

APPENDIX F

COMMERCIAL IRRADIATOR INSPECTION FIELD NOTES
REGION I

Inspection Report No. 93-001

License No. 29-01022-06, 07, 10, 14

Licensee (name and address)

Docket No. 030-0524R-06989,
-09718, -29741.

Dept of The Army
U.S. Army Communication -
Electronics Command
Fort Monmouth NJ

Licensee Contact Joe Santarsiero Telephone No. _____

Last Amendment No. various Date of Amendment various

Priority : various Program Code:

Date of Last Inspection Sept 90, Sept 90, Sept 91, June 91

Date of This Inspection August 4, 5, 1993

Type of Inspection :
() Announced (x) Unannounced
(x) Routine () Special
() Initial (x) Reinspection

Next Inspection Date _____ (x) Normal () Extended () Reduced

Summary of Findings and Action:

- (x) No violations, Clear 591 or regional letter issued
- () Violations, 591 or Regional letter issued
- () Previous Violations () Action () No Action

Inspector : Sherry Arrudondo
(Signature)

Date 8/5/93

Approved : [Signature]
(Signature)

Date 8/27/93

Information in this record was deleted
in accordance with the Freedom of Information
Act, exemptions 2
FOIA- 2006-0238

HA/14

1. ORGANIZATION

a. Management Structure

- (1) Plant Manager involved in safety program? [L/C] (✓) Y () N
- (2) Plant Manager sets safety goals/objectives? [L/C] (✓) Y () N
- (3) Adequate budget and resources are provided to the safety program? (✓) Y () N
- (4) ^{RSO} Corporate management supports safety through site visits, program reviews, and site support? [L/C] (✓) Y () N

Remarks:
Steve Horne
Chief Safety Office
↓
Barry Silber
Div. Chief Rod +
Inv. Eng Division
↓
Joe Santasaro
CRSO
↓
~105 staff
(HP + env. eng)

Dr. Kronenberg is the manager at Building 9401 where the pool irradiator, 2 in air irradiators, + several colibrato sources are housed. He is intimately involved w/ the use. Before any use, he is notified. He is a scientist and is separate from Rod Saf Office.

b. Radiation Protection

- (1) Radiation protection function is separate from plant operations? [L/C] (✓) Y () N
- (2) A corporate policy exists which addresses radiation safety? [L/C] (✓) Y () N
- (3) A trained qualified RSO assigned? [L/C] (✓) Y () N
- (4) Radiation Protection procedures have been written and approved [L/C] (✓) Y () N

Remarks: Standard Op proc are posted for irradiators as well as list of approved operators.

c. Authorized users

Authorized users are qualified through training? [L/C]

() Y () N

Remarks: All operators trained and then tested. Currently 5 people authorized. Each calibration set at temp job site manned by an RPO who is qualified thru 40 hr training course.

2. LICENSEE INTERNAL AUDITS

a. Does the Radiation Safety Officer (RSO) conduct radiation safety audits? [L/C]

() Y () N

Frequency monthly

b. Does corporate management conduct audits/reviews? [L/C]

() Y () N

Frequency Army Materiel Command (AMC) parent command Weekly review Done Sept 91

c. Does the licensee conduct annual ALARA reviews? [L/C]

() Y () N

d. Are audit and review findings discussed in safety meetings? [L/C]

() Y () N

Remarks: Bringing Rad Control Committee meets quarterly. "outstanding program" Feb 92 more of a management review

-14 license: Licensee has calibration kits at locations throughout U.S. at TMDEH Test; Diagnostic Equipment Activity these locations.

3. INSPECTION HISTORY

a. Were violations, unresolved items or deviations identified in previous inspections?

() Y () N

b. Were licensee corrective actions adequate on previous inspection findings?

() Y () N N/A

Remarks:

4 Inspectors on site Report written + sent to facility. Records maintained at Evans Area.

4. TRAINING AND INSTRUCTIONS TO EMPLOYEES

a. Initial Radiation Worker/Operator Training

- (1) A formal qualification/training program has been established and implemented. [L/C] Y () N
- (2) Required tests administered, test scores satisfactory, and records retained. [L/C] Y () N
- (3) Training program is adequate for intended purpose and contains sufficient technical depth. [L/C] Y () N
- (4) Management periodically reviews training program implementation. [L/C] Y () N

Two separate tests given for irradiators. Those individual in charge of calibrator kits with sealed sources are given 40 hr RSO training by US Army Chem School

b. Retraining Program

- (1) A formal program has been established to retrain radiation workers/operators. [L/C] Y () N
- (2) Retraining records are retained and reflect adequate program implementation. [L/C] Y () N

c. General Training

- (1) Instruction to workers provided [19.12] Y () N
- (2) Instruction provided to ancillary personnel (security, custodial, maintenance, etc.) [L/C] Y () N

Remarks: *all warehousemen that may handle calibrator kits get 3 day training*

5. RADIATION PROTECTION PROCEDURES

- a. Have operating and emergency evacuating procedures been developed and implemented? [L/C] Y () N
- b. Are manufacturer's instructions for devices used and available? [L/C] Y () N *N/A*
- c. Does the licensee maintain a logbook for recording operational data? [L/C] Y () N
- d. Is access controlled to high radiation areas? [20.203(c)]
 - (1) postings Y () N
 - (2) locks/barriers Y () N
 - (3) interlocks Y () N
- e. Are interlocks checked periodically for operability? [L/C] *Wotted down* Y () N *N/A*
- f. Are interlocks designed such that it is difficult to tamper or intentionally defeat them? [L/C] Y () N
- g. Are restricted areas established, posted, and properly controlled? [20.203] Y () N
- h. Are security measures in place to control or protect materials in storage? [20.207] Y () N
- i. Is entrance key attached to hand held survey meter? [L/C] Y () N *N/A*

Remarks:

-07 license CS137 + Co60 in a maze design. Concrete door has 3 innerlocks. Also 3 RAM's: 1 in room, 1 at control panel, 1 at exhaust vent (checked gaily). All these must be in place for source to raise. Licensee successfully demonstrated innerlock checks. Co60 source is currently ~75 Ci (400 R/hr at 1m) and ∴ does not come under 10CFR 36.

-10 license Co-60 ~6000 Ci pool irradiator. Samples are lowered into pool. Sources never raised. Pool is 20 feet of water (10 feet of which is below the water table). This irradiator also does not come under 10CFR 36 bec < 500 rad/hr at 1 m in water. ~~RAM~~ RAM over water tied into fire dept. If alarm goes off due to H₂O dropping, pump goes on to automatically replace water in pool. RAM over door of room. Also monitor next to resin bed.

6. MATERIALS, FACILITIES, AND INSTRUMENTS

- a. Is the licensee in possession of the authorized type, quantity, and form of material? [L/C] Y () N
- b. Are the materials being used as authorized? [L/C] Y () N
- c. Are appropriate survey meters on hand and operable? [L/C] Y () N
- d. Are survey meters calibrated at the required frequency? [L/C] Y () N
- e. Are fixed process or area monitors operable and calibrated at the required frequency? [L/C] Y () N
- f. Is source shroud in place and in good repair? [L/C] Y () N
Water
- g. Type of irradiator: () carrier () tote () pallet *N/A.*
- h. Manufacturer and model: ?

i. Mode of operation: () continuous batch

Remarks: *all meters calibrated on site with source calibrators possessed under -06 license. Personnel involved very knowledgeable in safer use. Yellow safety line on floor in which personnel must stand behind when open switch to expose source, then they leave room if long exposure needed.*

7. SOURCE LOADING AND UNLOADING

N/A. no loading/unloading of sources.

- a. Are procedures developed and implemented [L/C] () Y () N
- b. Are transfers of byproduct material proper? [30.41] () Y () N
- c. Are labels and packaging material appropriate? [71.5] () Y () N

Pocket dosimeters as well as wb badge indicates very low personnel exposures.

d. Are records of receipt, transfer, storage survey, and monitoring maintained? [30.51]

() Y () N

e. Does licensee know the position (by serial number and activity) of all sources? [L/C]

() Y () N

Remarks:

8. PERSONNEL PROTECTION - EXTERNAL

a. Personnel monitoring control; minimize exposures, control of accumulated dose [20.101,102,104,202]

() Y () N

b. Dosimetry supplier:

Panasonic badges
~~Attn: Army Lexington~~ Lexington, Kentucky
WVA-AP approved

c. Frequency of exchange:

quarterly

d. Type of dosimeters:

whole body badges
+ pocket dosimeter

e. Maximum exposures (W.B. and extremity):

minimal

f. Number of persons monitored:

anyone who could get > 590 NRC limits

g. Surveys conducted [20.201]

() Y () N

h. Frequency, results, records [20.401]

monthly surveys done by HP Tech
Record kept

i. Levels in Unrestricted Areas [20.105]

background

Remarks:

RSO reviews all dosimetry quarterly

9. LEAK TESTS/SOURCE INTEGRITY EVALUATIONS

- a. Are leak tests and/or source integrity evaluations conducted? [L/C] Y () N
- (1) Are the tests conducted at regular intervals? [L/C] Y () N
- (2) Is the testing method sufficient to detect leakage or source integrity problem? [L/C] Y () N
100ml water sample counted on gas flow prog counter
- b. Is a water chemistry program established and procedures developed? [L/C] Y () N
- (1) Have chemical parameters and sampling frequency been identified? [L/C] Y () N
- (2) Have appropriate limits and action levels been established? [L/C] Y () N
- (3) Does the chemical sampling program include the following? [L/C]
 - total and suspended solids (conductivity) Y () N
 - pH Y () N
 - pool clarity Y () N
 - chlorides/fluorides Y () N
- c. Is the pool cleanup and cooling system operated as designed? Y () N
- d. Are demineralizers used for pool cleanup? [L/C] Y () N
- (1) Are demineralizers always in operation or are they used intermittently? [L/C] Y () N
- (2) Are radiation monitors placed on or adjacent to the demineralizer? [L/C] Y () N
- (3) Are alarm set points established for those monitors? [L/C] Y () N
- (4) Does the monitor alarm in the control room? [L/C] Y () N
- e. Are records maintained of leak tests and source integrity? [L/C] Y () N

Remarks: *Conductivity checked monthly, change resin if cond. > 10 on Siemens done June 91 cond was 11 June 92 cond was 14 GM continuous resin filter monitor alarms*

10. RELEASE OF EFFLUENTS [20.106]

Does licensee evaluate:

- a. water leakage from pool? Y N
- b. effluent from regeneration of demineralizer? Y N
- c. pool sediment? Y N *NI*
- d. release of demineralizer to nonlicensed service company? Y N

Remarks:

filter goes to normal trash, it is first monitored in a gas flow prop. counter. If not > 1 ppm, UD, released as non rad waste.

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

- a. Licensee makes shipments of RAM Y *None*
- b. Shipments are:
 - delivered to common carriers
 - transported in licensee's own private vehicle
 - both
 - no shipments since last inspection

Remarks.

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 _____
 - (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.

12. NOTIFICATIONS AND REPORTS

- | | |
|---|--|
| a. To individuals [19.13] | (<input checked="" type="checkbox"/>) Y () N |
| b. Overexposures, excessive levels and concentrations, incidents [20.403,405] | () Y () N (<input checked="" type="checkbox"/>) None |
| c. Personnel exposures and monitoring termination reports [20.407,408] | () Y () N (<input checked="" type="checkbox"/>) None |
| d. Theft or loss of licensed material [20.402] | () Y () N (<input checked="" type="checkbox"/>) None |

Remarks: Licensee reported lost Sr source in June 93. After investigation, it was found to be a paper error - source never delivered.

13. POSTING OF NOTICES

- a. Parts 19 and 20, license and documents, procedures, and Notices of Violations [19.11] Y () N
- b. Form NRC-3 [19.11] Y () N

Remarks:

14. EMERGENCY PREPAREDNESS

- a. Has an emergency plan and general implementing procedures been developed? [L/C] Y () N
- b. Has the plan been coordinated with appropriate offsite support authorities (e.g. local government, emergency medical, state health authorities) [L/C] Y () N
Give lists of EAM yearly to authorities
- c. Are notification procedures adequate and up to date? Y () N
- d. Are management, RSO, and offsite authorities listed on the notification procedure? [L/C] Y () N
- e. Are licensee employees trained in emergency response activities? [L/C] Y () N
- f. Are drills conducted? [L/C] Y () N
If "Yes," are the drills critiqued? Y () N
- g. Are offsite officials involved in drills and training? [L/C] Y () N

Remarks:

*once per year em. drill done
involves fire dept + em response personnel, hospital
+ security.
Report written + critiqued.*

15. PRODUCT MONITORING

- a. Has the licensee established a program for periodically monitoring irradiated products for potential contamination? [L/C] *N/A* Y N
- If "Yes," does the program include:
- (1) direct radiation surveys? [L/C] Y N
- (2) removable contamination surveys? [L/C] Y N
- b. Have action limits been established for product contamination levels? [L/C] Y N
- c. Are the licensee's survey techniques and methods sensitive enough to detect the established contamination level? [L/C] Y N

Remarks:

16. RECORDKEEPING FOR DECOMMISSIONING

- 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.

a. Meter used: GM Ludlum 14C

b. Calib. Date: 11/92c. Serial No: 009663also found Army
meter VDR-2
Radac Set

d. Describe measurements taken and results:

measurement at yellow safety line at calibrator facility: < 2 mR/hr
 measurements around pool irradiator: background + resin

measurement at nage vault with Co60 source raised
 $.04$ mR/hr on outside of glass.

hottest area of Co source in shield 50 mR/hr
 " " of Cs source in shield $.09$ mR/hr

18. INDEPENDENT INSPECTION EFFORT

Scope of program: (Results) Review of Reg V allegation:

An review of calibrator source tracking system, material possessed at Schofield Barracks, Hawaii IS: 2 UDM-2 180 mCi Sr/Y 90
 2 UDM-6 5 uCi Plutonium

See attached letter regarding dispatch of HP to Schofield Barracks due to allegation from employee. Allegation not substantiated.

Review of lost Kr85 source phoned in on 6/93
 See attached report which states that Kr85 was never lost, it was a paper error. In fact, source was never shipped.

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

20. LIST OF VIOLATIONS *None*

21. PERFORMANCE EVALUATION FACTORS

Licensee (name & location) Dept of Army
Fort Monmouth

Inspector Arredondo
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:

e. Any previous violations not corrected () Y () N

Explain.

3. SCOPE OF PROGRAM

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

b. If so, list location(s) inspected () N/A

Fort Monmouth
Evans Areas

(no temp job sites inspected)

c. List those individuals contacted during inspection

* Barry Silber, Div Chief Hugo Bianchi
* Rick Lovell, HP Fred G. Gentry
Steve Horne Ed Bechtel
*Indicates presence at exit meeting

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

- no unsealed use of RAM
- only use under broad scope license is sealed sources
- 14 license - sealed sources at temp job sites

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 AMC

2) Frequency yearly

c. Records maintained. (✓) Y () N

Remarks.

5. TRAINING, RETRAINING, AND INSTRUCTIONS TO WORKERS

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

Remarks.

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

(1) If so, briefly describe training program:

(2) Training program implemented () Y () N

(3) Retraining program required () Y () N

(4) Retraining program implemented () Y () N

(5) Records maintained () Y () N

Remarks.

6. FACILITIES AND EQUIPMENT

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

Remarks.

b. Areas for storage and use of RAM

1) Adequate method used to prevent an unauthorized individual from entering restricted area () Y () N

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 () Y () N

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

(3) Records maintained

() Y () N

Remarks.

7. RADIOLOGICAL PROTECTION PROCEDURES

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

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

Remarks.

8. MATERIALS

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

Remarks. -14 license calibrator
 Kits across U.S. temp
 job sites
 -06 only possess S.S. at Fort Monmouth

- b. Leak tests and Inventory
 - (1) Leak tests of sealed sources performed as required [L/C] Y () N
 - (2) Inventory of RAM performed as required [L/C] Reviewed Calibrators Y () N
 - (3) Records maintained tracking system Y () N

Remarks.

Leak tests done at temp job sites by RPO at each facility (40 hr training course) as specified in Operating Manual (very explicit). Wipe sent back to Fort Monmouth for analysis. No leaking sources found.

Redundant

9. RECEIPT AND TRANSFER OF RADIOACTIVE MATERIAL

- a. Describe how packages are received and by whom: () N/A
- 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] () Y () N
- f. Records of surveys and receipt/transfer maintained per [20.401(b) and 30.51] () Y () N

Remarks.

10. AREA SURVEYS

() N/A

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

11. PERSONNEL RADIATION PROTECTION - EXTERNAL

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

(1) NRC-4:	() Y () N	Complete:	() Y () N () N/A
(2) NRC-5:	() Y () N	Complete:	() Y () N () N/A
[20.401(a)]			
- f. List maximum exposures (millirem):

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.

no unsealed use of RAM

13. RADIOACTIVE EFFLUENT AND WASTE DISPOSAL

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

Remarks.

No disposal

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

Redundant

- 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. ARC-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.

January 10, 1992

Safety Office

Mr. Robert Pate
Chief, Nuclear Materials and Fuel Fabrication Branch
U.S. Nuclear Regulatory Commission
Region V
1450 Maria Lane, Suite 210
Walnut Creek, California 94596-5368

Reference: U.S. Nuclear Regulatory Commission (NRC) Request for
Information on Radiation Concerns at Schofield
Barracks, Hawaii

Dear Mr. Pate:

In response to your letter of November 22, 1991 regarding Schofield Barracks, Hawaii, we dispatched a Health Physicist to the site to perform an investigation of the concerns. The Health Physicist, Mr. Joseph Santarsiero, represents the U.S. Army Communications-Electronics Command, which manages the NRC license for one of the commodities identified in your correspondence. Mr. Santarsiero's comprehensive report is enclosed.

We concur with the findings and recommendations made in the report.

For further information, please contact Mr. John Manfre at 703 274-9340.

Sincerely,

John E. Rankin
Chief
Safety Office

Enclosure

Copies Furnished:

COMMANDER

AMCOOM, ATTN: AMEM-SPS (w/encl)

AVSOOM, ATTN: AMEAV-X (w/encl)

CECOM, ATTN: AMSEL-SP-RER (wo/encl)



DEPARTMENT OF THE ARMY
 HEADQUARTERS, US ARMY COMMUNICATIONS-ELECTRONICS COMMAND
 AND FORT MONMOUTH
 FORT MONMOUTH, NEW JERSEY 07703-5000



REPLY TO
 ATTENTION OF

AMSEL-SF-RER

11 December 1991

MEMORANDUM FOR Commander, U.S. Army Material Command, ATTN: AMCSF-P, 5001
 Eisenhower Avenue, Alexandria, VA 22333-0001

SUBJECT: Assistance Visit - Schofield Barracks, HI

1. References:

- a. FONECONS between Mr. John Manfre, your command, and the undersigned, 25 Nov 91, SAB.
- b. Letter, U.S. Nuclear Regulatory Commission (NRC) Region V, 22 Nov 91 (encl 1).
- c. AR 385-11, Ionizing Radiation Safety, 1 May 80.
- d. AR 40-14, Control and Recording Procedures for Exposure to Ionizing Radiation and Radioactive Materials, 15 Mar 82.

2. As requested in reference 1a and in response to reference 1b, we are providing you with information concerning activities involving radioactive materials at the East Range, Schofield Barracks, HI.

3. Subject visit was performed by Mr. Joseph Santarsiero, Supervisory, Health Physicist, during the period 3-4 Dec 91.

4. Personnel Contacted:

Mr. William Sweat, Safety Director, United States Army Pacific (USARPAC), Fort Shafter

Mr. Douglas M. Mullins, Safety Specialist, United States Army Support Command-Hawaii (USASC-H), Fort Shafter

Mr. Jerry Cooper, Warehouse Worker Leader, Bldg 6017, East Range, Schofield Barracks

Mr. Clarence E. Freeman, Warehouse Worker, Bldg 6017, East Range, Schofield Barracks

Mr. Roger Olsen, Material Classifier, Schofield Barracks

CPT Brent Murphy, Health Physics Office, Tripler Army Medical Center (TAMC)

Mr. Rick Waffird, Health Physics Office, TAMC

OFFICE	NAME	INITIALS	DATE	TO
	WMS	WMS	11/91	
	S			

Red

AMSEL-SF-RER

SUBJECT: Assistance Visit - Schofield Barracks, HI

5. Discussion:

a. Upon arrival at Fort Shafter on 3 Dec 91, I received an in-brief from Mr. Sweat and Mr. Mullins involving the storage of radioactive materials at the East Range facility of Schofield Barracks as alleged, and identified, at reference 1b letter.

Ed
b. The site of concern was referred to as the warehouse storage branch, This building is used as a storage and holding warehouse for various commodities, items and equipment awaiting issue and/or disposition. Located in a remote portion of the warehouse was the area used for the storage of radioactive materials.

c. A physical survey of the storage location identified the presence of a number of radioactive commodities consisting primarily of compasses, watches, and leveling devices containing tritium (H-3). These items are managed by the U.S. Army Armament, Munitions, and Chemical Command, Rock Island, IL and/or the U.S. Army Troop Support Command, St. Louis, MO. All these devices and items were undamaged, with no apparent breach of source containment. In addition, there were approximately 10 each CECOM managed MX-7338/PDR-27() Radioactive Test Samples incorporating Krypton 85 gas. As with the H-3 commodities, these also showed no visible signs of damage or source breach.

d. Utilizing an Eberline ESP-2 survey meter (S/N 1222, calibration due date 27 Jan 92) with SPA-3, AC3-7, and HP 270 probes, I surveyed the storage location and surrounding areas for contamination. No levels above normal background readings were obtained. To evaluate for H-3 contamination, I took a total of 10 wipes utilizing meticel filters. Areas checked for contamination included the storage shelves which originally were used to store the above commodities; the shelves on which the above commodities were stored during my visit, i.e., the current storage area; and the surrounding floor areas. The wipes were analyzed by the Health Physics Office, TAMC using liquid scintillation analysis. Results of the analysis (encl 2) identified all areas to be less than the 200 disintegrations per minute, beta, as stipulated in Table 4-3, Radioactive Contamination Guides for removeable contamination in controlled areas, reference 1c.

e. Regarding the specific concerns addressed at reference 1b, the following information is provided:

(a) The storage areas for radioactive materials were not marked or labeled pursuant to Army instruction APZV-DLS-S 385-1.

At the time of the evaluation, the storage area was posted with the following:

- (1) Caution Radioactive Material
- (2) No eating, drinking, or smoking
- (3) NRC Form 3, Notice to Employees
- (4) Department of Transportation (DOT) placards

AMSEL-SF-RER

SUBJECT: Assistance Visit - Schofield Barracks, HI

Indication was made that these were also the signs that were posted during the time of the allegations. During my visit: (1) DOT signs were removed; (2) Caution Radioactive Material signs were placed in closer proximity to the storage location in order to limit the radiation control area; (3) additional posting requirements were identified. These included Title 10, Code of Federal Regulations, Parts 19, 20, and 21; and Section 206 of the Energy Reorganization Act. We have provided ARPAC Safety with these postings in addition to a revision of NRC Form 3.

(b) Regular personnel monitoring of employees was not done.

The type of radioactive material in the storage location, specifically H-3, does not require the use of personnel dosimetry or a medical surveillance program. The presence of gamma emitting Krypton 85 does not warrant the use of personnel dosimetry due to the: (1) limited amount of time personnel spend in the storage area; (2) distance from the radiation control area to unrestricted areas; (3) the remote possibility that personnel will receive exposures in excess of the requirements of reference 1d.

(c) Contamination surveys were not performed.

(And not req'd by Fort Monmouth license)

The only recorded evaluation of the storage area was performed by Mr. Mullins on 31 Oct 91. This evaluation was an overall assessment of the storage area to include a radiation survey. The evaluation is provided at enclosure 3. I indicated to Mr. Mullins that due to the presence of H-3, wiper tests of the area should be performed and analyzed through an agreement with TAMC. During my visit, I laid the groundwork for this support to be provided by TAMC. I recommended that a wipe test of the area be performed on at least a quarterly interval, however since H-3 commodities are not managed by CECOM, direction for the wipe testing should come from the appropriate AMC MSC. Regardless of this fact, Mr. Mullins agreed that the H-3 monitoring would be performed as recommended and results documented.

not licensed by F.M.

not known.

(d) Employees were not trained or informed regarding the hazards.

It is noteworthy to mention that prior to this incident occurring, arrangements had been made with ARPAC Safety and the CECOM Radiological Engineering Branch to present an on-site 40 hour Radiation Protection Officer Course to worker and user personnel during the Jan-Feb 92 timeframe. However, during my visit, I provided supervisory and warehouse personnel, approximately 24 individuals, with a 2.5 hour informal training session. Discussions during this training included, as a minimum: (1) the type and quantity of radioactive materials present in their storage location and other radioactive materials found within the Army supply system; (2) the radiation characteristics of these materials and potential hazards; (3) basic radiation protection practices to include the concepts of time, distance and shielding; (4) establishment and maintenance of a radiation protection program at a warehouse location, to include the shipment and receipt of radioactive materials and associated monitoring/survey requirements; (5) why radioactive materials are used and the functions of the items they are used in; (6) topics

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covered in 10 CFR 19, 20, and 21; (7) identification of radioactive commodities. In addition to the above, I individually addressed each of the allegations.

6. Our POC in this regard is Mr. Joseph Santarsiero, Milnet (AMSEL-SF@MONMOUTH-EMH3.ARMY.MIL): Message (CDR CECOM FT MONMOUTH NJ //AMSEL-SF-RER//); Facsimile on DSN 995-2667 or (908) 542-7161: or Voice on DSN 995-4427 or (908) 544-4427.

7. CECOM Bottom Line: THE SOLDIER.

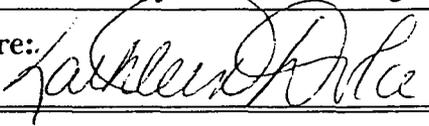
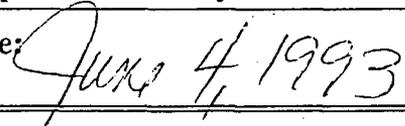
Prepared by:

JOSEPH M. SANTARSIERO
Chief, Radiological
Engineering Branch

Approved by:

STEVEN A. HORNE
Chief, Safety Office

3 Encls

TELEPHONE CONVERSATION RECORD	Date: Friday June 4, 1993	Time: 1430
Mail Control No.:	License No.: 29-01022-0?	Docket No.:
Person Called: Kathleen Dolce	Licensee: Dept. of the Army, Fort Monmouth	Telephone Number: (908) 544-4427
Person Calling: Joseph Santarsiero (RSO)		
Subject: Lost 5 millicurie Kr-85 source		
<p>Summary: Yesterday the RSO was reading a Dept. of Army form 751 (Telephone or Verbal Conversation Record). The record concerned a lost 5 millicurie Kr-85 check source (aka MX-7338 Radioactive Test Sample). This event occurred approximately two weeks ago following a field training exercise in Fort Bragg, North Carolina. The check source is usually chained to the inside of a AN/TDR27 beta-gamma survey meter carrying case. This check source is used to verify that the meter is working properly. The krypton gas is in a sealed source capsule. If the capsule were opened, the amount of radioactivity released exceeds the reportable quantity.</p> <p>Fort Bragg personnel are preparing a report (all info requested in 10 CFR). In addition, the personnel from Fort Monmouth are preparing a information circular for all Army personnel. The report and the circular will be sent to the Region I office in the next few weeks. Fort Monmouth personnel will update Region I late next week and give a definite date that this report will be received by Region I representatives.</p>		
<p>Action Required/Taken:</p> <ol style="list-style-type: none"> 1. Give Tara Weidner this record and classify this as an LER. 2. Give Sheri a copy of this...she is going to inspect them shortly 		
Signature: 	Date: 	



DEPARTMENT OF THE ARMY
 HEADQUARTERS, US ARMY COMMUNICATIONS-ELECTRONICS COMMAND
 AND FORT MONMOUTH
 FORT MONMOUTH, NEW JERSEY 07703-5000



REPLY TO
ATTENTION OF

June 11, 1993

Chief, Safety Office

SUBJECT: Reported loss of radioactive test sample.

U. S. Nuclear Regulatory Commission
 Region I
 475 Allendale Road
 Attn: Kathleen Dolce
 King of Prussia, PA 19406-1415

Dear Ms. Dolce:

As discussed with Mr. Joseph Santarsiero of my office on June 4, 1993, we are providing you with information related to subject reported loss.

As a result of our investigations, we have determined that the radioactive test sample, MX-7338, was in fact never assigned. Based upon information provided to us by the Safety Officer for the 82nd Airborne Division, see enclosure, there was no record of the test sample ever being assigned to the company.

If we can be of further assistance, please contact Mr. Joseph Santarsiero or myself at (908) 544-3112.

Sincerely,

Enclosure

STEVEN A. HORNE
Chief, Safety Office

CONCURRENCE				
OFFICE	NAME	INITIALS	DATE	TEL. NO.
	Dave	ES	6/11	
		[Signature]	6/11	
		[Signature]		

Handwritten initials: K.D.



DEPARTMENT OF THE ARMY
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Sincerely,

STEVEN A. HORNE
Chief, Safety Office

Enclosure

DEPARTMENT OF THE ARMY
Headquarters and Headquarters Company
82d Airborne Division
Fort Bragg, North Carolina 28307-5100

AFVC-Y

07 JUN 93

MEMORANDUM THRU ACOFS, G-1, 82D ABN DIV, Ft. Bragg, NC 28307-5100
ATTN: Mr. Pucylowski

MEMORANDUM FOR Directorate of Safety, 18th ABN CORPS, Ft. Bragg, NC 28307-6000--
ATTN: Mr. Vereen

SUBJECT: MX-7338/PDR-27S

1. The radioactive test sample, MX-7338, was reported missing to the Radiological Protection Office (RPO) on 03 JUN 93.
2. During the company's recent inspection by the Division Chemical Office, the inspector asked to see the MX-7338. The outgoing NBC NCO stated that he hadn't seen a MX-7338 in his 14 months as the NBC NCO.
3. The Property Book Office at the Division Material Management Center was contacted for the serial number of the MX-7338 and it was discovered that there was no record of the MX-7338 ever being assigned to the company by serial number.
4. The RPO was then contacted and again no serial number could be provided to the unit.
5. The POC is 1LT Casper, 432-8417/9679.

John H. Casper
JOHN H. CASPER
1LT, IN
Safety Officer