



Docket:  
030-38399

October 22, 2010

Samuel J. Collins,  
Regional Administrator  
U.S. Nuclear Regulatory Commission  
Region IV  
612 E. Lamar Blvd., Suite 400  
Arlington, TX 76011-4125

RE: New Special Nuclear Materials License Application

Dear Mr. Collins:

Enclosed please find our application for a new NRC license for special nuclear materials in excess of criticality limits.

Rapiscan Laboratories, Inc, will be performing testing of radiation detection systems for locating Special Nuclear Materials under a project sponsored by the Domestic Nuclear Detection Office of the Department of Homeland Security. The materials requested will be used for the purpose of testing the capabilities of these detection systems.

We respectfully request expeditious review of this amendment request as it is directly related to national security.

If you have any questions please call me at +1-310-349-2494 or email me at [mabdu@rapiscansystems.com](mailto:mabdu@rapiscansystems.com).

Sincerely,

A handwritten signature in black ink, appearing to read "Mershad A. Shahabidin".

Mershad A. Shahabidin  
Radiation Safety Officer

MC #: 573 980

<b>NRC FORM 313</b> (3-2009) 10 CFR 30, 32, 33, 34, 35, 36, 39, and 40	<b>U.S. NUCLEAR REGULATORY COMMISSION</b>	<b>APPROVED BY OMB: NO. 3150-0120</b>  <b>EXPIRES: 3/31/2012</b>				
<h2 style="margin: 0;">APPLICATION FOR MATERIALS LICENSE</h2>						
Estimated burden per response to comply with this mandatory collection request: 4.3 hours. Submittal of the application is necessary to determine that the applicant is qualified and that adequate procedures exist to protect the public health and safety. Send comments regarding burden estimate to the Records and FOIA/Privacy Services Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to <a href="mailto:infocollects.resource@nrc.gov">infocollects.resource@nrc.gov</a> , and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0120), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.						
<b>INSTRUCTIONS: SEE THE APPROPRIATE LICENSE APPLICATION GUIDE FOR DETAILED INSTRUCTIONS FOR COMPLETING APPLICATION. SEND TWO COPIES OF THE ENTIRE COMPLETED APPLICATION TO THE NRC OFFICE SPECIFIED BELOW.</b>						
<b>APPLICATION FOR DISTRIBUTION OF EXEMPT PRODUCTS FILE APPLICATIONS WITH:</b>  OFFICE OF FEDERAL & STATE MATERIALS AND ENVIRONMENTAL MANAGEMENT PROGRAMS DIVISION OF MATERIALS SAFETY AND STATE AGREEMENTS U.S. NUCLEAR REGULATORY COMMISSION WASHINGTON, DC 20555-0001	<b>IF YOU ARE LOCATED IN:</b>  ILLINOIS, INDIANA, IOWA, MICHIGAN, MINNESOTA, MISSOURI, OHIO, OR WISCONSIN, SEND APPLICATIONS TO:  MATERIALS LICENSING BRANCH U.S. NUCLEAR REGULATORY COMMISSION, REGION III 2443 WARRENVILLE ROAD, SUITE 210 Lisle, IL 60532-4352					
<b>ALL OTHER PERSONS FILE APPLICATIONS AS FOLLOWS:</b>  <b>IF YOU ARE LOCATED IN:</b>  ALABAMA, CONNECTICUT, DELAWARE, DISTRICT OF COLUMBIA, FLORIDA, GEORGIA, KENTUCKY, MAINE, MARYLAND, MASSACHUSETTS, NEW HAMPSHIRE, NEW JERSEY, NEW YORK, NORTH CAROLINA, PENNSYLVANIA, PUERTO RICO, RHODE ISLAND, SOUTH CAROLINA, TENNESSEE, VERMONT, VIRGINIA, VIRGIN ISLANDS, OR WEST VIRGINIA, SEND APPLICATIONS TO:  LICENSING ASSISTANCE TEAM DIVISION OF NUCLEAR MATERIALS SAFETY U.S. NUCLEAR REGULATORY COMMISSION, REGION I 475 ALLENDALE ROAD KING OF PRUSSIA, PA 19406-1415	ALASKA, ARIZONA, ARKANSAS, CALIFORNIA, COLORADO, HAWAII, IDAHO, KANSAS, LOUISIANA, MISSISSIPPI, MONTANA, NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON, PACIFIC TRUST TERRITORIES, SOUTH DAKOTA, TEXAS, UTAH, WASHINGTON, OR WYOMING, SEND APPLICATIONS TO:  NUCLEAR MATERIALS LICENSING BRANCH U.S. NUCLEAR REGULATORY COMMISSION, REGION IV 612 E. LAMAR BOULEVARD, SUITE 400 ARLINGTON, TX 76011-4125					
<b>PERSONS LOCATED IN AGREEMENT STATES SEND APPLICATIONS TO THE U.S. NUCLEAR REGULATORY COMMISSION ONLY IF THEY WISH TO POSSESS AND USE LICENSED MATERIAL IN STATES SUBJECT TO U.S. NUCLEAR REGULATORY COMMISSION JURISDICTIONS.</b>						
1. THIS IS AN APPLICATION FOR (Check appropriate item) <input checked="checked" type="checkbox"/> A. NEW LICENSE <input type="checkbox"/> B. AMENDMENT TO LICENSE NUMBER _____ <input type="checkbox"/> C. RENEWAL OF LICENSE NUMBER _____	2. NAME AND MAILING ADDRESS OF APPLICANT (Include ZIP code)  <b>Rapiscan Laboratories, Inc.</b> <b>520 Almanor Ave.</b> <b>Sunnyvale, CA 94085-3533</b>					
3. ADDRESS WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED  <b>1451 Loveridge Rd.</b> <b>Pittsburg, CA 94565</b>	4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION  <b>Mershad A. Shahabidin</b>  TELEPHONE NUMBER  <b>(310) 349-2494</b>					
SUBMIT ITEMS 5 THROUGH 11 ON 8-1/2 X 11" PAPER. THE TYPE AND SCOPE OF INFORMATION TO BE PROVIDED IS DESCRIBED IN THE LICENSE APPLICATION GUIDE.						
5. RADIOACTIVE MATERIAL a. Element and mass number; b. chemical and/or physical form; and c. maximum amount which will be possessed at any one time.	6. PURPOSE(S) FOR WHICH LICENSED MATERIAL WILL BE USED.					
7. INDIVIDUAL(S) RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR TRAINING EXPERIENCE.	8. TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS.					
9. FACILITIES AND EQUIPMENT.	10. RADIATION SAFETY PROGRAM.					
11. WASTE MANAGEMENT.	12. LICENSE FEES (See 10 CFR 170 and Section 170.31) <table style="width: 100%; border: none;"> <tr> <td style="border: none;">FEE CATEGORY</td> <td style="border: none;">1C</td> <td style="border: none;">AMOUNT ENCLOSED</td> <td style="border: none;">\$ 1,500.00</td> </tr> </table>		FEE CATEGORY	1C	AMOUNT ENCLOSED	\$ 1,500.00
FEE CATEGORY	1C	AMOUNT ENCLOSED	\$ 1,500.00			
13. CERTIFICATION. (Must be completed by applicant) THE APPLICANT UNDERSTANDS THAT ALL STATEMENTS AND REPRESENTATIONS MADE IN THIS APPLICATION ARE BINDING UPON THE APPLICANT.  THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATION ON BEHALF OF THE APPLICANT, NAMED IN ITEM 2, CERTIFY THAT THIS APPLICATION IS PREPARED IN CONFORMITY WITH TITLE 10, CODE OF FEDERAL REGULATIONS, PARTS 30, 32, 33, 34, 35, 36, 39, AND 40, AND THAT ALL INFORMATION CONTAINED HEREIN IS TRUE AND CORRECT TO THE BEST OF THEIR KNOWLEDGE AND BELIEF.  WARNING: 18 U.S.C. SECTION 1001 ACT OF JUNE 25, 1948 62 STAT. 749 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION.						
CERTIFYING OFFICER - TYPED/PRINTED NAME AND TITLE <b>Mike Gray, Director of Radiation Safety and Compliance</b>	SIGNATURE 	DATE <b>10. 29. 10</b>				
<b>FOR NRC USE ONLY</b>						
TYPE OF FEE	FEE LOG	FEE CATEGORY	AMOUNT RECEIVED \$	CHECK NUMBER	COMMENTS	
APPROVED BY				DATE		

Rapiscan Laboratories, Inc. Application for an NRC Special Nuclear Material License

SUBMIT ITEMS 5 THROUGH 11 ON 8-1/2 X 11" PAPER. THE TYPE AND SCOPE OF INFORMATION TO BE PROVIDED IS DESCRIBED IN THE LICENSE APPLICATION GUIDE.

**5. RADIOACTIVE MATERIAL**

a. Element and mass number;

Pu-239

U-235/U-238

b. chemical and/or physical form;

Sealed sources in solid form

c. maximum amount which will be possessed at any one time.

Please see Attachment A for the list of radioactive sources and quantities we wish to possess. All of these are sealed sources.

Please see Attachment B for technical details on the Highly Enriched Uranium (HEU) and Pu sources we wish to possess.

**6. PURPOSE(S) FOR WHICH LICENSED MATERIAL WILL BE USED**

The materials requested for use under this license will be used for performance testing of radiation detection systems for locating Special Nuclear Materials under a project sponsored by the Domestic Nuclear Detection Office of the Department of Homeland Security.

A linear accelerator will be used during these tests, and we have applied for registration with the California Department of Public Health, Radiological Health branch.

**7. INDIVIDUAL(S) RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR TRAINING EXPERIENCE.**

Mershad A. Shahabidin is our radiation safety officer. He has recently been appointed the RSO for the Pittsburgh, California and Sunnyvale, California sites and is currently the alternate RSO on the existing license. He is a US citizen.

Please see Attachment C for a copy of his resume and RSO training certificate.

**8. TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS.**

Radioactive materials shall be used by, or under the supervision of the following individuals:

Cathie Condron  
Craig M. Brown  
Michael King  
Marshall Elsalim  
Ed Franco  
Timothy Shaw  
John Stevenson

Enclosed are details regarding all authorized users and their training and experience. This information is submitted on CA form RH 2050A as Attachment D.

Initial and annual radiation safety refresher training shall be provided and documented.

Training shall include the following topics:

- Radiation protection principles;
- Characteristics of ionizing radiation;
- Units of radiation dose and quantities;
- Radiation detection instrumentation;
- Biological hazards of exposure to radiation (appropriate to the types and forms of special nuclear material to be used);
- Hands-on use of radioactive materials.

This training is in addition to job specific training which will be provided.

#### 9. FACILITIES AND EQUIPMENT.

The facility in Pittsburg, CA is a former US Navy building, which at one time housed a 25 MeV Betatron. It is a concrete structure with 4 foot thick walls up to 15 feet, and 2.5 foot thick walls from 15 feet to 37 feet. There is a 100 ton concrete door to seal the cargo entrance. See Attachment F for the facility diagram.

[REDACTED]

Radioactive materials are stored in a separate room from where testing experiments will take place. The area Radioactive Materials are stored will be posted: CAUTION, RADIOACTIVE MATERIALS. This is in addition to other radiation area postings.

Enclosed is a diagram showing the locations where radioactive materials will be used at the Pittsburgh Site and the Sunnyvale Site. See Attachment E.

#### 10. RADIATION SAFETY PROGRAM.

Attachment F is a copy of our radiation safety manual for the Pittsburgh site. We are currently in the process of revising and updating the radiation safety manual for the Sunnyvale Site. We will forward you a copy once it is completed.

We issue dosimetry to employees which is changed at monthly intervals. Our current dosimetry provider is Mirion Technologies. We commit to using a NVLAP accredited dosimetry provider.

We commit to having an adequate amount of survey meters onsite in good working condition with detection capabilities for the radiation hazards involved, including neutron detectors. Instruments are calibrated to ANSI standards by a licensed calibration company on an annual basis, at staggered intervals.

List of Survey Equipment available at Pittsburgh site:

Photon:

Bicron Model RSO-5, Quantity: 1

MGP Instruments Model DMC 2000GN, Quantity: 3

Neutron, one of the following:

Canberra Model AN/PDR-70 (Snoopy NP-2)

Ludlum Survey Meter Model 12-4

Attachment G is a list of survey equipment available at the Sunnyvale site. Equipment used at the Pittsburgh site is part of Sunnyvale's inventory.

#### 11. WASTE MANAGEMENT.

We will not produce radioactive waste as part of our routine operations. In the event that we generate waste we shall store it at the Sunnyvale site for disposal by a licensed radioactive waste broker.

#### 12. INCREASED CONTROLS

Rapiscan's Sunnyvale facility is under the Increased Controls Requirements implemented by the California Radiological Health Branch and satisfies these requirements for their current license #2484-43.

Please see Attachment H-Increased Controls Procedures

**Summary of Attachments:**

**Attachment A-list of radioactive sources and quantities to be possessed**

**Attachment B- technical details on the Highly Enriched Uranium (HEU) and Pu sources to be possessed.**

**Attachment C- RSO resume an training certificate.**

**Attachment D- Authorized users' training and experience**

**Attachment E- Diagrams showing the locations where radioactive materials will be used at the Pittsburgh Site and the Sunnyvale Site**

**Attachment F Radiation safety manual for the Pittsburg site**

**Attachment G List of available survey equipment**

**Attachment H Increased Controls Procedures**