

STATEMENT OF TRAINING AND EXPERIENCE

(Use additional sheets as necessary.)

Instructions: Each individual proposing to use radioactive material is required to submit a Statement of Training and Experience (RH 2050 A) **in duplicate** to: California Department of Public Health, Radiologic Health Branch, MS 7610, Licensing Section, P.O. Box 997414, Sacramento, CA 95899-7414. Physicians should request form RH 2000 A when applying for human-use authorizations. Radiographers should request form RH 2050 IR. For more information, go to www.dhs.ca.gov/rhb or phone (916) 327-5106.

1. Name of proposed user Cathie Condron	Position title Scientist		
Employer address (number, street) 520 Almanor Ave.	City Sunnyvale	State CA	ZIP code 94085
Radioactive materials license number	Radioactive materials license name		

2. **Training**

a. College or university Yes No

Name of college or university University of California Davis			
City Davis		State CA	
Years completed 5	Degree Ph.D	Course of study Chemical Physics	

b. Education specifically applicable to use of radioactive material

3. **Experience**

a. List experience with use of radioactive materials beginning with most recent:

(1) Dates From: **2009** To: **Present** Employer **Rapiscan Laboratories**

Title(s) and duties Scientist: LINAC operations, experimental measurements of gamma and neutron radiation			
Radioactive materials license number			Date
Employer address (number, street) 520 Almanor Avenue		City Sunnyvale	State CA
		State CA	ZIP code 94085

(2) Dates From: **2007** To: **2009** Employer **Stanford Synchrotron Radiation Light source**

Title(s) and duties Postdoctoral associate: maintain beam lines, experimental condensed matter physics and materials chemistry			
Radioactive materials license number			Date
Employer address (number, street) 2574 Sand Hill Rd.		City Menlo Park	State CA
		State CA	ZIP code 94025

(3) Dates From: To: Employer

Title(s) and duties			
Radioactive materials license number			Date
Employer address (number, street)		City	State
		State	ZIP code

(4) Dates From: To: Employer

Title(s) and duties			
Radioactive materials license number			Date
Employer address (number, street)		City	State
		State	ZIP code

b. Indicate the facilities and operations where training was received and refer to Part 3.a. when answering the following:

- | | | | | |
|---|---|---|------------------------------|------------------------------|
| <input checked="" type="checkbox"/> Laboratories using radiochemicals | <input type="checkbox"/> (1) | <input checked="" type="checkbox"/> (2) | <input type="checkbox"/> (3) | <input type="checkbox"/> (4) |
| <input checked="" type="checkbox"/> Restricted area laboratories | <input checked="" type="checkbox"/> (1) | <input checked="" type="checkbox"/> (2) | <input type="checkbox"/> (3) | <input type="checkbox"/> (4) |
| <input checked="" type="checkbox"/> Glove boxes | <input type="checkbox"/> (1) | <input checked="" type="checkbox"/> (2) | <input type="checkbox"/> (3) | <input type="checkbox"/> (4) |
| <input checked="" type="checkbox"/> Field operations | <input checked="" type="checkbox"/> (1) | <input type="checkbox"/> (2) | <input type="checkbox"/> (3) | <input type="checkbox"/> (4) |
| <input type="checkbox"/> Environmental applications | <input type="checkbox"/> (1) | <input type="checkbox"/> (2) | <input type="checkbox"/> (3) | <input type="checkbox"/> (4) |
| <input type="checkbox"/> Other (please describe) _____ | <input type="checkbox"/> (1) | <input type="checkbox"/> (2) | <input type="checkbox"/> (3) | <input type="checkbox"/> (4) |

c. Radioactive materials previously used. Identify typical radioisotopes in appropriate box and refer to Part 3.a. on page 1:

	QUANTITIES HANDLED			
	(a) Microcuries	(b) Millicuries	(c) Curies	(d) Kilocuries
(1) Sealed sources	AM 241, CO 60 Th 228	AM 241		
(2) Unsealed Alpha emitters				
(3) Unsealed beta-gamma emitters				
(4) Neutron sources				

d. Describe the procedures similar to those proposed in which you have had experience. Indicate months or years for each and refer to Part 3.a. on page 1.

I have carried out measurements using a 9MeV RF x-ray linac for 2 years. I have used sealed sources as calibration standards for 2 years.

4. Certificate

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I hereby certify that all information contained in this statement is true and correct.

Signature of proposed user

Date



July 22 2010

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1. Name of proposed user Craig M. Brown		Position title Staff Scientist		
Employer address (number, street) 520 Almanor Avenue		City Sunnyvale	State CA	ZIP code 94085-3533
Radioactive materials license number		Radioactive materials license name		
2. Training				
a. College or university <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				
Name of college or university Carnegie Mellon University				
City Pittsburgh		State PA		
Years completed 6	Degree Ph.D.	Course of study Nuclear Chemistry		
b. Education specifically applicable to use of radioactive material Experimental Nuclear Chemistry/Physics				
3. Experience				
a. List experience with use of radioactive materials beginning with most recent:				
(1) Dates From: Nov. 2008 To: Present		Employer Rapiscan Laboratories		
Title(s) and duties Staff Scientist: Experimental measurements of gamma and neutron radiation.				
Radioactive materials license number				Date
Employer address (number, street) 520 Almanor Avenue		City Sunnyvale	State CA	ZIP code 94085-3533
(2) Dates From: 2001 To: 2008		Employer NYSDOH Wadsworth Center		
Title(s) and duties Research Scientist: Conduct independent research program, QA/QC Officer, Assistant Professor				
Radioactive materials license number				Date
Employer address (number, street) Empire State Plaza, P.O. Box 509		City Albany	State NY	ZIP code 12201-0509
(3) Dates From: 1998 To: 2001		Employer Lawrence Livermore National Laboratory		
Title(s) and duties Post Doctoral Researcher: Make neutron and gamma-ray measurements, Detector design and development.				
Radioactive materials license number				Date
Employer address (number, street) 7000 East Avenue		City Livermore	State CA	ZIP code 94550
(4) Dates From: 1991 To: 1997		Employer Carnegie Mellon University		
Title(s) and duties Graduate Student: Nuclear Chemistry/Nuclear Physics				
Radioactive materials license number				Date
Employer address (number, street) 4400 Fifth Avenue		City Pittsburgh	State PA	ZIP code 15213-2683

b. Indicate the facilities and operations where training was received and refer to Part 3.a. when answering the following:

- | | | | | |
|---|---|---|---|---|
| <input checked="" type="checkbox"/> Laboratories using radiochemicals | <input checked="" type="checkbox"/> (1) | <input checked="" type="checkbox"/> (2) | <input checked="" type="checkbox"/> (3) | <input checked="" type="checkbox"/> (4) |
| <input checked="" type="checkbox"/> Restricted area laboratories | <input checked="" type="checkbox"/> (1) | <input type="checkbox"/> (2) | <input checked="" type="checkbox"/> (3) | <input checked="" type="checkbox"/> (4) |
| <input type="checkbox"/> Glove boxes | <input type="checkbox"/> (1) | <input type="checkbox"/> (2) | <input type="checkbox"/> (3) | <input type="checkbox"/> (4) |
| <input type="checkbox"/> Field operations | <input type="checkbox"/> (1) | <input type="checkbox"/> (2) | <input type="checkbox"/> (3) | <input type="checkbox"/> (4) |
| <input checked="" type="checkbox"/> Environmental applications | <input type="checkbox"/> (1) | <input checked="" type="checkbox"/> (2) | <input type="checkbox"/> (3) | <input type="checkbox"/> (4) |
| <input checked="" type="checkbox"/> Other (please describe) <u>Operating Radiation Producing Equip.</u> | <input checked="" type="checkbox"/> (1) | <input checked="" type="checkbox"/> (2) | <input type="checkbox"/> (3) | <input type="checkbox"/> (4) |

c. Radioactive materials previously used. Identify typical radioisotopes in appropriate box and refer to Part 3.a. on page 1:

	QUANTITIES HANDLED			
	(a) Microcuries	(b) Millicuries	(c) Curies	(d) Kilocuries
(1) Sealed sources	Standards 1-4			
(2) Unsealed Alpha emitters				
(3) Unsealed beta-gamma emitters				
(4) Neutron sources	Cf 3			

d. Describe the procedures similar to those proposed in which you have had experience. Indicate months or years for each and refer to Part 3.a. on page 1.

I have routinely used sealed sources as calibration standards for the past 18 years at locations 1-4. I have used facilities with restricted radiation worker and vert high radiation areas to perform heavy ion experiments and neutron time of flight measurements; 6 months; locations 3-4.

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I hereby certify that all information contained in this statement is true and correct.

Signature of proposed user <i>Craig M. Brown</i>	Date <i>7-15-2010</i>
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1. Name of proposed user Michael King	Position title Staff Scientist		
Employer address (number, street) 520 Almanor Avenue	City Sunnyvale	State CA	ZIP code 94085
Radioactive materials license number	Radioactive materials license name		

2. **Training**

a. College or university Yes No

Name of college or university University of California at Berkeley			
City Berkeley		State CA	
Years completed 6	Degree PhD	Course of study Nuclear Engineering	

b. Education specifically applicable to use of radioactive material

3. **Experience**

a. List experience with use of radioactive materials beginning with most recent:

Attachment ↓

(1) Dates From: To:		Employer	
Title(s) and duties			
Radioactive materials license number			Date
Employer address (number, street)		City	State ZIP code
(2) Dates From: To:		Employer	
Title(s) and duties			
Radioactive materials license number			Date
Employer address (number, street)		City	State ZIP code
(3) Dates From: To:		Employer	
Title(s) and duties			
Radioactive materials license number			Date
Employer address (number, street)		City	State ZIP code
(4) Dates From: To:		Employer	
Title(s) and duties			
Radioactive materials license number			Date
Employer address (number, street)		City	State ZIP code

b. Indicate the facilities and operations where training was received and refer to Part 3.a. when answering the following:

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| <input checked="" type="checkbox"/> Restricted area laboratories | <input type="checkbox"/> (1) | <input checked="" type="checkbox"/> (2) | <input checked="" type="checkbox"/> (3) | <input type="checkbox"/> (4) |
| <input checked="" type="checkbox"/> Glove boxes | <input type="checkbox"/> (1) | <input type="checkbox"/> (2) | <input checked="" type="checkbox"/> (3) | <input type="checkbox"/> (4) |
| <input checked="" type="checkbox"/> Field operations | <input type="checkbox"/> (1) | <input checked="" type="checkbox"/> (2) | <input checked="" type="checkbox"/> (3) | <input type="checkbox"/> (4) |
| <input type="checkbox"/> Environmental applications | <input type="checkbox"/> (1) | <input type="checkbox"/> (2) | <input type="checkbox"/> (3) | <input type="checkbox"/> (4) |
| <input type="checkbox"/> Other (please describe) _____ | <input type="checkbox"/> (1) | <input type="checkbox"/> (2) | <input type="checkbox"/> (3) | <input type="checkbox"/> (4) |

c. Radioactive materials previously used. Identify typical radioisotopes in appropriate box and refer to Part 3.a. on page 1:

	QUANTITIES HANDLED			
	(a) Microcuries	(b) Millicuries	(c) Curies	(d) Kilocuries
(1) Sealed sources	Co-60			
(2) Unsealed Alpha emitters	Am-241			
(3) Unsealed beta-gamma emitters	Cs-137			
(4) Neutron sources	Cf-252			

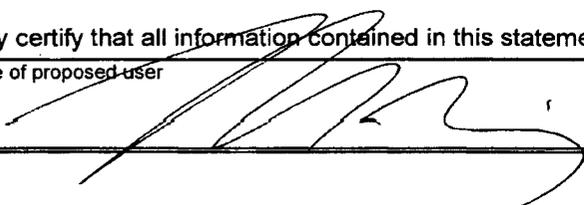
d. Describe the procedures similar to those proposed in which you have had experience. Indicate months or years for each and refer to Part 3.a. on page 1.

→ Attached Document

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I hereby certify that all information contained in this statement is true and correct.

Signature of proposed user 	Date 7/23/10
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STATEMENT OF TRAINING AND EXPERIENCE

3.a. Experience

1. University of California at Berkeley 1/01 Student
 - a. General Radiation Safety Training Course
 - i. Sealed source training for experimental course using Am-241
2. Lawrence Berkeley National Laboratory 6/03 – 12/08 Graduate Student Researcher
 - a. ESH400 Radiation Protection Fundamentals Course
 - b. ESH405 General Employee Radiation Training Course (GERT)
 - c. ESH432 Radiation Protection Course – Lab Safety
 - i. ALARA, contamination control, radiation monitoring and documentation, proper use of personnel protective equipment, spill response, and proper posting and labeling. This course is mandatory prior to commencing work with unsealed radioactive material or sealed radioactive sources.
 - d. Radioactive Materials Used
 - i. Mixed Gamma Source HC-5238 1.07e-6 Ci
 - ii. Mixed Gamma Source HC-5239 4.86e-6 Ci
 - e. Radiation Generating Devices Operated
 - i. 120 kV axial D-D Neutron Generator (LBNL)
 - ii. 100 kV co-axial D-D Neutron Generator (LBNL)
3. Sandia National Laboratory 6/05 – 12/08 Graduate Student Researcher
 - a. RAD102 General Employee Radiological Training Course
 - b. RAD175 Radiation Worker Awareness Training Course
 - c. RAD210 Radioactive sources and/or radiation generating devices training course
 - d. RAD213 Workers who operate radiation generating devices course
 - e. Radioactive Materials Used
 - i. Cs-137 1.60e-5 Ci
 - ii. U-238 1.01e-4 Ci
 - iii. Am-241 9.24e-8 Ci
 - iv. U-235 7.00e-4 Ci
 - v. Cf-252 2.68e-4 Ci
 - f. Radiation Generating Devices Operated
 - i. 700 keV Accelerator (High Voltage Engineering)
 - ii. 350kV Gamma Generator (LBNL)
 - iii. 120 kV D-D Neutron Generator (LBNL)
4. National Institute of Standards and Technology 2/06 Graduate Student Researcher
 - a. Radiation Safety Program 2/05/2007
 - i. Survey procedure of hands and feet, radiation alarm sounds
 - ii. Cold neutron reflectometer-horizontal sample

3.d. Experience

Describe the procedures similar to those proposed in which you have had experience. Below is an excerpt of the Standard Operating Procedure at Sandia National Laboratory where radiation is present. The procedures utilize dosimetry and routine radiation surveys.

Radiation Hazards

5.3.1 There are two commercial ion implanters in the B916/104E. Both devices are exempt from DOE 5480.25, Safety of Accelerator Facilities per exclusion 4.a. The installation type is: Shielded Installation; the device types are: High Energy Particle Accelerators.

5.3.1.1 Accelerators Inc.; 200 keV accelerator; maximum voltage: 200 keV; maximum operating current: 50 μ A; type and energy of radiation produced: x radiation (200 keV maximum energy), positive ion beams; location: B916/104E; RGD Custodian: K. Hertz; RGD registration number: 7339.

5.3.1.2 High Voltage Engineering; Model # AN-700; Serial # (not available); maximum voltage: 750 keV; maximum operating current: 50 μ A; type and energy of radiation produced: x radiation (700 keV maximum energy), positive ion beams; location: B916/104E; RGD Custodian: K. Hertz; RGD registration number: 7340.

5.3.2 X-Radiation

5.3.2.1 X radiation generated during operation of the accelerators is capable of creating a High Radiation Area (HRA) inside the cell. The cell is an interlocked exclusion area during device operation. The one foot thick concrete walls are sufficient to attenuate the x radiation levels to near background outside the cell.

5.3.3 Neutron Radiation

5.3.3.1 2.5 MeV neutrons are produced when energetic deuterium ions strike deuterium implanted in the sample or walls of the accelerator vacuum chamber. Past experience (Shope, SC-TM-66-247) has shown that long implants into aluminum targets with 200 keV deuterons at 1.6 μ A produce no measurable radiation outside the concrete cell. As an upper bound, recent MCNP calculations indicate that 50 μ A of 700 keV deuterons on a fully loaded deuterided target will produce < 1 mrem/hr at the wall into 104C. However, the emergency exit wall and the roof will have doses of approximately 60 mrem/hr without additional shielding in by the target area. The neutron flux for hydride forming targets should fall between zero and these maximum levels, gradually

increasing as the loading increases. Neutron radiation levels inside the cell are approximately 300 times the highest levels in the laboratory. If an experiment requires the use of deuterided targets or other methods of producing neutrons in the target region, Radiation Protection will be notified and will be present to assess the radiation hazard and establish safe operating conditions.

5.3.3.2 With the exception of deuterium, all gases have a sufficiently high nuclear charge to not present a neutron hazard since the coulomb repulsion can not be overcome at the low energies available with these accelerators (200 keV and 700 keV).

5.3.4 Radioactive Material

5.3.4.1 A radioactive source is maintained in the lab for use as an instrument check source (16 μCi ^{137}Cs). The source is stored in a locked cabinet in B916/104E, which is a posted Radioactive Material Area. Only properly trained personnel shall handle these sources.

5.3.4.2 Neutrons produced at the target and on beam line components may activate the target and accelerator hardware. The anticipated level of activation is calculated using the anticipated steady-state neutron flux incident on the hardware. Past studies show that the anticipated deuterium loading of Al and stainless steel beam line hardware will produce a steady-state neutron output of 1×10^5 n/s for a 1.6 μA beam. This is a factor of 7.5 below the maximum output calculated above and is believed to be more representative of steady-state operation. Activities are calculated from SLA-73-0637 (B.T. Kenna) for 100 hours of continuous operation. The activation is saturated (will not increase further) for Al, Cu; but will be about 6x for Fe, Ni (steel) after 30 days. The activation calculations are broken down into two zones: zone 1, the close proximity of the target where the flux is the highest; and zone 2, the wall of the target chamber (about 6 cm from the target) and beam line components near a neutron source. Beyond these zones, neutron fluxes are sufficiently low that activation is believed to be negligibly small.

Zone 1: Target and target mounting plate - 200 gm Cu and Al. Activation to 43 nCi or 20 mrem/hr (1-2 MeV gammas).

Zone 2: Target chamber and beam line components - 2000 gm steel within 6 cm of a neutron source. Activation to 1.2 nCi or 0.6 mrem/hr (0.2-2 MeV gammas), increasing to 3.4 mrem/hr after 30 days of continuous operation.

5.3.4.3 Radiation Protection personnel shall be contacted (x41503) for survey of all potentially activated material. Radioactive material generated shall be handled in accordance with reference 10.6, chapter 6.

5.3.5 Dosimetry

5.3.5.1 Whole body Thermo Luminescent Dosimeters (TLDs) shall be worn by operators. In addition, whole body dosimeters shall be worn by personnel likely to receive TEDE of 50 mrem (0.5 mSv). Extremity dosimetry shall be worn by personnel likely to exceed a 5 rem (50 mSv) in a year shallow dose equivalent to the skin or to any extremity. Dosimeters shall be read at least quarterly.

5.3.6 Radiological Surveys

5.3.6.1 Each RGD shall have an initial radiation survey and shall be surveyed annually thereafter. In addition to routine periodic surveys, each device shall have a radiation survey after any change which could increase the radiation exposure of any person (e.g., after changes to shielding, after event of seismic activity, operation, equipment, location, or occupancy of adjacent areas, increase in beam current or accelerating potential, after maintenance or repair operations, after removal from storage), whenever specified by this SOP, and whenever dosimeter readings show a significant increase in exposures over the previous monitoring period. The RGD custodian is responsible for contacting Radiation Protection (x41503) to schedule radiation surveys.

5.3.6.2 A portable radiation survey instrument is maintained at the accelerator console. Before use each day, source check the instrument and record the results in the log sheet.

5.3.6.3 A GM tube are installed in the cell with displays at the operator's console. These instruments are used for indication purposes only.

5.3.6.4 If radiation levels outside the cell exceed 2 mrem/hr (measured at 30 cm from the surface), shut down the device(s) (see Section 7.2) and contact Radiation Protection (x41503).

5.3.6.5 A calibrated portable radiological survey instrument shall be used each time the accelerator cell is entered after machine shutdown.

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1. Name of Proposed User Mashal Elsalim		Position Title Scientist	
Employer Address (Street Address) 2950 Patrick Henry Drive		City Santa Clara	State CA
Radioactive Materials License Number 2484-43		Radioactive Materials License Name Ancore Corporation	
2. Training			
a. College or University <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Name San Jose State University			
City San Jose		State CA	
Years Completed 7	Degree BS, MS	Course of Study Physics, Rad. Health Physics	
b. Education specifically applicable to use of radioactive material MS, Radiation Health Physics			
3. Experience			
a. List experience with use of radioactive materials beginning with most recent			
(1) Dates From June 1995 To Present		Employer Ancore Corporation	
Titles and Duties Scientist: Development of neutron activation analysis systems			
Radioactive Materials License Number 2484-43		Date	
Employer Address (Street Address) 2950 Patrick Henry Drive		City Santa Clara	State CA
ZIP Code 95054			
(2) Dates From Nov 1992 To Sept 1994		Employer Varian Oncology Systems	
Titles and Duties Health Physicist: Characterize the neutron and x-ray fields around LINACS			
Radioactive Materials License Number		Date	
Employer Address (Street Address) 3045 Hanover St.		City Palo Alto	State CA
ZIP Code			
(3) Dates From March 1989 To Nov 1992		Employer SAIC	
Titles and Duties Scientist: Development of neutron activation analysis systems			
Radioactive Materials License Number 2484-43		Date	
Employer Address (Street Address) 2950 Patrick Henry Drive		City Santa Clara	State CA
ZIP Code 95054			
(4) Dates From To		Employer	
Titles and Duties			
Radioactive Materials License Number		Date	
Employer Address (Street Address)		City	State
ZIP Code			

- | | | | | |
|--|---|---|---|------------------------------|
| <input checked="" type="checkbox"/> Restricted area laboratories | <input checked="" type="checkbox"/> (1) | <input checked="" type="checkbox"/> (2) | <input checked="" type="checkbox"/> (3) | <input type="checkbox"/> (4) |
| <input type="checkbox"/> Glove boxes | <input type="checkbox"/> (1) | <input type="checkbox"/> (2) | <input type="checkbox"/> (3) | <input type="checkbox"/> (4) |
| <input checked="" type="checkbox"/> Field operations | <input checked="" type="checkbox"/> (1) | <input type="checkbox"/> (2) | <input checked="" type="checkbox"/> (3) | <input type="checkbox"/> (4) |
| <input type="checkbox"/> Environmental applications | <input type="checkbox"/> (1) | <input type="checkbox"/> (2) | <input type="checkbox"/> (3) | <input type="checkbox"/> (4) |
| <input type="checkbox"/> Other (please describe) _____ | <input type="checkbox"/> (1) | <input type="checkbox"/> (2) | <input type="checkbox"/> (3) | <input type="checkbox"/> (4) |

c. Radioactive materials previously used. Identify typical radioisotopes in appropriate box and refer to Part 3.a. on preceding page:

	Quantities Handled			
	(a) Microcuries	(b) Millicuries	(c) Curies	(d) Kilocuries
(1) Sealed sources	Std. Cal sources	Cs-137; Am-241,		
(2) Unsealed alpha emitters		(1.873) (1.2,3)		
(3) Unsealed beta-gamma emitters				
(4) Neutron sources	Cf-252 (1.3)	AmBe & Cf-152 (1.3)	Pu-238/Be, Am-241/ Li (1.3)	Pu-238, Pu-239 (2)

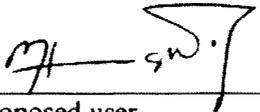
d. Describe the procedures similar to those proposed in which you have had experience. Indicate months or years for each and refer to Part 3.a. on preceding page.

- 12 years use of calibration sources for detector calibration purposes and lab work.
- 8 years assisted the RSO in routine radiation safety maintenance, including wipe tests, inventory, source transfers remotely, etc.
- Licensed source user since March 1990, handling up to curie activities of various sources listed above.

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I hereby certify that all information contained in this statement is true and correct.



 Signature of proposed user

Feb. 17, 2004

 Date

STATEMENT OF TRAINING AND EXPERIENCE**(Use additional sheets as necessary.)**

Instructions: Each individual proposing to use radioactive material is required to submit a Statement of Training and Experience (RH 2050 A) in duplicate to: California Department of Health Services, Radiologic Health Branch, MS 7610, Licensing Section, P.O. Box 997414, Sacramento, CA 95899-7414. Physicians should request form RH 2000 A when applying for human-use authorizations. Radiographers should request form RH 2050 IR. For more information, go to www.dhs.ca.gov/rhb or phone (916) 327-5106.

1. Name of proposed user Edward D. Franco		Position title Radiation Safety Officer; Manager R&D		
Employer address (number, street) Rapiscan Laboratories, 520 Almanor Ave		City Sunnyvale	State CA	ZIP code 94085
Radioactive materials license number 2484-43		Radioactive materials license name Rapiscan Laboratories		
2. Training				
a. College or university <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				
Name of college or university San Jose State University (Colorado State University - BS Mechanical Engineering - Nuclear Engineering)				
City San Jose		State CA		
Years completed 6	Degree MS	Course of study Radiological Health Physics		
b. Education specifically applicable to use of radioactive material				
Numerous courses in nuclear chemistry, radiation biology, dosimetry, shielding, health physics, instrument developmen				
3. Experience				
a. List experience with use of radioactive materials beginning with most recent:				
(1) Dates From: 2004 To: Present		Employer Rapiscan		
Title(s) and duties Manager, Research and Development (Radiation Safety Officer since 2008)				
Radioactive materials license number 2484-43				Date
Employer address (number, street) 420 Almanor Avenue		City Sunnyvale	State CA	ZIP code 94085
(2) Dates From: 1982 To: 2000		Employer ARACOR		
Title(s) and duties Staff Scientist, Radiation Safety Officer (1992-2000)				
Radioactive materials license number 3592-43				Date October 24, 2000
Employer address (number, street) 425 Lakeside Drive		City Sunnyvale	State CA	ZIP code 94086
(3) Dates From: 1982 To: 1984		Employer San Jose State University		
Title(s) and duties Graduate Student				
Radioactive materials license number				Date
Employer address (number, street)		City San Jose	State CA	ZIP code
(4) Dates From: 1978 To: 1980		Employer Colorado State University		
Title(s) and duties Student				
Radioactive materials license number				Date
Employer address (number, street)		City Ft Collins	State CO	ZIP code

b. Indicate the facilities and operations where training was received and refer to Part 3.a. when answering the following:

- | | | | | |
|--|---|---|---|---|
| <input type="checkbox"/> Laboratories using radiochemicals | <input checked="" type="checkbox"/> (1) | <input type="checkbox"/> (2) | <input checked="" type="checkbox"/> (3) | <input checked="" type="checkbox"/> (4) |
| <input type="checkbox"/> Restricted area laboratories | <input checked="" type="checkbox"/> (1) | <input type="checkbox"/> (2) | <input checked="" type="checkbox"/> (3) | <input checked="" type="checkbox"/> (4) |
| <input type="checkbox"/> Glove boxes | <input type="checkbox"/> (1) | <input type="checkbox"/> (2) | <input type="checkbox"/> (3) | <input type="checkbox"/> (4) |
| <input type="checkbox"/> Field operations | <input checked="" type="checkbox"/> (1) | <input checked="" type="checkbox"/> (2) | <input checked="" type="checkbox"/> (3) | <input type="checkbox"/> (4) |
| <input type="checkbox"/> Environmental applications | <input type="checkbox"/> (1) | <input type="checkbox"/> (2) | <input type="checkbox"/> (3) | <input type="checkbox"/> (4) |
| <input type="checkbox"/> Other (please describe) _____ | <input type="checkbox"/> (1) | <input type="checkbox"/> (2) | <input type="checkbox"/> (3) | <input type="checkbox"/> (4) |

c. Radioactive materials previously used. Identify typical radioisotopes in appropriate box and refer to Part 3.a. on page 1:

	QUANTITIES HANDLED			
	(a) Microcuries	(b) Millicuries	(c) Curies	(d) Kilocuries
(1) Sealed sources	Exempt sources	Multiple (1)	Co60 Cs137 (1)	Co-60 (2)
(2) Unsealed Alpha emitters				
(3) Unsealed beta-gamma emitters		Tritium (4)		
(4) Neutron sources	Cf (1)	AmBe, Cf (1)	PuBe AmLi (1,4)	

d. Describe the procedures similar to those proposed in which you have had experience. Indicate months or years for each and refer to Part 3.a. on page 1.

instrument development and calibration, dosimetry, radiography 3(a) 1 and 2 - 24 years experience

4. Certificate

The information you are asked to provide on this form is requested by the California Department of Health Services, Radiologic Health Branch. This notice is required by Section 1798.17 of the Information Practices Act of 1977 (Code of Civil Procedure, Section 1798-1798.76) and the Federal Privacy Act to be provided whenever an agency requests personal or confidential information from any individual. It is mandatory that you furnish the information requested on this form. Failure to furnish the requested information may result in an inaccurate determination of statements and/or disapproval of your application.

I hereby certify that all information contained in this statement is true and correct.

Signature of proposed user

Robert O. Jones

Date

Oct 20, 2010

STATEMENT OF TRAINING AND EXPERIENCE

(Use additional sheets as necessary.)

Instructions: Each individual proposing to use radioactive material is required to submit a Statement of Training and Experience (RH 2050 A) in duplicate to: California Department of Public Health, Radiologic Health Branch, MS 7610, Licensing Section, P.O. Box 997414, Sacramento, CA 95899-7414. Physicians should request form RH 2000 A when applying for human-use authorizations. Radiographers should request form RH 2050 IR. For more information, go to www.dhs.ca.gov/rhb or phone (916) 327-5106.

1. Name of proposed user <u>Timothy Shaw</u>	Position title <u>Scientist</u>		
Employer address (number, street) <u>520 Almanor Ave.</u>	City <u>Sunnyvale</u>	State <u>CA</u>	ZIP code <u>94085</u>
Radioactive materials license number <u>2484-43</u>	Radioactive materials license name		

2. Training

a. College or university Yes No

Name of college or university <u>University of California, Berkeley</u>			
City <u>Berkeley</u>		State <u>CA</u>	
Years completed <u>7</u>	Degree <u>Ph.D.</u>	Course of study <u>Physics</u>	

b. Education specifically applicable to use of radioactive material

3. Experience

a. List experience with use of radioactive materials beginning with most recent:

(1) Dates From: <u>10/2001</u> To: <u>present</u>	Employer <u>Rapiscan Laboratories</u>
Title(s) and duties <u>Scientist, Project Manager, authorized user on rad. mat. license</u>	
Radioactive materials license number <u>2484-43</u>	Date current amendment <u>12/19/08</u>
Employer address (number, street) <u>520 Almanor Ave.</u>	City <u>Sunnyvale</u> State <u>CA</u> ZIP code <u>94085</u>

(2) Dates From: _____ To: _____	Employer _____
Title(s) and duties _____	
Radioactive materials license number _____	Date _____
Employer address (number, street) _____	City _____ State _____ ZIP code _____

(3) Dates From: _____ To: _____	Employer _____
Title(s) and duties _____	
Radioactive materials license number _____	Date _____
Employer address (number, street) _____	City _____ State _____ ZIP code _____

(4) Dates From: _____ To: _____	Employer _____
Title(s) and duties _____	
Radioactive materials license number _____	Date _____
Employer address (number, street) _____	City _____ State _____ ZIP code _____

b. Indicate the facilities and operations where training was received and refer to Part 3.a. when answering the following:

- | | | | | |
|--|---|------------------------------|------------------------------|------------------------------|
| <input type="checkbox"/> Laboratories using radiochemicals | <input type="checkbox"/> (1) | <input type="checkbox"/> (2) | <input type="checkbox"/> (3) | <input type="checkbox"/> (4) |
| <input checked="" type="checkbox"/> Restricted area laboratories | <input checked="" type="checkbox"/> (1) | <input type="checkbox"/> (2) | <input type="checkbox"/> (3) | <input type="checkbox"/> (4) |
| <input type="checkbox"/> Glove boxes | <input type="checkbox"/> (1) | <input type="checkbox"/> (2) | <input type="checkbox"/> (3) | <input type="checkbox"/> (4) |
| <input checked="" type="checkbox"/> Field operations | <input checked="" type="checkbox"/> (1) | <input type="checkbox"/> (2) | <input type="checkbox"/> (3) | <input type="checkbox"/> (4) |
| <input type="checkbox"/> Environmental applications | <input type="checkbox"/> (1) | <input type="checkbox"/> (2) | <input type="checkbox"/> (3) | <input type="checkbox"/> (4) |
| <input type="checkbox"/> Other (please describe) _____ | <input type="checkbox"/> (1) | <input type="checkbox"/> (2) | <input type="checkbox"/> (3) | <input type="checkbox"/> (4) |

c. Radioactive materials previously used. Identify typical radioisotopes in appropriate box and refer to Part 3.a. on page 1:

	QUANTITIES HANDLED			
	(a) Microcuries	(b) Millicuries	(c) Curies	(d) Kilocuries
(1) Sealed sources	Am-241, Ba-133, Co-57, Co-60, Cs-137, Ra-226, Th-232	Am-241, Am-241/Ba, U-235, U-239		
(2) Unsealed Alpha emitters				
(3) Unsealed beta-gamma emitters				
(4) Neutron sources		2.5 MeV - 2×10^9 n/s 14 MeV - 2×10^9 n/s		

d. Describe the procedures similar to those proposed in which you have had experience. Indicate months or years for each and refer to Part 3.a. on page 1.

2.5 MeV - 2×10^9 n/s
14 MeV - 2×10^9 n/s

I have carried out measurements using a commercial 9 MeV RF x-ray linac, rented from HESCO Corp, for the past two years.

4. Certificate

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I hereby certify that all information contained in this statement is true and correct.

Signature of proposed user

Timothy Shaw

Date

7/20/2010

STATEMENT OF TRAINING AND EXPERIENCE
(Use additional sheets as necessary.)

Instructions: Each individual proposing to use radioactive material is required to submit a Statement of Training and Experience (RH 2050 A) in duplicate to: California Department of Public Health, Radiologic Health Branch, MS 7610, Licensing Section, P.O. Box 997414, Sacramento, CA 95899-7414. Physicians should request form RH 2000 A when applying for human-use authorizations. Radiographers should request form RH 2050 IR. For more information, go to www.dhs.ca.gov/rhb or phone (916) 327-5106.

1. Name of proposed user John Stevenson		Position title Sr. Scientist	
Employer address (number, street) 520 Almanor		City Sunnyvale	State CA
Radioactive materials license number		Radioactive materials license name	
2. Training			
a. College or university <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Name of college or university University of California			
City Berkeley		State CA	
Years completed	Degree PhD	Course of study Physics	
b. Education specifically applicable to use of radioactive material Worked at an accelerator facility at Lawrence Berk Labs			
3. Experience			
a. List experience with use of radioactive materials beginning with most recent:			
(1) Dates From: Oct 2002 To: Present Employer Rapiscan Systems			
Title(s) and duties Sr Scientist Project Manager for Government R+D program			
Radioactive materials license number			
Employer address (number, street) 520 Almanor		City Sunnyvale	State CA
ZIP code 94085		Date	
(2) Dates From: Oct 1997 To: Oct 2002 Employer Ancore Corporation			
Title(s) and duties Sr Scientist Project Manager for Government R+D Programs			
Radioactive materials license number			
Employer address (number, street) 2950 Patrick Henry Dr.		City Santa Clara	State CA
ZIP code 95054		Date	
(3) Dates From: Oct 1990 To: Oct 1997 Employer SAIC			
Title(s) and duties Sr Scientist Project Manager for Government R+D Programs			
Radioactive materials license number			
Employer address (number, street) 2950 Patrick Henry Dr		City Santa Clara	State CA
ZIP code 95054		Date	
(4) Dates From: Sept 1984 To: Oct 1990 Employer Dept. of Physics + NSCL Lab Michigan State			
Title(s) and duties Assistant Professor and research scientist			
Radioactive materials license number			
Employer address (number, street) Michigan State University		City E. Lansing	State Mi
ZIP code 48823		Date	

b. Indicate the facilities and operations where training was received and refer to Part 3.a. when answering the following:

- Laboratories using radiochemicals
- Restricted area laboratories
- Glove boxes
- Field operations
- Environmental applications
- Other (please describe): _____

c. Radioactive materials previously used. Identify typical radioisotopes in appropriate box and refer to Part 3.a. on page 1:

	QUANTITIES HANDLED			
	(a) Microcuries	(b) Millicuries	(c) Curies	(d) Kilocuries
(1) Sealed sources	^{60}Co			
(2) Unsealed Alpha emitters				
(3) Unsealed beta-gamma emitters				
(4) Neutron sources	^{252}Cf			

d. Describe the procedures similar to those proposed in which you have had experience. Indicate months or years for each and refer to Part 3.a. on page 1.

a (1) use of 9 MeV neutron source and 9 MeV x-ray source
 a (2), a (3) use of 9 MeV neutron source
 a (4) use of a high energy heavy ion cyclotron

4. Certificate

The information you are asked to provide on this form is requested by the California Department of Public Health, Radiologic Health Branch. This notice is required by Section 1798.17 of the Information Practices Act of 1977 (Code of Civil Procedure, Section 1798-1798.76) and the Federal Privacy Act to be provided whenever an agency requests personal or confidential information from any individual. It is mandatory that you furnish the information requested on this form. Failure to furnish the requested information may result in an inaccurate determination of statements and/or disapproval of your application.

I hereby certify that all information contained in this statement is true and correct.

Signature of proposed user: John Stee Date: 9/13/10