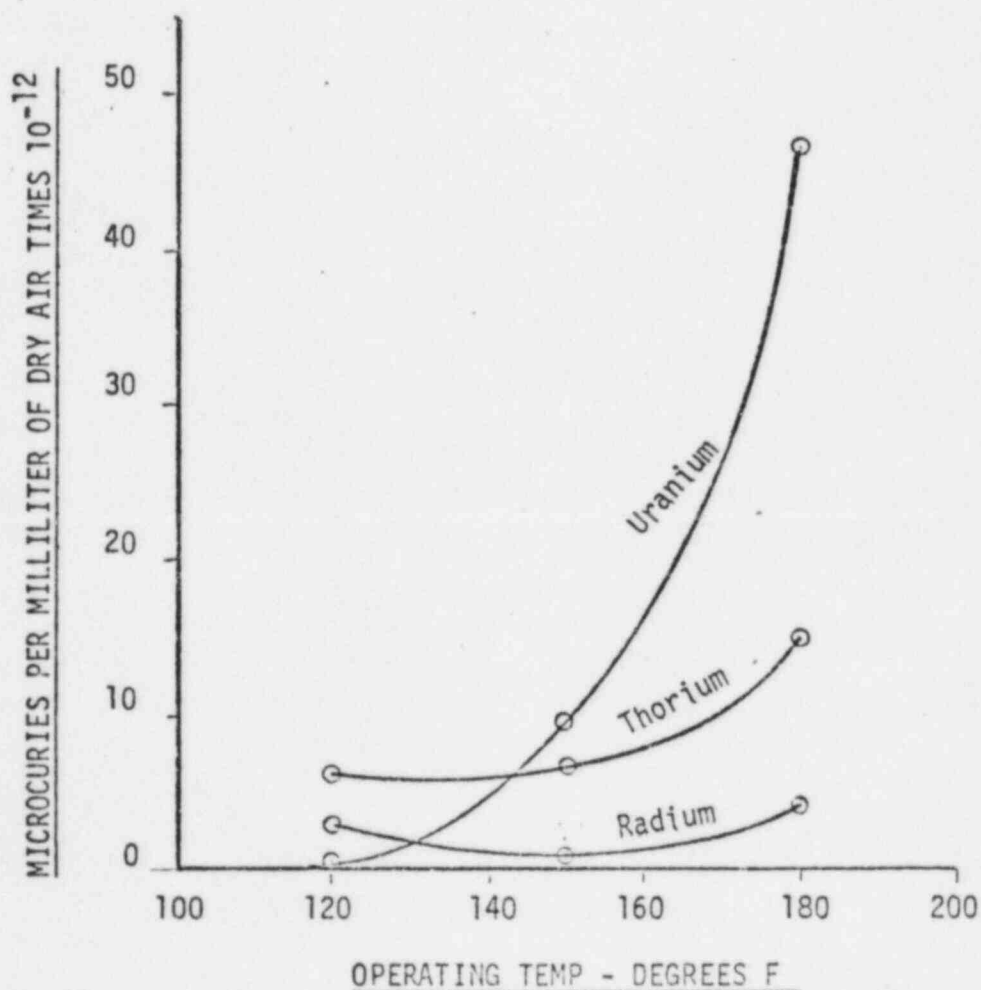


FIGURE C

FROM: Kerr-McGee Corporation Oklahoma City, Oklahoma 73102		DATE OF DOCUMENT April 4, 1973		DATE RECEIVED April 6, 1973		NO.: 2260	
TO: W. J. Shelley		LTR. X		MEMO:		REPORT:	
TO: L. E. Rouse		ORIG.:		CC:		OTHER:	
CLASSIF: U		POST OFFICE		REG. NO:		FILE CODE:	
DESCRIPTION: (Must Be Unclassified)		ACTION NECESSARY <input type="checkbox"/>		CONCURRENCE <input type="checkbox"/>		DATE ANSWERED:	
		NO ACTION NECESSARY <input type="checkbox"/>		COMMENT <input type="checkbox"/>		BY:	
		DOCKET: 40-8027					
		REFERRED TO		DATE		RECEIVED BY	
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(8-60)

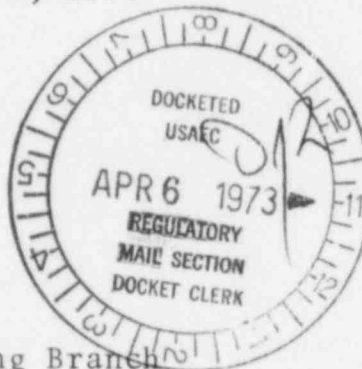
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ACKNOWLEDGED

2260

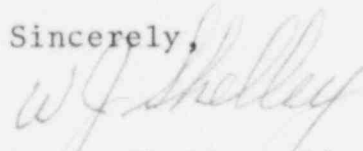
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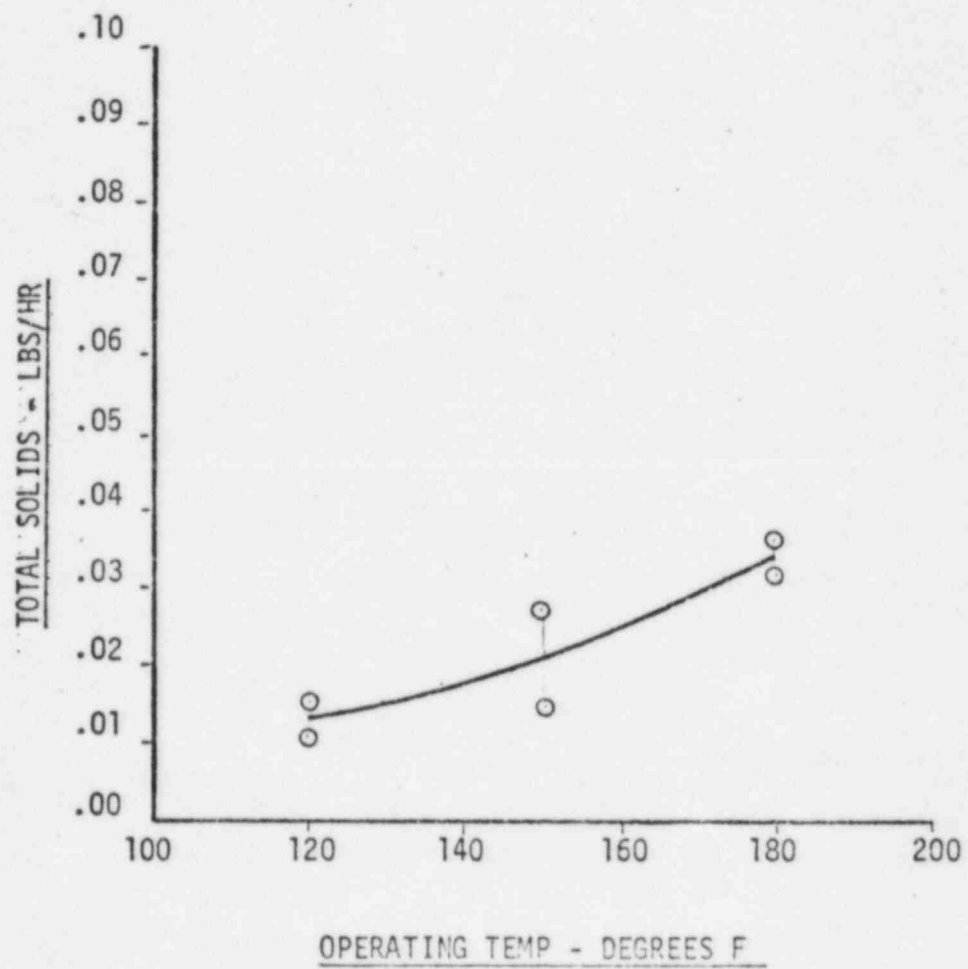


FIGURE A

TOTAL NITRATES VS TEMPERATURE

Run No. 8

○ BAD DATA

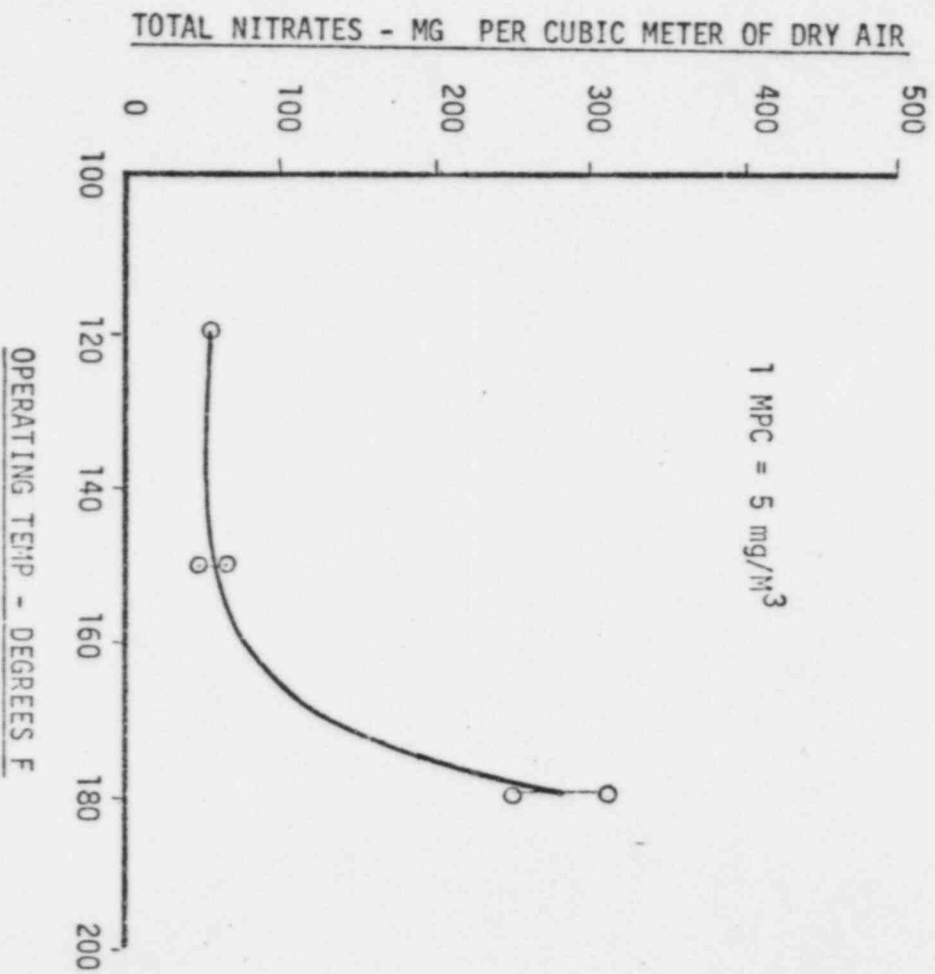


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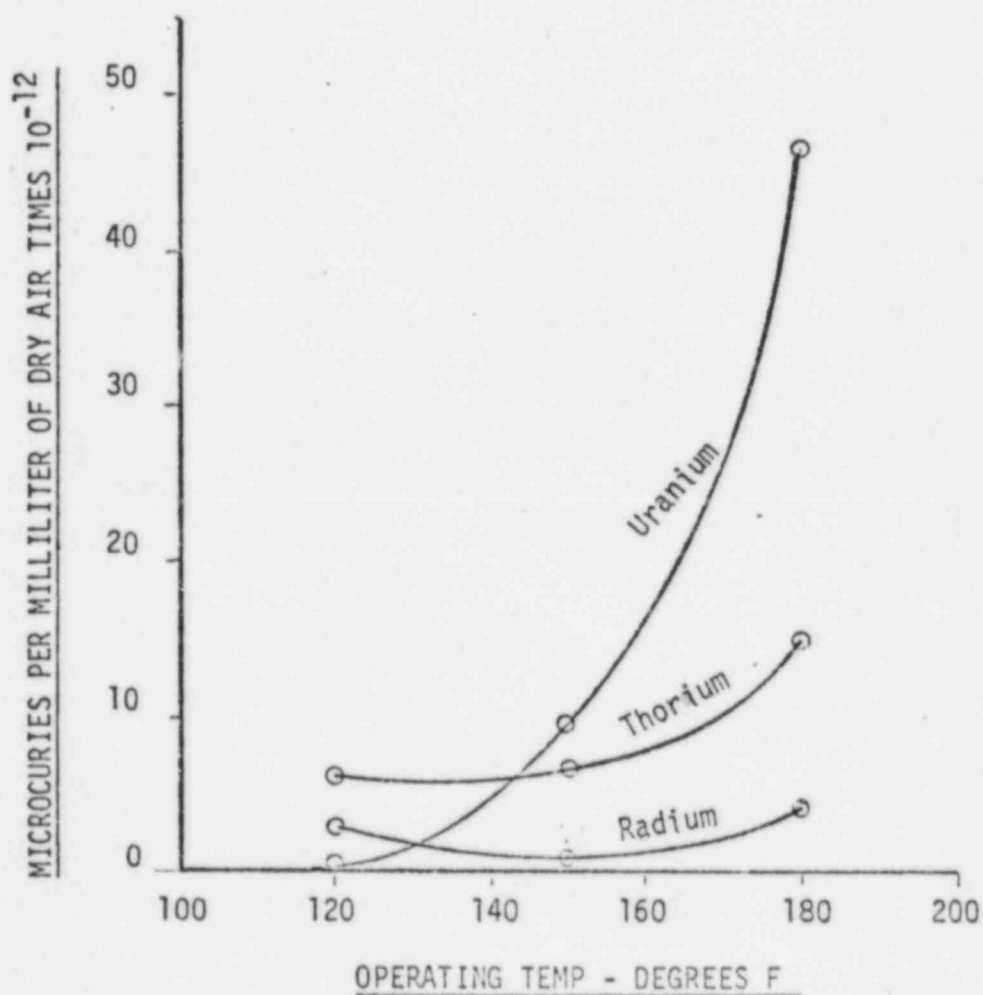


FIGURE C