

ALUMINUM COMPANY OF AMERICA

1000 HARVARD AVENUE
CLEVELAND, OHIO 44105



1992 February 24

Ken Lambert
U.S. Nuclear Regulatory Commission
Region III
799 Roosevelt Rd.
Glen Ellyn, IL 60137

Dear Mr. Lambert:

In an attempt to further characterize and ascertain the possible extent of radiological contamination in Building 65 we secured the services of Remcor Inc. to perform a survey of all HVAC systems in the building. I have enclosed the results in Table I and would greatly appreciate if you could review the results and get back to me by February 28, 1992 with your recommendations.

Could you also please let me know the disposition of the clearance survey completed by Oak Ridge Associates in November 1991. We at Alcoa are very anxious to have the radiation issue put to rest with an unconditional release of our property.

Please feel free to contact me at (216) 641-4366 if you have any questions.

Sincerely,

Mark A. Gradert
Senior Environmental Specialist

MAG/ss

cc: M. L. Bowers - Alcoa, Cleveland Works
R. G. Taylor - Alcoa, Cleveland Works

Ref: Bldg65.mag

FEB 28 1992

TABLE I

BUILDING 65 RADIATION SURVEY					
SAMPLE ID	NET DPM/100cm ²	Th-232 pCi/g	U-238 pCi/g	Th-232 dpm	U-238 dmp
	1000 Th/5000 U	(10)	(35)	(200)	(1000)
AIR CONDITIONER #1					
AC1-1	ND				
AIR CONDITIONER #2					
AC2-1	ND				
AC2-2	1,842				
EXHAUST #1					
S-11	1,320	3.4	70	7.48	154
EXHAUST #2					
S-3	2,640	4	58	8.8	127.60
EXHAUST #3					
EX3-1	2,450				
EX3-2	3,730				
EX3-3	2,300				
EX3-4	6,300				
EX3-5	10,300	14	145	30.8	319
EX3-6	7,500				
EX3-7	4,000				
EX3-8	4,500	<24	137	<52.8	301.4
EX3-9	2,600				
EX3-10	ND				
EX3-11	9,600				
EX3-12	16,000	24	309	52.80	679.8
EX3-13	8,500				
EX3-14	7,300				
EX3-15	8,500				
EX3-16	9,800				
EX3-17	6,900	13	190	28.6	418

BUILDING 65 RADIATION SURVEY

SAMPLE ID	NET DPM/100cm ²	Th-232 pCi/g	U-238 pCi/g	Th-232 dpm	U-238 dmp
	1000 Th/5000 U	(10)	(35)	(200)	(1000)
EX3-18	2,800				
EX3-19	9,600	<29	271	63.8	596.2
EX3-20	3,700				
EX3-21	2,600				
EX3-22	11,500	<18	185	39.6	407
EX3-23	11,400				
S-7	6,600	71	184	156.2	404.8
EXHAUST #4					
EX-1	4,952				
EX-2	4,008				
EX-3	9,487				
EX-4	2,430				
EX-5	4,008				
EX-6	2,987				
EX-7	743				
EX-8	ND				
EX-9	12,149				
S-16A	3,300				
S-4	5,280	19	96	41.8	211.2
EXHAUST #5					
EX5-1	139				
EXHAUST #6					
EX6-1	ND				
EXHAUST #7					
S-9	5,943	1.4	19	3.08	41.80
EX7-1	1,320	0	71	0	156.2
EX7-2	1,671				
EX7-3	2,863				

BUILDING 65 RADIATION SURVEY

SAMPLE ID	NET DPM/100cm ²	Th-232 pCi/g	U-238 pCi/g	Th-232 dpm	U-238 dmp
	1000 Th/5000 U	(10)	(35)	(200)	(1000)
EX7-4	2,244				
EX7-5	1,439				
EXHAUST #8					
EX8-1	1,223				
EX8-2	0				
EX8-3	480				
EX8-4	ND				
EXHAUST #9					
EX9-1	ND				
EX9-2	124				
EXHAUST U #1					
EU-1	155	--			
EU-2	1,207	--			
EXHAUST U #2					
EU2-1	108				
EU2-2	1,625	1.6	14	3.52	30.80
S-10	1,320				
EU2-3	0				
EXHAUST U #4					
S-17	0				
EXHAUST U #5					
EU5-1	1,439				
EU5-2	ND				
EXHAUST U #7					
EU7-1	3,560	1	24	2.2	52.80
SUPPLY #1					
S1-1	3,018				
S1-2	1,470				

BUILDING 65 RADIATION SURVEY

SAMPLE ID	NET DPM/100cm ²	Th-232 pCi/g	U-238 pCi/g	Th-232 dpm	U-238 dmp
	1000 Th/5000 U	(10)	(35)	(200)	(1000)
S1-3	1,145				
S1-4	1,393	0	24	0	52.80
S1-5	542				
S1-6	712				
S1-7	526				
S1-8	681				
S1-9	727				
S1-10	851				
S1-11	1,625				
S1-12	2,640				
S1-13	ND				
S1-14	124				
S1-15	2,646				
S1-16	310				
S1-17	836				
S1-18	511				
S1-19	480				
S1-20	2,182				
S1-21	7,026	0	62	0	136.40
SUPPLY #2					
S2-1	402				
S2-2	2,012	2.8	110	6.16	242
S-6	5,940				
SUPPLY #3					
S3-1	3,157	7.1	41	15.62	90.2
S-8	4,950				
SUPPLY #4					
S4-1	743				

BUILDING 65 RADIATION SURVEY

SAMPLE ID	NET DPM/100cm ²	Th-232 pCi/g	U-238 pCi/g	Th-232 dpm	U-238 dmp
	1000 Th/5000 U	(10)	(35)	(200)	(1000)
S4-2	1,888				
S4-3	2,182				
S4-4	2,554				
S4-5	2,058				
S4-6	9,905	4.3	118	9.46	259.6
S-16	ND				
S-1	10,000	0	72	0	158.4
SUPPLY #5					
S5-1	12,273	0.7	121	1.54	266.2
S5-2	1,965				
S5-3	2,290				
S5-4	279				
S5-5	ND				
S-15	ND				
S-2	600	1	174	2.2	382.8
SUPPLY #6					
S6-1	248				
S-2	6,593				
S-5	8,580	7	76	15.4	167.2

Ref: 65Radtn.mag/ss

1992 February 18

TABLE 1
ALCOA - CLEVELAND WORKS
BUILDING 65 RADIOLOGICAL SURVEY
SUMMARY OF DATA FROM VENTILATION SYSTEM

PAGE 1 OF 6

SAMPLE ID	NET DPM/ 100CM2	¹⁰⁰⁰ (200) Th-232 (pCi/g)	⁵⁰⁰⁰ (1000) U-238 (pCi/g)	BULK SAMPLE ID	LOCATION	APPROXIMATE AREA (M ²) (1)	% REP. OF AREA (2)
<u>ZONE A - WEST SIDE OF BUILDING 65</u>							
<u>SUPPLY #1</u>							
S1-1	3018				PFD (3)	1	75
S1-2	1470				PFD	1	75
S1-3	1145				PFD	1	75
S1-4	1393	0	24	S1-1A	PFD	1	75
S1-5	542		(52.8)		PFD	1	75
S1-6	712				PFD	1	75
S1-7	526				PFD	1	75
S1-8	681				PFD	1	75
S1-9	727				PFD	1	75
S1-10	851				PFD	1	75
S1-11	1625				PFD	1	75
S1-12	696				PFD	1	75
S1-13	ND (4)				PFD	1	75
S1-14	124				PFD	1	75
S1-15	2646				PFD	1	75
S1-16	310				PFD	1	75
S1-17	836				PFD	1	75
S-13	ND				PFD	1	75
S1-18	511				PFD	1	80
S1-19	480				PRE F D (5)	3	80
S-12	2640				FAN HOUS. (6)	3	80
S1-20	2182				FAN HOUS.	3	80
S1-21	7026	0	62	S1-21	FAN BLADE	3	80
AREA SURVEYED						32	
TOTAL AREA			(36.4)			544	
<u>EXHAUST #1</u>							
S-11	1320	3.4	70	#10	FAN HOUS.	3	80
AREA SURVEYED			(15.4)			3	
TOTAL AREA						63	
Th-232 SUM DIFF. (8) =	61						
U-238 SUM DIFF. =	1259						
<u>EXHAUST UNKNOWN #1</u>							
EU1-1	155				PRE FD	1	50
EU1-2	1207				DAMPER	1	5
AREA SURVEYED						2	
TOTAL AREA						11	

SEE NOTES AT END OF TABLE

TABLE 1
(CONTINUED)

PAGE 2 OF 6

SAMPLE ID	DPM/ 100CM ²	Th-232 (pCi/g)	U-238 (pCi/g)	BULK SAMPLE ID	LOCATION	APPROXIMATE AREA (M ²) (1)	% REP. OF AREA (2)
<u>EXHAUST UNKNOWN #2</u>							
EU2-1	108				PRE FD	1	50
EU2-2	1625	1.6	14	EU2-2	FAN HOUS.	1	90
S-10	1320				FAN HOUS.	1	
EU2-3	0				PFD	1	75
AREA SURVEYED						4	
TOTAL AREA						37	
Th-232 SUM DIFF. =	167						
U-238 SUM DIFF. =	1458						
<u>EXHAUST #7</u>							
EX7-1	5943	1.4	19	EX7-1	FAN HOUS.	1	90
S-9	1320	0	71	#9	FAN HOUS.	1	90
EX7-2	1671		(156.2)		PRE FD	0.5	80
EX7-3	2863				PRE FD	0.5	80
EX7-4	2244				PRE FD	0.5	50
EX7-5	1439				PRE FD	0.5	50
AREA SURVEYED						3	
TOTAL AREA						33	
Th-232 SUM DIFF. =	408	(USING EX7-1 DATA)					
U-238 SUM DIFF. =	5535						
<u>ZONE B - MIDDLE OF BLDG 65</u>							
<u>SUPPLY #3</u>							
S3-1	3157	7.1	41	S3-1	FAN BLADE	3	80
S-8	4950		(90.2)		FAN HOUS.	3	80
AREA SURVEYED						6	
TOTAL AREA						67	
Th-232 SUM DIFF. =	731	(USING S-8 DIRECT AND S3-1 BULK DATA)					
U-238 SUM DIFF. =	4219						
<u>SUPPLY #2</u>							
S2-1	402				FAN BLADE	3	80
S2-2	2012	2.8	110	S2-2	FAN HOUS.	9	90
S-6	5940		(242)		FAN HOUS.	9	90
AREA SURVEYED						21	
TOTAL AREA						67	
Th-232 SUM DIFF. =	147	(USING S-6 DIRECT AND S2-2 BULK DATA)					
U-238 SUM DIFF. =	5793						

SEE NOTES AT END OF TABLE

TABLE 1
(CONTINUED)

SAMPLE ID	DPM/ 100CM ²	Th-232 (pCi/g)	U-238 (pCi/g)	BULK SAMPLE ID	LOCATION	APPROXIMATE AREA (M ²) (1)	% REP. OF AREA (2)
<u>EXHAUST #9</u>							
EX9-1	ND				PFD	0.5	80
EX9-2	124				PRE FD	0.5	80
AREA SURVEYED						1	
TOTAL AREA						9	
<u>EXHAUST #8</u>							
EX8-1	1223				PRE FD	2	50
EX8-2	0				PFD	2	80
EX8-3	480				PRE FD	1	50
EX8-4	ND				PRE FD	1	60
AREA SURVEYED						6	
TOTAL AREA						32	
<u>EXHAUST UNKNOWN #4</u>							
S-17	0				PRE FD	0.5	90
AREA SURVEYED						0.5	
TOTAL AREA						5.6	
<u>EXHAUST UNKNOWN #5</u>							
EU5-1	1439				FAN BLADE	0.5	80
EU5-2	ND				PRE FD	1	80
AREA SURVEYED						1.5	
TOTAL AREA						4.4	
<u>SUPPLY #6</u>							
S6-1	248				PFD	1	90
S6-2	6593				FAN HOUS.	3	80
S-5	8580	7	76	#7	FAN HOUS.	3	80
AREA SURVEYED						7	
TOTAL AREA						13	
Th-232 SUM DIFF. =	724						
U-238 SUM DIFF. =	7856						

SEE NOTES AT END OF TABLE

TABLE 1
(CONTINUED)

PAGE 4 OF 6

SAMPLE ID	DPM/ 100CM2	Th-232 (pCi/g)	U-238 (pCi/g)	BULK SAMPLE ID	LOCATION	APPROXIMATE AREA (M ²) (1)	% REP. OF AREA (2)
<u>EXHAUST #3</u>							
EX3-1	2450				PFD	1	80
EX3-2	3730				PFD		80
EX3-3	2300				PFD		80
EX3-4	6300				PFD		80
EX3-5	10300	14	145	E3-B4	PFD		80
EX3-6	7500	(319)			PFD		80
EX3-7	4000				PFD		80
EX3-8	4500	<24	137	E3-B3	PFD		80
EX3-9	2600	(301)			PFD	1	80
EX3-10	ND				PFD	1	80
EX3-11	9600				PFD	1	80
EX3-12	16000	24	309	E3-B6	PFD	1	80
EX3-13	8500	(679)			PFD	1	80
EX3-14	7300				PFD	1	80
EX3-15	8500				PFD	1	80
EX3-16	9800	13	190	E3-B5	PFD	1	80
EX3-17	6900	(418)			PFD	1	80
EX3-18	2800				PFD	1	80
EX3-19	9600	<29	271	E3-B1	PFD	1	80
EX3-20	3700		596		PFD	1	80
EX3-21	2600				PFD	1	80
EX3-22	11500	<18	185	E3-B2	PFD	1	80
EX3-23	11400	(407)			PFD	1	80
S-7	6600	71	184	#8	FAN HOUS.	3	80
AREA SURVEYED			(404)			26	
TOTAL AREA						150	
<u>ZONE C - EAST SIDE OF BLDG 65</u>							
<u>EXHAUST #2</u>							
S-3	2640	4	58	#5	FAN HOUS.	3	30
AREA SURVEYED						3	
TOTAL AREA						76	
Th-232 SUM DIFF. =	170						
U-238 SUM DIFF. =	2470						

SEE NOTES AT END OF TABLE

TABLE 1
(CONTINUED)

PAGE 5 OF 6

SAMPLE ID	DPM/ 100CM2	Th-232 (pCi/g)	U-238 (pCi/g)	BULK SAMPLE ID	LOCATION	APPROXIMATE AREA (M ²) (1)	% REP. OF AREA (2)
<u>EXHAUST #4</u>							
EX4-1	4952				PRE FD	1	50
EX4-2	4008				PRE FD	1	80
EX4-3	9487				PRE FD	0.5	30
EX4-4	2430				PRE FD	1	90
EX4-5	4008				FAN HOUS.	4	50
EX4-6	2987				PFD	2	40
EX4-7	743				PRE FD	1	80
EX4-8	ND				PRE FD	1	80
EX4-9	12149				PRE FD	2	90
S-16A	3300				PRE FD	0.5	90
S-4	5280	19	96	#6	FAN HOUS.	4	50
AREA SURVEYED			(211)			18	
TOTAL AREA						175	
Th-232 SUM DIFF. =	2007	(USING EX4-9 DIRECT AND S-4 BULK DATA)					
U-238 SUM DIFF. =	10142						
<u>SUPPLY #4</u>							
S4-1	743				PFD	2	75
S4-2	1888				PFD	1	60
S4-3	2182				PFD	2	90
S4-4	2554				PFD	0.5	90
S4-5	2058				PFD	2	90
S-16	ND				PFD	1	80
S4-6	9905	4.3	118	S4-6	FAN HOUS.	3	80
S-1	10000	0	72	S4-B1	FAN HOUS.	3	80
AREA SURVEYED						14.5	
TOTAL AREA						238	
Th-232 SUM DIFF. =	348	(USING S4-6 DATA)					
U-238 SUM DIFF. =	9557						
<u>SUPPLY #5</u>							
S5-1	12273	0.7	121	S5-1	FAN HOUS.	5	90
S5-2	1965		(266)		PFD	1	80
S5-3	2290				PFD	1	80
S5-4	279				PFD	1	80
S5-5	ND				PFD	2	80
S-15	ND		(382)		PFD		
S-2	6000	1	174	S5-B1	FAN HOUS.	5	90
AREA SURVEYED						10	
TOTAL AREA						220	
Th-232 SUM DIFF. =	71	(USING S5-1 DATA)					
U-238 SUM DIFF. =	12202						

SEE NOTES AT END OF TABLE

$$\frac{800}{1000} + \frac{4100}{5000} \geq 1$$

TABLE 1
(CONTINUED)

SAMPLE ID	DPM/ 100CM2	Th-232 (pCi/g)	U-238 (pCi/g)	BULK SAMPLE ID	LOCATION	APPROXIMATE AREA (M ²) (1)	% REP. OF AREA (2)
<u>EXHAUST #5</u>							
EX5-1	139				PRE FD	2	90
AREA SURVEYED						2	
TOTAL AREA						19	
<u>EXHAUST #6</u>							
EX6-1	ND				PRE FD	2	90
AREA SURVEYED						2	
TOTAL AREA						19	
<u>AIR CONDITIONER #1</u>							
AC1-1	ND				AC UNIT (9)	2	90
AREA SURVEYED						2	
TOTAL AREA						35	
<u>AIR CONDITIONER #2</u>							
AC2-1	ND				AC UNIT	2	90
AC2-2	1842				CAR (10)	1.5	5
AREA SURVEYED						3.5	
TOTAL AREA						81	
<u>EXHAUST UNIT UNKNOWN #7</u>							
EU7-1	3560	1	24	EU7-1	PRE FD	2	80
AREA SURVEYED						2	
TOTAL AREA						20	
Th-232 SUM DIFF. =	142						
U-238 SUM DIFF. =	3417						

NOTES:

- (1) AREA (M²) - AREA ACCESSIBLE TO SURVEY IN SQUARE METERS
- (2) % REP OF AREA - PERCENT OF ACCESSIBLE AREA THAT SURVEY DATA REPRESENTS
- (3) PFD - POST FAN DUCT
- (4) ND - DETECTED ACTIVITY LESS THAN NATURAL BACKGROUND
- (5) PRE FD - PRE-FAN DUCT
- (6) FAN HOUS. - FAN HOUSING INCLUDING FILTERS OF HEATERS
- (7) SD - STANDARD DEVIATION
- (8) SUM DIFF. - SUM DIFFERENCE
- (9) AC UNIT - AIR CONDITIONING UNIT
- (10) CAR - COLD AIR RETURN