

EXPORT LICENSE

NRC FORM 250

NRC LICENSE NO.: PXB6.42

Page 1 of 9

NRC DOCKET NO.: 11006027

LICENSE EXPIRES: March 31, 2032



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

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 export of the byproduct materials listed below, subject to the terms and conditions herein. This license is only valid if the licensee or 'Other Party (ies) to Export' maintain the requisite NRC or Agreement State domestic license(s).

<p align="center">LICENSEE</p> <p>Alpha-Omega Services, Inc. 1282 Bigwoods-Starks Road Vinton, LA 70668</p> <p>Attn: Carl Tunnell</p>	<p align="center">ULTIMATE CONSIGNEE(S) IN FOREIGN COUNTRY(IES)</p> <p align="center">See following page(s)</p>
<p align="center">INTERMEDIATE CONSIGNEE(S) IN FOREIGN COUNTRY(IES)</p> <p align="center">None</p>	<p align="center">OTHER U.S. PARTY(IES) TO EXPORT</p> <p align="center">See following page(s)</p>
<p>APPLICANT'S REFERENCE: Amendment 42</p>	<p>ULTIMATE DESTINATIONS: See following page.</p>

**DESCRIPTIONS OF 10 CFR PART 110, APPENDIX P,
BYPRODUCT TO BE EXPORTED, INCLUDING CONDITIONS AND NOTES**
(NOTE: SEE PAGE 2 FOR DEFINITIONS OF CATEGORY 1 AND CATEGORY 2)

Export to Canada and Sweden, of Category 1 quantities of Co-60 (not to exceed 244.2 terabecquerels per shipment), contained in sealed sources to authorized recipient for recycling and/or end of life-cycle management.

Export to Japan, of Category 2 quantities of Ir-192, contained in sealed sources for use in medical brachytherapy devices, is authorized.

Licensee is responsible for compliance with all applicable export, and other domestic regulatory requirements, including all terms and conditions of domestic material possession licenses.

Licensee, if not already submitted with your application, must submit pertinent documentation required by 10 CFR 110.32(g) at least 24 hours prior to shipment. See Page 9 for Mandatory Advanced Notifications.

This license replaces PXB6.41 amending its authority by revising the list of "Other U.S. Parties to Export".

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 the other provisions of said Acts, now or hereafter in effect and to all valid rules and regulations of the Nuclear Regulatory Commission.

**THIS LICENSE IS INVALID UNLESS SIGNED BELOW
BY AUTHORIZED NRC REPRESENTATIVE**

NAME AND TITLE: Sabrina D. Atack Digitally signed by Sabrina D. Atack
Date: 2023.07.25 16:21:04 -04'00'
**Sabrina D. Atack, Deputy Director
Office of International Programs**

DATE OF ISSUANCE: July 25, 2023

EXPORT LICENSE

CONDITIONS

Licensee is prohibited from shipping 10 CFR Part 110 Appendix P Category 1 quantities of Co-60 to Canada for which government-to-government consent has not yet been requested, received, and processed until the following actions are taken:

1. The licensee submits a consent request to the NRC with pertinent details for a specific shipment of series of shipments on the NRC Form 7, which notifies the NRC to request and obtain consent for the specified transaction(s) from the importing country's regulatory authority;
2. The NRC receives and considers the consent from the importing country's regulatory authority pursuant to 10 CFR 110.42(e)(3); and
3. The NRC has informed the licensee in writing, that the consent request has been granted and it is authorized to ship the materials to the ultimate consignee(s) specified on the NRC Form 7 consent request.

ULTIMATE CONSIGNEE(S) IN FOREIGN COUNTRY(IES) Continued:

1. **(For export of 10 CFR Part 110 Appendix P, Category 1 quantities of Co-60)**

Nordion (Canada) Inc.
447 March Road
Ottawa, Ontario K2K 1X8
Canada
2. **(For the export of 10 CFR Part 110 Appendix P, Category 2 quantities of Ir-192)**

Japan Radioisotope Association (JIRA)
28-45 Honkomagome 2-Chome
Bunkyo-Ku, Tokyo 113-8941
Japan
3. **(For export of 10 CFR Part 110 Appendix P, Category 1 quantities of Co-60)**

Studsvik Nuclear AB
Atomvagen 1
611 82 Nykoping
Sweden

OTHER U.S. PARTY(IES) EXPORT Continued:

1. Adventist Health Systems/Sunbelt Inc.
Florida Hospital Plaza
2501 N. Orange Avenue
Orlando, FL 32803
2. Akron General Medical Center
762 South Cleveland Massillon Road
Montrose, OH 44333
3. Alexian Brothers Medical Center
800 West Biesterfield Road
Elk Grove Village, IL 60007
4. Alpha-Omega Services, Inc.
1282 Big Woods-Starks Road
Vinton, LA 70668
5. Anchorage Radiation Oncology Management, Inc.
d/b/a Anchorage Radiation Therapy Center
2841 Debarr Road, Suite 100
Anchorage, AK 99508
6. Augusta University Medical Center
1120 15th Street
Augusta, GA 30912
7. Aurora Health Care Metro, Inc.
d/b/a Aurora St. Luke's Medical Center,
Room 115, Gamma Knife Department
2900 West Oklahoma Avenue
Milwaukee, WI 53215
8. Avera McKennan - Avera Radiation Oncology
Avera Cancer Institute
Prairie Center 1000 East 23rd St.
Suite 100, Room 2
Sioux Falls, SD 57105

OTHER U.S.PARTY(IES) TO EXPORT Continued:

9. Baptist Hospital of Miami, Inc.
Department of Radiation Oncology
8900 North Kendall Drive
Miami, FL 33176
10. Billings Clinic
2800 Tenth Avenue North
Billings, MT 59101
11. Bryan Medical Center
2300 South 16th Street
Lincoln, NE 68502
12. Center for Advanced Medicine
Long Island Jewish Medical Center
450 Lakeville Road
Lake Success, NY 11042
13. Central DuPage Hospital Association
Northwestern Medicine Cancer Center
Central DuPage Hospital, 4405 Weaver
Parkway
Warrenville, IL 60555
14. Chesapeake Regional Riverside &
University of Virginia Radiosurgery Center
500 J Clyde Morris Boulevard
Newport News, VA 23601
15. Chippenham and Johnston-Willis Hospitals,
Inc.
d/b/a CJW Medical Center, Johnston-Willis
Campus
1401 Johnston-Willis Drive
Richmond, VA 23235
16. Cooper Health System
Robert Wood Johnson Medical School at
Camden
3 Cooper Plaza
Camden, NJ 08103
17. Covenant Health System
Covenant Gamma Southwest
3603 21st Street
Lubbock, TX 79410
18. Dignity Health d/b/a
St. Joseph's Hospital and Medical Center
350 West Thomas Road
Phoenix, AZ 85013
19. Doctors Hospital, Inc.
d/b/a Doctors Hospital
5000 University Drive
Coral Gables, FL 33146
20. Emory Saint Joseph's Hospital
5665 Peachtree Dunwoody Road, NE
Atlanta, GA 30342
21. Fort Sanders Regional Gamma Knife Center
1915 White Avenue
Knoxville, TN 37916
22. Gamma Knife Center of the Pacific
2226 Liliha Street, Level B2
Honolulu (Island of Oahu), HI 96817
23. GE-Hitachi Nuclear Energy Americas, LLC
Vallecitos Nuclear Center
6705 Vallecitos Road
Pleasanton, CA 94586
24. GKMD, Inc.
Deaconess Medical Center
Gamma Knife Suite
Basement Floor, Room 117
910 West 5th Ave.
Spokane, WA 99204
25. Hackensack University Medical Center
John Theurer Cancer Center
92 2nd St.
Hackensack, NJ 07601
26. Harborview Medical Center
325 9th Avenue
Gamma Knife Suite
Seattle, WA 98133
27. Hoag Memorial Hospital Presbyterian
One Hoag Drive
Newport Beach, CA 92658
28. Indiana University Health Methodist
Hospital 1701 N. Senate Blvd
Indianapolis, IN 46202

OTHER U.S.PARTY(IES) TO EXPORT Continued:

29. Intermountain Medical Center
Jon and Karen Huntsman Cancer Center
Gamma Knife Room, 5121 South
Cottonwood Street
Murray, UT 84157
30. Jewish Hospital, LLC.
4777 East Galbraith Road
Cincinnati, OH 45236
31. John F. Kennedy Medical Center
65 James Street
Edison, NJ 08818
32. Karmanos Cancer Center
Gershenson Radiation Oncology Center,
Room 379
4100 John R. Street
Detroit, MI 48201
33. Kettering Medical Center
3535 Southern Boulevard
Kettering, OH 45429
34. Larkin Community Hospital, Inc.
6129 Southwest 70th Street
South Miami, FL 33143
35. Legacy Health System
1130 North West 22nd Avenue, Suite LL50
Portland, OR 97210
36. Lehigh Valley Health Network
1240 South Cedar Crest Boulevard
Allentown, PA 18103
37. Lewis Hall Singletary Oncology Center
at John D. Archbold Memorial Center
919 South Broad Street
Thomasville, GA 31792
38. Los Robles Regional Medical Center
2200 Lynn Road
Thousand Oaks, CA 91360
39. Lovelace Medical Center
601 Dr. Martin Luther King, Jr. NE
Albuquerque, NM 87102
40. Marshfield Medical Center
611 St. Joseph Avenue
Marshfield, WI 54449
41. Mayo Clinic Hospital-Rochester
SMC Mary Brigh Building
1216 2nd St. SW
Rochester, MN 55902
42. Mayo Clinic Jacksonville
4500 San Pablo Road
Jacksonville, FL 32224
43. Medical College of Wisconsin
Froedtert Memorial Lutheran Hospital
9200 West Wisconsin Avenue
Milwaukee, WI 53226
44. Medical University Hospital Authority
d/b/a Medical University of South Carolina
171 Ashley Avenue (MUSC)
Charleston, SC 29425
45. Memorial Hermann Healthcare System
d/b/a Hermann Hospital
6411 Fannin Avenue
Houston, TX 77030
46. Mercy Health - St. Vincent Medical Center,
LLC
Perrysburg Cancer Center
12623 Eckel Junction Road
Perrysburg, OH 43552
47. Mercy Health Center
4300 West Memorial Road
Oklahoma City, OK 73120
48. Merit Health Central, Central Mississippi
Medical Center
Radiation Oncology Department
1850 Chadwick Drive
Jackson, MS 39204
49. Methodist Childrens Hospital
DBA Joe Arrington Cancer Center
4101 22nd Place
Lubbock, TX 79410
50. Methodist Healthcare System of San Antonio
LTD
Methodist Hospital
7700 Floyd Curl Drive
San Antonio, TX 78229

OTHER U.S.PARTY(IES) TO EXPORT Continued:

51. Methodist Hospital of Gary, Inc.
Methodist Hospital - Southlake Campus
8701 Broadway
Merrillville, IN 46410
52. Mid-Michigan Gamma Knife Facility
4000 Wellness Drive
Room H-1405
Midland, MI 48670
53. Neurologic & Orthopedic Institute of Chicago
4501 N. Winchester
Chicago, IL 60640
54. New York Presbyterian Hospital, Columbia
University Medical Center
Gamma Knife Suite, Columbia-Presbyterian
Medical Center
630 West 168th Street
New York, NY 10032
55. Northern Westchester Hospital Center
400 East Main Street
Mount Kisco, NY 10549
56. Northside Hospital Forsyth
1200 Northside Forsyth Drive
Cumming, GA 30041
57. Northwestern Memorial Hospital
Galter Pavilion
201 E. Huron Street
Chicago, IL 60611
58. NYU Langone Hospitals
Tisch Hospital
550 First Ave.
New York, NY 10016
59. Ochsner Clinic Foundation, Ochsner Medical
Center
Department of Radiation Oncology
1514 Jefferson Highway
New Orleans, LA 70121
60. OSF Healthcare System
St. Francis Medical Center
530 NE Glen Oak Avenue
Peoria, IL 61637
61. OU Medical Center
Presbyterian Tower
700 N.E. 13th Street
Oklahoma City, OK 73104
62. Our Lady of the Lake Hospital Inc.
dba Thomas J. Moran Imaging Center
4950 Essen Lane
Baton Rouge, LA 70809
63. Peace Health Sacred Heart Medical Center
3333 RiverBend Drive
Springfield, OR 97477
64. Penn State Health Holy Spirit Medical Center
GSR Suite at the Oakwood Center
880 Century Drive
Mechanicsburg, PA 17055
65. Penn State Milton S. Hershey Medical Center
500 University Drive
Hershey, PA 17033
66. Piedmont Hospital Atlanta
1968 Peachtree Road N.W.
Atlanta, GA 30309
67. Pitt County Memorial Hospital
2100 Stantonsburg Road
Greenville, NC 27835
68. Prisma Health Richland Hospital
7 Medical Park
Columbia, SC 29203
69. Providence Portland Medical Center
North Pavilion
4805 NE Glisan Street
Portland, OR 97213
70. Puerto Rico Medical Services Administration
Puerto Rico Medical Center, Centro Medico
de Rio Piedras
First Floor, Central Building, Carr 22 Barrio
Monacillos
San Juan, PR 00935

OTHER U.S.PARTY(IES) TO EXPORT Continued:

71. Puget Sound Radiosurgery
Gamma Knife Suite, Room 103, St. Joseph's
Medical Center
1802 South Yakima
Tacoma, WA 98405
72. Research Medical Center
Midwest Gamma Knife Center
2316 E. Meyer Blvd.
Kansas City, MO 64132
73. Rhode Island Hospital
593 Eddy Street
Providence, RI 02903
74. Robert Wood Johnson University Hospital
Gamma Knife Suite
10 Plum Street
New Brunswick City, NJ 08901
75. Roswell Park Cancer Institute Corp.
Elm & Carlton Street
Buffalo, NY 14263
76. Sacred Heart Health System, Inc.
d/b/a Sacred Heart Hospital of Pensacola
5151 North 9th Avenue
Pensacola, FL 32504
77. San Antonio Community Hospital
999 San Bernardino Road
Upland, CA 91786
78. San Diego Gamma Knife Center
9834 Genesee Avenue, Suite 110
La Jolla, CA 92037
79. South Nassau Communities Hospital
One Healthy Way
Oceanside, NY 11572
80. St. Lukes The Woodlands Hospital
17200 St. Luke's Way
The Woodlands, TX 77384
81. St. Vincent Medical Center
2 Shircliff Way
Jacksonville, FL 32204
82. SUNY Upstate Medical University
750 East Adams Street
Syracuse, NY 13210
83. Sutter Gamma Knife Center
2801 K St., Suite 110
Sacramento, CA 95816
84. Swedish Medical Center
799 East Hampden Ave. Suite 100
Englewood, CO 80113
85. Temple University
Temple Hospital
3401 N. Broad Street
Philadelphia, PA 19140
86. Tenet Good Samaritan, Inc.
1309 North Flagler Drive
West Palm Beach, FL 33401
87. Tenet Hospitals Limited
DBA The Hospitals of Providence Sierra
Campus
Gamma Knife Suite, 1625 Medical Center
Drive
El Paso, TX 79902
88. The Cleveland Clinic Foundation
d/b/a The Cleveland Clinic
10201 Carnegie Avenue
Cleveland, OH 44195
89. The Methodist Hospital
DBA Houston Methodist
6551 Bertner Avenue
Houston, TX 77030
90. The Ohio State University
Radiation Medicine Department, Arthur G.
James Cancer Hospital and
Richard J. Solove Research Institute, 300
West 10th Avenue.
Columbus, OH 43210
91. The Regents of the University of California
San Francisco Medical Center
UCSF Medical Center
Parnassus Ave.
San Francisco, CA 94143
92. The Regents of the University of
California U.C. Davis Medical Center
2315 Stockton Blvd.
Sacramento, CA 95817

OTHER U.S.PARTY(IES) TO EXPORT Continued:

93. The Swedish Radiosurgery Center
Suite A10 James Tower
550 17th Avenue
Seattle, WA 98122
95. The Valley Hospital Luckow Pavilion 1
Valley Health Plaza
Paramus, NJ 07652
97. Tufts Medical Center
800 Washington Street
Boston, MA 02111
99. University Hospitals of Cleveland
11100 Euclid Avenue
Cleveland, OH 44106
101. The University of Iowa
University of Iowa Campus
200 Hawkins Drive
Iowa City, IA 52242
103. University of Maryland Medical System
Gamma Knife Suite, South Hospital B
Wing 22 South Greene Street
Baltimore, MD 21201
105. University of Minnesota Medical Center
Room 1-285
500 SE Harvard Street
Minneapolis, MN 55455
107. University of Pennsylvania
Pennsylvania Hospital Campus
800 Spruce Street
Philadelphia, PA 19107
109. University of Pittsburgh
Presbyterian University Hospital
230 Lothrop Street, Room F-185
Pittsburgh, PA 15213
111. University of Texas Southwestern
Medical Center at Dallas
6201 Harry Hines Blvd.
Dallas, TX 75390
113. USC University Hospital
1540 Alcazar Street
Los Angeles, CA 90033
94. The University of Texas
MD Anderson Cancer Center
1515 Holcombe Boulevard
Houston, TX 77030
96. Thomas Jefferson University and Hospitals
900 Walnut Street
Philadelphia, PA 19107
98. University Health Shreveport, LLC.
d/b/a Ochsner LSU Health Shreveport
1541 Kings Highway
Shreveport, LA 71103
100. University of Colorado Hospital Authority
1635 Aurora Court
Aurora, CO 80045
102. University of Kentucky
Markey Cancer Center, Roach Bldg.,
Room CC049
800 Rose Street
Lexington, KY 40536
104. University of Miami
Sylvester Cancer Center West
1400 NW 12th Avenue
Miami, FL 33136
106. University of Mississippi Medical Center
350 West Woodrow Wilson Avenue
Jackson, MS 39216
108. University of Pittsburgh
Presbyterian University Hospital
230 Lothrop Street, Room G-102
Pittsburgh, PA 15213
110. University of Pittsburgh
Presbyterian University Hospital
230 Lothrop Street, Room F-179
Pittsburgh, PA 15213
112. University of Virginia Physicians Group
University of Virginia Lars Leksell Center of
Gamma Surgery, Primary Care Center
Building 1143; Room G411, 1215 Lee Street
Charlottesville, VA 22908
114. North Carolina Baptist Hospital
Outpatient Comprehensive Cancer Center
Medical Center Boulevard
Winston-Salem, NC 27157

OTHER U.S.PARTY(IES) TO EXPORT Continued:

- | | |
|---|--|
| 115. Washington Hospital Center
110 Irving Street, NW
Washington, DC 20010 | 116. Washington Hospital Healthcare System
2500 Mowry Ave.
Fremont, CA 94538 |
| 117. Washington University in St. Louis
Barnes-Jewish Hospital
4921 Parkview Place
St. Louis, MO 63110 | 118. West Virginia University Hospital, Inc.,
Ruby Memorial Hospital, Mary Babb,
Randolph Cancer Center,
and Health Sciences Center South Building,
Medical Center Drive
Morgantown, WV 26506 |
| 119. William Beaumont Hospital
Department of Radiation
Oncology 3601 W. Thirteen Mile
Road Royal Oak, MI 48073 | 120. Yale-New Haven Hospital
20 York Street
New Haven, CT 06510 |

MANDATORY ADVANCED NOTIFICATIONS PER 10 CFR PART 110.50(c)

The following Advanced Notifications must be made to both the NRC and, in case of exports, the government of the importing country in advance of each shipment:

Mandatory Advanced Notifications to the NRC are to be emailed to hoo.hoc@nrc.gov (preferred method) or faxed to the NRC at 301-816-5151. In the subject line of the email or on the fax cover page include: "10 CFR 110.50(c) Notification." For technical assistance, use the same e-mail address or call 301-287-9056.

Mandatory Advanced Notifications to the government of the importing country must be emailed or faxed to the appropriate foreign government authorities. To locate the point-of-contact for international Advanced Notifications see: <http://www-ns.iaea.org/downloads/rw/imp-export/imp-export-contact-points.pdf>. In the subject line of the email or on the fax cover page include: "NOTIFICATION TO THE IMPORTING STATE PRIOR TO SHIPMENT OF CATEGORY 1 OR 2 RADIOACTIVE SOURCES." For technical assistance or for countries not listed, contact the Office of International Programs' export/import staff at 301-287-9056.

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 (Am-241)	60	1,600	0.6	16
Americium-241/Beryllium (Am-241/Be)	60	1,600	0.6	16
Californium-252 (Cf-252)	20	540	0.2	5.4
Curium-244 (Cm-244)	50	1,400	0.5	14
Cobalt-60 (Co-60)	30	810	0.3	8.1
Cesium-137 (Cs-137)	100	2,700	1.0	27
Gadolinium-153 (Gd-153)	1,000	27,000	10.0	270
Iridium-192 (Ir-192)	80	2,200	0.8	22
Plutonium-238 ² (Pu-238)	60	1,600	0.6	16
Plutonium-239/Beryllium ² (Pu-239/Be)	60	1,600	0.6	16
Promethium-147 (Pm-147)	40,000	1,100,000	400	11,000
Radium-226 ³ (Ra-226)	40	1,100	0.4	11
Selenium-75 (Se-75)	200	5,400	2.0	54
Strontium-90 (Y-90)	1,000	27,000	10.0	270
Thulium-170 (Tm-170)	20,000	540,000	200	5,400
Ytterbium-169 (Yb-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 radionuclide 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 AR1 = activity limit for radionuclides or source number 1
- R2 = activity for radionuclides or source number 2 AR2 = activity limit for radionuclides or source number 2
- RN = activity for radionuclides or source number n 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 exports of Pu-238 and Pu-239/Be can be found in § 110.21.

³ Discrete sources of Radium-226.