

IMPORT AND EXPORT LICENSE

NRC FORM 250P



United States of America
Nuclear Regulatory Commission
Washington, D.C. 20555

NRC LICENSE NO.: **PCB6.07**

LICENSE EXPIRES: **October 1, 2017**

Page 1 of 5

Pursuant to the Atomic Energy Act of 1954, as amended, and the regulations issued by the Nuclear Regulatory Commission (NRC) pursuant thereto, and in reliance on statements and representations heretofore made by the applicant/licensee, this license is hereby issued authorizing the licensee to import and/or export the byproduct materials listed below, subject to the terms and conditions herein. This license is only valid if the licensee maintains the requisite NRC or Agreement State domestic licenses.

<p align="center">LICENSEE</p> <p>Alpha-Omega Services, Inc. ATTN: Troy Hedger 9156 Rose Street Bellflower, CA 90706</p> <p>APPLICANT'S REFERENCE: AMD 7 Request</p>	<p align="center">ULTIMATE FOREIGN CONSIGNEE(S)</p> <p align="center">Listed on Page 3</p>
<p align="center">INTERMEDIATE FOREIGN AND/OR DOMESTIC CONSIGNEE(S)</p> <p align="center">NONE</p>	<p align="center">OTHER PARTY(IES) TO EXPORT/IMPORT</p> <p align="center">Listed on Pages 3 through 5</p> <p align="center">(Supplier/Recipient)</p>

COUNTRY(IES) OF ULTIMATE DESTINATION: Canada, Japan and United States

DESCRIPTION OF 10 CFR PART 110, APPENDIX P, BYPRODUCT MATERIALS TO BE IMPORTED AND/OR EXPORTED
(NOTE: SEE PAGE 2 FOR DEFINITIONS OF CATEGORY 1 AND CATEGORY 2)

Import and export, from and to Canada, Category 1 quantities of cobalt-60 (not to exceed 244.2 TBq per shipment), contained in sealed sources used in medical teletherapy devices, is authorized. **For exports, see conditions on Page 3.**

Import and export, from and to Japan, Category 2 quantities of iridium-192, contained in sealed sources used in medical brachytherapy devices, is authorized.

Licensee is responsible for ensuring that all end users of cobalt-60 sources and iridium-192 sources have obtained and hold valid and appropriate material possession licenses prior to receipt of any sealed sources containing radioactive material(s). Licensee, if not already submitted with your application, must submit information required by 10 CFR §110.32(d) and pertinent documentation required by 10 CFR §110.32(h) at least **24 hours prior to shipment**. See Page 2 for Mandatory Pre-shipment Notifications.

License expiration is based on expiration of California Material Possession License No. 3925-19, Amendment 37. This license replaces CBP6.06 to revise the activity limit of cobalt-60, revise conditions and to add additional parties to the license.

Neither this license nor any right under this license shall be assigned or otherwise transferred in violation of the provisions of the Atomic Energy Act of 1954, as amended.

This license is subject to the right of recapture or control by Section 108 of the Atomic Energy Act of 1954, as amended, and to all of the other provisions of said Act, now or hereafter in effect and to all valid rules and regulations of NRC.

THIS LICENSE IS INVALID UNLESS SIGNED BELOW
BY AUTHORIZED NRC REPRESENTATIVE

Margaret M. Doane
NAME AND TITLE: Margaret M. Doane, Director
Office of International Programs

DATE OF ISSUANCE: **March 5, 2009**

MANDATORY NOTIFICATIONS: Notifications required by 10 CFR 110.50(b)(4) are to be emailed to hoo.hoc@nrc.gov (preferred method) or faxed to 301-816-5151. In the subject line of the email or on the fax cover page include: "10 CFR 110.50(b)(4) Notification." To contact someone in the Operations Center, use the same e-mail address or call 301-816-5100. Difficulties notifying the U.S. Nuclear Regulatory Commission must be promptly reported to the Office of International Programs' import/export licensing staff at 301-415-2342 or 415-3329.

For international notifications see <http://www-ns.iaea.org/downloads/rw/imp-export/import-export-contact-points.pdf>.

Table 1: Appendix P to Part 110—Category 1 and Category 2 Radioactive Material Threshold Limits

Radioactive Material	Category 1		Category 2	
	Terabequerels (TBq)	Curies (Ci) ¹	Terabequerels (TBq)	Curies(Ci) ¹
Americium-241	60	1,600	0.6	16
Americium-241/Beryllium	60	1,600	0.6	16
Californium-252	20	540	0.2	5.4
Curium-244	50	1,400	0.5	14
Cobalt-60	30	810	0.3	8.1
Cesium-137	100	2,700	1.0	27
Gadolinium-153	1,000	27,000	10.0	270
Iridium-192	80	2,200	0.8	22
Plutonium-238 ²	60	1,600	0.6	16
Plutonium-239/Beryllium ²	60	1,600	0.6	16
Promethium-147	40,000	1,100,000	400	11,000
Radium-226 ³	40	1,100	0.4	11
Selenium-75	200	5,400	2.0	54
Strontium-90 (Y-90)	1,000	27,000	10.0	270
Thulium-170	20,000	540,000	200	5,400
Ytterbium-169	300	8,100	3.0	81

Calculation of Shipments Containing Multiple Sources or Radionuclides:

The "sum of fractions" methodology for evaluating combinations of radionuclides being transported is to be used when import or export shipments contain multiple sources or multiple radionuclides. The threshold limit values used in a sum of the fractions calculation must be the metric values (i.e., TBq).

I. If multiple sources and/or multiple radionuclides are present in an import or export shipment, the sum of the fractions of the activity of each radionuclides must be determined to verify the shipment is less than the Category 1 or 2 limits of Table 1, as appropriate. If the calculated sum of the fractions ratio, using the following equation, is greater than or equal to 1.0, then the import or export shipment exceeds the threshold limits of Table 1 and the applicable security provisions of this part apply.

II. Use the equation below to calculate the sum of the fractions ratio by inserting the actual activity of the applicable radionuclides or of the individual sources (of the same radionuclides) in the numerator of the equation and the corresponding threshold activity limit from the Table 1 in the denominator of the equation. Ensure the numerator and denominator values are in the same units and all calculations must be performed using the TBq (i.e., metric) values of Table 1.

R1 = activity for radionuclides or source number 1
R2 = activity for radionuclides or source number 2
RN = activity for radionuclides or source number n

AR1 = activity limit for radionuclides or source number 1
AR2 = activity limit for radionuclides or source number 2
ARN = activity limit for radionuclides or source number n

$$\sum_1^n \left[\frac{R_1}{AR_1} + \frac{R_2}{AR_2} + \frac{R_n}{AR_n} \right] \geq 1$$

¹ The values to be used to determine whether a license is required are given in TBq. Curie (Ci) values are provided for practical usefulness only and are rounded after conversion.

² The limits for Pu-238 and Pu-239/Be in this table apply for imports to the U.S. The limits for exports of Pu-238 and Pu-239/Be can be found in § 110.21.

³Discrete sources of Radium-226.

ULTIMATE FOREIGN CONSIGNEE(S)
(Brokers and Suppliers)

For import and export of 10 CFR §110 Appendix P, Category 1 quantities of cobalt-60

MDS Nordion
447 March Road
Ottawa, Ontario
K2K 1X8
Canada

For import and export of 10 CFR §110 Appendix P, Category 2 quantities of iridium-192

Japan Radioisotope Association (JRIA)
28-45 Honkomagome 2-Chome, Bunkyo-Ku
Tokyo 113-8941
Japan

**CONDITIONS, NOTES, AND DESCRIPTIONS OF 10 CFR PART 110, APPENDIX P,
BYPRODUCT MATERIALS TO BE IMPORTED AND/OR EXPORTED**

Alpha-Omega Services, Inc is prohibited from shipping 10 CFR §110 Appendix P Category 1 quantities of cobalt-60 to Canada until:

[1] Alpha-Omega Services, Inc has requested the U.S. Nuclear Regulatory Commission (NRC) in writing to obtain specific consent from the importing country's regulatory authority, on a case-by-case basis;

[2] NRC has received and considered government-to-government consent pursuant to 10 CFR §110.42(e)(3); and,

[3] NRC has informed Alpha-Omega Services, Inc in writing, that it is authorized to ship the materials to the ultimate consignee specified.

OTHER PARTY(IES) TO IMPORT/EXPORT

Alpha-Omega Services, Inc.
1282 Starks Road
Edgerly, LA 70668

Deaconess Medical Center
West 910 5th Avenue, Suite 100
Spokane, WA 99204

Baylor All Saints Medical Center Fort Worth
1400 Eighth Ave.
Fort Worth, TX 76132

Doctors Hospital
5000 University Drive
Coral Gables, FL 33146

Caelian Medical, LLC
800 Century Drive
Mechanicsburg, PA 17055

Froedtert Memorial Lutheran Hospital
9200 Wisconsin Avenue
Milwaukee, WI 53226

Cooper Health System
Robert Wood Johnson Medical School at
Camden
3 Cooper Plaza
Camden, NJ 08103

The Gamma Knife Center
Northwestern Memorial Hospital
250 E. Superior Street
Chicago, IL 60611

The Gamma Knife Radiosurgery Center
University of Arkansas for Medical Science
4301 West Markham Street
Little Rock, AR 72205

Gamma Knife of St. Louis
Barnes Jewish Hospital
216 S. Kings Highway Boulevard
St. Louis, MO 63110

Gamma Knife Center at Kettering Medical
Center
3535 Southern Blvd.
Kettering, OH 45429

Gamma Knife Center of St. Joseph's
Hospital of Atlanta
5665 Peachtree Dunwoody Road
Atlanta, GA 30342

Indiana University Medical Center
541 Clinical Drive
Indianapolis, IN 46206

John D. Archbold Memorial Hospital
116 Mimosa Dr.
Thomasville, GA 31792

MD Anderson Cancer Center
1515 Holcombe Blvd.
Houston, TX 77030

Memorial Hermann the Woodlands
9250 Pinecroft Drive
Shenandoah, TX 77380

Mercy Gamma Knife Center of Long Island
Mercy Medical Center
1000 North Village Avenue
Rockville Center, NY 11570

Neurologic & Orthopedic of Chicago
4501 N. Winchester
Chicago, IL 60640

New England Gamma Knife Center
593 Eddy Street
Providence, RI 02903

The New Jersey Neuroscience Institute
at JFK Medical Center
65 Jamer Street
Edison, NJ 08818

New York University Medical Center
560 First Avenue
New York, NY 10016

Northwest Hospital
1560 North 115th Street
Seattle, WA 98133

OSF Saint Francis Medical Center
530 NE Glen Oak Avenue
Peoria, IL 61637

Presbyterian Hospital of Dallas Gamma
Knife
8200 Walnut Hill Lane
Dallas, TX 75231

Providence Portland Medical Center
4805 NE Glisan
Portland, OR 97213

Puerto Rico Medical Center
Intersection Moncillaos Ward
Rio Piedras
San Juan, Puerto Rico 00922

Richland Memorial Hospital
7 Medical Park
Columbia, SC 29203

Rocky Mountain Gamma Knife Center
4231 W.16th St.
Denver, CO 80204

Roswell Park Cancer Institute
Elm & Carlton Street
Buffalo, NY 14263

St. Joseph Hospital
611 St. Joseph Avenue
Marshfield, WI 54449

UC Davis Cancer Center
4501 X Street, G126
Sacramento, CA 95817

St. Luke's Medical Center
2900 West Oklahoma Avenue
Milwaukee, WI 53201

University Hospital of Cleveland
11100 Euclid Avenue
Cleveland, OH 44106

San Antonio Hospital
999 San Bernardino Road
Upland, CA 91786

University of Kentucky Hospital
102 Animal Pathology
Lexington, KY 40536

Sierra Medical Center
1625 Medical Center Drive
El Paso, TX 79902

University of Oklahoma
Gamma Knife Center
700 NE 13th St.
Oklahoma City, OK 73104

Skyline Medical Center
3444 Dickerson Pike
Nashville, TN 37207

USC University Hospital
1500 San Pablo Street
Los Angeles, CA 90033

SUNY Upstate Medical University
750 East Adams Street
Syracuse, NY 13210

Wake Forest University School of
Medicine & NC Baptist Hospital
Medical Center Boulevard
Winston-Salem, NC 27157

Sutter Medical Center
5151 F Street
Sacramento, CA 95602

Washington Hospital Center
110 Irving Street, NW
Washington, D.C. 20010

Terrebonne General Medical Center
8166 Main St.
Houma, LA 70360

West Virginia University Hospital
One Medical Center Drive
Morgantown, WV 26506

UAB Highlands Hospital
1201 11th Avenue South
Birmingham, AL 35205

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