Docket:
070-07021

Rapiscan® systems
An OSI Systems Company

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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 .

Sincerely,

Mershad Shahabidin

Mershad A. Shahabidin
Radiation Safety Officer

MC#: 573983

NRC FORM 313 **U.S. NUCLEAR REGULATORY COMMISSION**
(3-2009)
10 CFR 30, 32, 33,
34, 35, 36, 39, and 40

APPLICATION FOR MATERIALS LICENSE

APPROVED BY OMB: NO. 3150-0120 **EXPIRES: 3/31/2012**

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 infocollects.resource@nrc.gov, 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.

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.

APPLICATION FOR DISTRIBUTION OF EXEMPT PRODUCTS FILE APPLICATIONS WITH:

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

ALL OTHER PERSONS FILE APPLICATIONS AS FOLLOWS:

IF YOU ARE LOCATED IN:

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

IF YOU ARE LOCATED IN:

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

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

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.

1. THIS IS AN APPLICATION FOR *(Check appropriate item)*

- [x] A. NEW LICENSE
- [ ] B. AMENDMENT TO LICENSE NUMBER _____
- [ ] C. RENEWAL OF LICENSE NUMBER _____

2. NAME AND MAILING ADDRESS OF APPLICANT *(Include ZIP code)*

Rapiscan Laboratories, Inc.
520 Almanor Ave.
Sunnyvale, CA 94085-3533

3. ADDRESS WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED

1451 Loveridge Rd.
Pittsburg, CA 94565

520 Almanor Ave.
Sunnyvale, CA 94085-3533

4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION

Mershad A. Shahabidin

TELEPHONE NUMBER

(310) 349-2494

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. maiximum 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)*
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 CONTANED 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	SIGNATURE	DATE
Mike Gray, Director of Radiation Safety and Compliance		10.29.10

FOR NRC USE ONLY

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.

The building is secured by 1) a fence which is padlocked, 2) the exterior door to the facility which is padlocked, 3) two interior doors which are padlocked, and 4) the 100 ton concrete door which may only be opened from inside the facility, and 5) an alarm system. Only authorized users or persons accompanied by authorized users will be allowed inside the facility.

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 Pittsburg 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 Pittsburg 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 Pittsburg 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

Rapiscan systems
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February 9, 2011

Mary Adams
Senior Project Manager
Fuel Manufacturing Branch
Division of Fuel Cycle Safety and Safeguards
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

RE: Request to amend current application for use of Special Nuclear Materials

Dear Ms. Adams:

Rapiscan Laboratories hereby requests an amendment to original application for the use of special nuclear materials to add Uranium Oxide Samples and one additional HEU puck for a total of two pucks to our pending special nuclear materials application. Details on these sources are as follows:

Uranium Oxides

UO_2

› enriched (LEU) UO_2 contained in a sealed canister diameter and cm thick. The mass of the contained U235 is . The UO_2 is not in an unsealed state and is
not dispersible.

At no time will Rapiscan have in their possession more than of the UO_2 canisters.

U_3O_8

(LEU) enriched U_3O_8 contained in a sealed canister iameter by thick. The mass of the U235 is . The U_3O_8 is not in an unsealed state and is not dispersible.

At no time will Rapiscan have in our possession more than ten (10) of the U_3O_8 canisters.

2805 Columbia St. Torrance, California 90503 USA
Telephone +1 310-978-1457 Facsimile +1 310-349-2491
www.rapiscansystems.com

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HEU

The additional HEU source is of the same construction as the one in our original application: enriched, ' diameter x '' titanium cover, manufactured by Y-12.

This change is being made in response to a request from the Department of Homeland Security, Domestic Nuclear Detection Office (DNDO) in regards to the experiments we intend to perform for them, and we appreciate your consideration in making this change.

If you have any questions please call me at 310.349.2494 or email me at Mabdu@rapiscansystems.com .

Sincerely,

Mershad Shahabidin

Mershad Shahabidin
Radiation Safety Officer

2805 Columbia St. Torrance, California 90503 USA
Telephone +1 310-978-1457 Facsimile +1 310-349-2491
www.rapiscansystems.com