



# Radiation Safety Program

## Annual Summary Report

### A. Radiation Use Authorizations Approved

#### 1. New Radiation Use Authorizations

- Laura Burrus
- Chris Moffatt

**Total RUAs Issued: 2006-2007**

- Active: 11
- Inactive: 3

#### 2. Deleted RUAs

- Leticia Márquez-Magaña
- Maureen Whalen

### B. Major Accomplishments

#### Removal of Plutonium Source

10.0 Ci PuBe sealed source transferred to Los Alamos under the Resource Recovery Program. Ownership officially transferred in July 2006. Actual serial number is "MRC PU8BE 378" and is Pu-238 not Pu-239

### C. External Inspections

#### External Program Review

John Pickering, the RSO at San Jose State University, visited the campus and reviewed our program on Sept. 28, 2006. The visit was intended to evaluate the overall level of compliance and existing contamination/exposure controls. It was not a full blown inspection.

*Results:* Overall good recordkeeping and neat radiation labs. Improvement in signage and labeling of work areas and in frequency of leak and contamination testing was suggested.

#### External Agency Inspection

None

#### Enforcement Actions

None

### D. Inventory

Note: Quantity in millicuries

C-14	H-3	P-32	S-35	P-33	Si-32	I-125*	Co-57	As Nov. 1, '06
50.0	100.0	20.0	100.0	10.0	10.0	1.0	1.0	<b>Total Permitted</b>
23.4	2.5	0.25	0	0	0.002	0	0.265	<b>On hand</b>
13.2	31.0	0.10	0	0	0.30	0	0	<b>Waste in storage</b>
<b>36.6</b>	<b>33.5</b>	<b>0.35</b>	<b>0</b>	<b>0</b>	<b>0.302</b>	<b>0</b>	<b>0.265</b>	<b>TOTAL POSSESSED</b>

\* labeled compounds only



# Radiation Safety Program

Date: **November 17, 2006**

## Annual Radiation Program Report

### A. Radiation Protection Operation

#### 1. Survey Instruments

##### 16-Geiger-Muller Survey Instruments

- Calibration vendors changed to Ludlum and Technical Associates because Radiation Detection Services lost their service technician and can no longer make repairs.
- 3 meters are not in service pending calibration/repair.

#### 2. Sealed Source Leak Tests

Dec. 2005: Both 10Ci and 1.0 Ci PuBe sources leak tested      *Results:* Ok, no leaks  
 Aug. 2006: 1.0 Ci PuBe source leak tested      *Results:* Ok, no leaks

#### 3. Exposure Control

<b>External</b>	<i>(Quarterly)</i> <u>RSO</u>	<i>(Monthly)</i> <u>X-ray Tech</u>	<i>(Monthly)</i> <u>XRD Room</u>	<i>(Monthly)</i> <u>Unsealed Source Users</u>
	None Detected	None Detected	None Detected	n/a

**Internal**      None. No Bioassays warranted.

### B. Incidents and Spills

At RTC, a custodian picked up a bag of radioactive-contaminated lab trash from the Carpenter Lab and placed it in the municipal trash bin. Brita Larsson was notified and she was able to retrieve the unbroken bag of lab waste.

1. Custodian was retrained
2. Larger, more obvious radiation labels should be on the bags

At refresher training on Nov. 15, 2006, the RSO informed attendees that labs must start using commercially available yellow radioactive material bags with large pre-printed radiation symbol and the words, "Caution, Radioactive Material".

### C. Waste Management

RSO is working with Bud Shearer, Director of EHOS, to schedule a radioactive waste pickup as soon as possible. The RSO also requested that at least an annual radwaste pick-up be scheduled for both facilities.

#### 1. RTC

No waste pickup Sept. 2005 – Oct. 2006

#### 2. Main Campus

Transfer of 10 Ci PuBe sealed source to Los Alamos in July 2006.

No waste pickup Sept. 2005 – Oct. 2006



# Radiation Safety Program

## D. External Audits and Inspections

John Pickering, the RSO at San Jose State University, visited the campus and reviewed our program on Sept. 28, 2006. Mr. Pickering's recommendations for program improvement include:

- RSO should sign and date all incoming dosimetry reports
- RSO should perform wipes in labs quarterly, not semi-annually
- RSO should ensure leak tests on the 1.0 Ci PuBe sealed source are done no later than every 6 months
- Consider larger signs indicating radioactive materials areas
- RSO should survey the room directly behind the PuBe source to make sure the wall provides adequate shielding.
- RSO should take wipe samples of the walls in the HH vault where the tritium signs are stored
- Work areas in rad labs must be clearly marked with radioactive symbol labeled tape or other means

## E. Internal Inspections and Audits

October 2005-October 2006

	<u>RUA Holder</u>	<u>Dates</u>	<u>Recordkeeping Issues</u>	<u>Signs and Labels</u>	<u>Operational</u>
	Bruce Macher	Dec. '05		Needs updated "Notice to Employees" Posting	
	Robert Ramirez	Dec. '05	Missing wipe test records and information	Needs updated "Notice to Employees" Posting	
	Steve Weinstein <i>(Work done in Ramirez Lab)</i>	Dec. '05	Missing wipe test records		
	Maureen Whalen	Dec. '05	Missing recent wipe tests and spotty survey records	Needs updated "Notice to Employees" Posting	
RTC	Bill Cochlan	Dec. '05 May '06	Lab not being used – work is on boat	Needs updated emergency posting	
RTC	Ed Carpenter	Dec. '05 May '06	Missing information, surveys, and wipe tests Shared radioisotope, improve use log records		
RTC	Frances Wilkerson	Dec. '05 May '06	Shared radioisotope, need notation for record location	Radiation labels needed on radwaste containers More info. Needed on RAM labels	

Laura Burrus ----- *New RUA: No purchase or use of RAM as yet.*

Chris Moffatt ----- *New RUA: No purchase or use of RAM as yet.*

Diana Smith-Beckerman

INACTIVE LAB with STORAGE

Michael Goldman

INACTIVE LAB  
NO RAM STORAGE.

Zheng-Hui He



# Radiation Safety Program

## F. Training and Refreshers

### 1. New User Training

Fall 2005

Sept. 16  
Sept. 22 (XRD)  
Oct. 6

Spring 2006

May 17

Fall 2006

Sept. 8 (XRD)  
Sept. 25 (XRD)

Note: XRD general orientation covers basic radiation and exposure concepts

### 2. Refresher Training

Fall 2005

Dec. 9  
Sept. 22  
Dec. 13

Spring 2006

Feb. 8  
Mar. 22

**Topics:**

Fall 2006

Sept. 18  
Sept. 21  
Nov. 15

Recordkeeping, waste, inventory, OTJ training.  
(Yellow waste bags – RTC only)

No. of current users: 28

## G. Recommendations

### 1. Program Improvement

	<u>Current Status</u>
<ul style="list-style-type: none"> <li>Document the On-The-Job (OTJ) training in radioactive work practices given by the RUA Holder.</li> </ul>	Begin implementation in Fall 2006
<ul style="list-style-type: none"> <li>Setup a radioactive program activity calendar and perform specific inspection and contamination tests according to the required schedule.</li> </ul>	Begin implementation in Fall 2006
<ul style="list-style-type: none"> <li>Add a quiz or “recall exercise” to the <u>initial</u> radiation safety awareness training protocol.</li> </ul>	<i>XRD Training:</i> Already implemented <i>Unsealed RAM Users:</i> Implement in Fall ‘06

### 2. Previous Year's Recommendations

	<u>Current Status</u>
<ul style="list-style-type: none"> <li>Standardize radioactive materials ordering and recordkeeping for all RUA Holders.</li> <li>Standardize radioactive waste labeling</li> </ul>	Standardization has been implemented.
<ul style="list-style-type: none"> <li>Improve security and restrict access to radioactive sealed sources</li> </ul>	Installed a lockable steel cage around 1.0 Ci PuBe source in TH 119