

## APPENDIX E

INDUSTRIAL/ACADEMIC INSPECTION FIELD NOTES<sup>\*</sup>  
Region I

Inspection Report No. 91-001 License No. 37-07657-02  
 Licensee (name and address) Docket No. 030-06172  
Aluminum Company of America  
ALCOA Technical Center  
PO Box 2970  
ALCOA Center, PA 15069  
 Licensee Contact Mark Jackson Telephone No. (412) 377 2025  
 Last Amendment No. 45 Date of Amendment November 21, 1990  
 Priority: 5  
 Program Code(s): 3120/3123  
 Date of Last Inspection February 21, 1995  
 Date of This Inspection May 7, 1991  
 Type of Inspection: ☐ Announced ☒ Unannounced  
☒ Routine ☐ Special  
☐ Initial ☐ Reinspection  
 Next Inspection Date May, 1996 ☒ Normal ☐ Reduced ☐ Extended  
 Summary of Findings and Action:  
☒ No violations, Clear 591 or letter issued  
☐ Violations, 591 or letter issued  
☐ Action on Previous Violations

Inspector: 

(Signature)

Date 5/14/91Approved: 

(Signature)

Date 5/20/91

\* All areas indicated in field notes are not required to be addressed during each inspection.

## 1. ORGANIZATION

a. Briefly describe the organizational structure:

Jeff Shockey, Mgr. Safety / Environmental Health

Mark Jackson, RSO (works for Shockey) - full range of safety responsibilities

b. Organizational structure meets license requirements. [L/C]

(☒) Y ( ) N

Remarks. Shockey just transferred in from ALCOA plant in Texas, worked on RSM license in Texas, licensee believes that a request to add him to this license has been submitted - check + advise

c. Licensee is required to have a Radiation Safety Committee

( ) Y (☒) N

(1) If so, does RSC fulfill license requirements [L/C]

( ) Y ( ) N

(2) Records maintained

( ) Y ( ) N

Remarks.

d. Radiation Safety Officer

(1) Authorized on license [L/C]

(☒) Y ( ) N

(2) Fulfills duties as RSO

(☒) Y ( ) N

Remarks. Jackson seems to have more than adequate support from Management in performing duties as RSO.

## 2. INSPECTION HISTORY

( ) N/A - Initial inspection

a. Last inspection conducted on February 21, 1985

NAY JOUR 4/9/85

b. Violations or deviations were identified

(☒) Y ( ) N

c. Response letter or 591 dated May 10, 1985

d. Violations from Previous Inspection

Requirement	Violation	Corrective Action Taken (Y/N)	Status
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* 10 CFR 30.4(k)	failed to verify license authorization	yes	Closed
	passed to transfer of RSM		

e. Any previous violations not corrected

( ) Y ( ) N

\* Explain. I believe that the original issue was confused by NRC / License communications. I rechecked, problem now closed

### 3. SCOPE OF PROGRAM

a. License has multiple authorized locations of use ( ) Y ( ) N

b. If so, list location(s) inspected

( ) N/A

Inspector ALCOA ~~Research~~ <sup>Research</sup> Center in ALCOA Center. ALCOA Research Laboratory in New Kensington, PA ~~has~~ <sup>has</sup> license on license however no license material located there (per RSO) RSO says that

c. List those individuals contacted during inspection

\* Jeff Shockey Jim Szalowski, Jim Alcorn,

New Kensington is a

\* Mark Jackson Jon Peace, Joe Gibbs (ALL

DOE cleanup project

Researcher/Technicians)

from WWII days

\*Indicates presence at exit meeting

d. Briefly describe scope, including types of use involving byproduct material, frequency of use, staff size, etc.

Vast majority of license's national safety program covers N60 X-Ray tubes. Otherwise license has (4) Ni-63 source foils in GC/ECDs, (1) 200 mCi H-3 foil (storage), (1) 900 µCi Pu-147 source/gauge in storage, (1) 300 mCi SR-90 source in use, (1) 150 mCi Am-241 source in use. The SR-90 + Am-241 are used for determining aluminum plastic coating thickness / for beer can research.

### 4. INTERNAL AUDITS OR INSPECTIONS

a. Audits are required by license condition

( ) Y ( ) N

b. Audits or inspections are conducted

( ) Y ( ) N

(1) Audits conducted by RSO

(2) Frequency monthly

c. Records maintained.

( ) Y ( ) N

Remarks. Accuracy (ABB) performed leak tests + maintenance on SR-90 source. ~~Also~~ <sup>Also</sup> NDC on Td also leak tests of

Am-241 (NDC also maintained). NDC evaluates leak tests of ECDs which are wiped by researcher. RSO Auditor "frequently"

(conclusion monthly) spends a lot of time in labs + interacting with researcher

Haig Sakajian,  
owner of license  
at authorized  
user, later for  
Tennessee  
Operations 11/90.

no generally  
licensee  
device.

5. TRAINING, RETRAINING, AND INSTRUCTIONS TO WORKERS

a. Instructions to workers per [10 CFR 19.12] ☒ Y ( ) N

Remarks. Workers provided with copy of ALCOA's "Tooling Radiation Control Program. Currently budgeted to develop training program in-house. Licensee looking for consultant

b. Training program required [L/C] ( ) Y ☒ N

(1) If so, briefly describe training program:

Authorized users must be licensed from education / experience - Supervisor etc. - Actual recorder years of experience / etc

(2) Training program implemented ( ) Y ( ) N  
(3) Retraining program required ( ) Y ( ) N  
(4) Retraining program implemented ( ) Y ( ) N  
(5) Records maintained ( ) Y ( ) N

Remarks.

Manufacturers of equipment provide hands on instruction

6. FACILITIES AND EQUIPMENT

a. Facilities as described in license application [L/C] ☒ Y ( ) N

Remarks. SR-90 gauge fitted with plexiglas shield and shutter interlock system

b. Areas for storage and use of RAM

(1) Adequate method used to prevent an unauthorized individual from entering restricted area ☒ Y ( ) N  
All doors locked  
(2) RAM is secured to prevent unauthorized removal from an unrestricted area [20.207] ☒ Y ( ) N

Remarks.

c. Survey instruments ( ) N/A

(1) Appropriate operable survey instruments possessed *Texas Nuclear 2650 EWGM* ☒ Y ( ) N

(2) Calibration performed as required ☒ Y ( ) N

Annually by Applied HP. monthly performance check with *Calibration check source*

(3) Records maintained

(✓) Y ( ) N

Remarks.

7. RADIOLOGICAL PROTECTION PROCEDURES

- a. Radioactive materials used in accordance with current procedures [L/C]  
b. Individuals understanding of current procedures is adequate [L/C]

(✓) Y ( ) N

- (1) in general rules for safe use of RAM  
(2) in emergency procedures

(✓) Y ( ) N

(✓) Y ( ) N

Remarks. Only problem ever uncovered (per RSO) was with an x-ray tube where the researcher broke leaded glass shield & replaced with regular glass - RSO caught due to elevator doorway nearby (100% in 1 month).

8. MATERIALS

- a. Isotope, chemical form, quantity and use as authorized [L/C]

(✓) Y ( ) N

Remarks. See Attached Inventory

b. Leak tests and Inventory

- (1) Leak tests of sealed sources performed as required [L/C] All 6 months (except H-3)  
(2) Inventory of RAM performed as required [L/C]  
(3) Records maintained

(✓) Y ( ) N

(✓) Y ( ) N

(✓) Y ( ) N

Remarks. ABB leak tests SR-90  
NDC leak tests news data

9. RECEIPT AND TRANSFER OF RADIOACTIVE MATERIAL

- a. Describe how packages are received and by whom: ( ) N/A  
*All receipts done by manufacturer in conjunction with installation*
- b. Opening procedures established and followed [20.205(d)] ( ) Y ( ) N
- c. Incoming packages wiped per [20.205(b)] ( ) Y ( ) N
- d. Incoming packages surveyed per [20.205(c)] ( ) Y ( ) N
- e. Transfer(s) performed per [30.41] (X) Y ( ) N
- f. Records of surveys and receipt/transfer maintained per [20.401(b) and 30.51] (X) Y ( ) N

Remarks. *received (2) x 500 mCi Pu-147  
 source to manufacturer (7 of 80)  
 8/90*

10. AREA SURVEYS

( ) N/A

Briefly describe area survey requirements and licensee's implementation [L/C]:

*SR-90 gauge only present — licensee has removed area taped on floor 6' from source having — say this is (2) NR line without Plexiglas shield. Inspection could measure a maximum 1 mR/hr at closest contact with gauge with shutter open*

11. PERSONNEL RADIATION PROTECTION - EXTERNAL (Not required by license)

- a. Film or TLD supplier Landauer Frequency monthly
- b. Supplier is NVLAP - approved (X) Y ( ) N
- c. Reports reviewed by RSO Frequency monthly
- d. NRC inspector reviewed personnel monitoring records for period 1985 to present
- e. NRC forms or equivalent

(1) NRC-4: ( ) Y ( ) N  
 (2) NRC-5: ( ) Y ( ) N  
 [20.401(a)]

Complete: ( ) Y ( ) N ( ) N/A  
 Complete: ( ) Y ( ) N ( ) N/A

NI  
 NI

- f. List maximum exposures (millirem):  
*100 mR — x Ray use  
 10 mR — Bq use*

Remarks.

12. PERSONNEL RADIATION PROTECTION - INTERNAL

☒ N/A

- a. Potential for exposure of individuals to airborne RAM exists ☐ Y ☐ N
- b. Monitoring for airborne radioactivity conducted [20.201(b) to meet 20.103] ☐ Y ☐ N
- c. Records maintained [20.401 and L/C] ☐ Y ☐ N
- d. Briefly describe licensee's monitoring system for airborne radioactivity [L/C]

- e. Bioassay program implemented as described in correspondence with NRC ☐ Y ☐ N

Remarks.

13. RADIOACTIVE EFFLUENT AND WASTE DISPOSAL

NA

- a. RAM in effluents to unrestricted areas ☐ Y ☒ N
- b. Release in accordance with regulatory limits [20.106(a)] ☐ Y ☐ N

Remarks.

- c. Describe waste disposal method(s) - solid and liquid:

*(Return source/ deliver to manufacturer)*

- d. If LLW is stored because access to a burial site has been denied, answer (1), (2), and (3) below:
- (1) Adequate control of waste in storage is maintained ☐ Y ☐ N
  - (2) Package is labeled and package integrity is adequately maintained ☐ Y ☐ N
  - (3) Adequate records of surveys and material accountability are maintained ☐ Y ☐ N
- e. Disposal of waste in accordance with regulatory requirements [20.301] ☐ Y ☐ N
- f. Records maintained [20.401(b)] ☐ Y ☐ N

Remarks.

#### 14. NOTIFICATION AND REPORTS

- a. Licensee in compliance with [19.13] (reports to individuals) ☒ Y ☐ N ☐ N/A
- b. Licensee in compliance with [20.402] (theft or loss) ☐ Y ☐ N ☒ None
- c. Licensee in compliance with [20.403] (incidents) ☐ Y ☐ N ☒ None
- d. Licensee in compliance with [20.405] (overexposures) ☐ Y ☐ N ☒ None

Remarks.

#### 15. POSTING AND LABELING

- a. NRC-3 "Notice to Workers" is posted [19.11] ☒ Y ☐ N
- b. Parts 19 and 20 and license are posted or a notice indicating where documents can be examined is posted [19.11] ☒ Y ☐ N
- c. Other posting and labeling per [20.203] ☒ Y ☐ N

Remarks.



16. ENVIRONMENTAL MONITORING PROGRAM

- a. Licensee has implemented an environmental monitoring program [L/C]  
b. Records maintained

( ) Y ( ) N  
( ) Y ( ) N

Remarks.

*NON-MONITORING*

- c. Briefly describe the licensee's environmental monitoring program:

17. TRANSPORTATION (10 CFR 71.5(a) and 49 CFR 171-189)

- a. Licensee makes shipments of RAM

(✓) Y ( ) N

- b. Shipments are:

*Approx 2x500 mC Pu-147 gages*

- (✓) delivered to common carriers  
( ) transported in licensee's own private vehicle  
( ) both  
( ) no shipments since last inspection

Remarks.

*Shipments Arranged by Top Beam (manufacturer) - Top Beam  
did packaging (wooden crate) etc. - licensee to mark*

Complete only if shipments made since last inspection:

- c. Shipments

- (1) Authorized packages used  
[173.415,416]

(✓) Y ( ) N ( ) N/A

- (2) Package type used wooden crate

- (3) For DOT-7A packages, performance  
test record on file [173.415(a)]

( ) Y ( ) N ( ) N/A

- |  |                      |
|--|----------------------|
| (4) For DOT-55 packages, use is approved by NRC [173.416(a)]               | ( ) Y ( ) N ( ) N/A  |
| (5) Other Type B packages used are approved [173.416(a)]                   | ( ) Y ( ) N ( ) N/A  |
| (6) Licensee has COCs on file with NRC [71.12(c)(1)]                       | ( ) Y ( ) N ( ) N/A  |
| (7) Licensee has a QA program approved by NRC [71.12(b)]                   | ( ) Y ( ) N ( ) N/A  |
| (8) For special form sources, performance test record on file [173.476(a)] | ( ) Y ( ) N ( ) N/A  |
| (9) Packages properly labeled [172.403, 173.441]                           | ( ) Y ( ) N ( ) N/A  |
| (10) Packages properly marked [173.200]                                    | ( ) Y ( ) N ( ) N/A  |
| (11) Proper shipping papers prepared and used [172.200-204]                | ( ) Y ( ) N ( ) N/A  |
| (12) Shipping papers readily accessible during transport [177.817(e)]      | ( ) Y ( ) N ( ) N/A  |
| (13) Vehicles placarded as necessary [172.500, 504]                        | ( ) Y ( ) N ( ) N/A  |
| (14) Cargo blocked and braced [177.842(d)]                                 | ( ) Y ( ) N ( ) N/A  |
| (15) Any incidents reported to DOT [171.15-16]                             | ( ) Y ( ) N ( ) None |

Remarks.

NI

- |   |             |
|---|-------------|
| 18. <u>RECORDKEEPING FOR DECOMMISSIONING</u>  | ( ) N/A     |
| a. Records of information important to the safe and effective decommissioning of the facility maintained in an independent and identifiable location until license termination [30.35(g)] | ( ) Y ( ) N |
| b. Records include all information outlined in [30.35(g)]   | ( ) Y ( ) N |

Remarks.

19. INDEPENDENT MEASUREMENTS

- a. Survey instrument used Landolt 142
- b. NRC Serial No. 9661
- c. Last date of calibration 1/91
- d. Inspector's measurements were compared to licensee's ☐ Y ☒ N
- e. Describe the type and results of measurements:

maximum contact ready (thick plastic shield),  
shutter open, SR-90 source 1 mR/hr

20. BULLETINS AND INFORMATION NOTICES

NI

- a. Bulletins, Information Notices, etc., received by the licensee ☐ Y ☐ N
- b. Licensee took appropriate action in response to Bulletins, INs, etc. ☐ Y ☐ N

Remarks.

21. CONTINUATION OF REPORT ITEMS - USE BACK OF PAGE IF NECESSARY

22. LIST OF VIOLATIONS

23. PERFORMANCE EVALUATION FACTORS

Licensee \_\_\_\_\_  
(name & \_\_\_\_\_  
location) \_\_\_\_\_

Inspector \_\_\_\_\_  
Inspection Date \_\_\_\_\_

- a. Lack of senior management involvement with the radiation safety program and/or Radiation Safety Officer (RSO) oversight ( ) Y ( ) N
- b. RSO too busy with other assignments ( ) Y ( ) N
- c. Insufficient staffing ( ) Y ( ) N
- d. Radiation Safety Committee fails to meet or functions inadequately ( ) Y ( ) N ( ) N/A
- e. Inadequate consulting services or inadequate audits ( ) Y ( ) N ( ) N/A

Remarks (consider above assessment and/or other pertinent PEFs):

Regional follow-up on above PEFs citations:

## RADINV.XLS

	A	B	C	D	E
1	NUCLEAR UNIT ID NO	TYPE OF EQUIP	DESCRIPTION OF EQUIP	DATE INSTALLED	LOCATION IN PLANT
2	ATC-003	ANALYTICAL	G.C.-E.C.D.	1981	C-3214
3	ATC-004	ANALYTICAL	G.C.-E.C.D.	1981	C-3214
4	ATC-005	ANALYTICAL	PORTABLE G.C.	1979	C-2243
5	ATC-27	ANALYTICAL	G.C.-E.C.D.	1983	C-2216
6	ATC-34	ANALYTICAL	G.C.-E.C.D.	1987	C-2214
7	ATC-35	ANALYTICAL	THICKNESS GAUGE	1988	C-3247
8	ATC-36	ANALYTICAL	THICKNESS GAUGE	1990	C-0142
9	ATC-37	ANALYTICAL	DENSITY	1988	C-BASEMENT

RADINV.XLS

	F	G	H	I	J
1	DIVISION	RADIOISOTOPE	QUANTITY (m ci)	SOURCE MODEL NO	SOURCE SERIAL NO
2	ANCH	NI-63	15	1880360520	C-1937
3	ANCH	NI-63	15	1880360520	C-2188
4	ECL	H-3	200	195	51106
5	EHL	NI-63	15	204	243
6	EHL	NI-63	15	6000204	1645
7	ANCH	PM-147	0.9	17188	
8	ANCH	SR-90	300	S-18	S-504-A
9	AEPI	AM-241	150	103	1637

RADINV.XLS

	K	L	M	N
1	SOURCE HOLDER MOD NO	SOURCE HOLDER SERIAL NO	VENDOR	LEAK TEST FREQ(YRS)
2	5030-A	H	HEWLETTPACKER	0.5
3	6030-A	H	HEWLETT PACKER	0.6
4	106218		A.I.D.	NA
5	SIGMA	2000	PERKIN ELMER	0.6
6	8500 PE		PERKIN ELMER	0.5
7			FISHER TECHNOLOGY	0.6
8	U-6	984142031	COMBUSTION ENG	0.5
9	AMCPI	6071LV	NDC SYSTEMS	0.5



RADINV.XLS

	O	P
1	COMMENTS	ONSITE
2	REPLACED 1985	YES
3	REPLACED 8/13/89	YES
4		YES
5	REPLACED C-1540	YES
6		YES
7	REPLACED 8/28/90	YES
8	SHEET COATING THICK	YES
9	TAPE CASTER BETA G	YES