NRC FORM 250	NRC LICENSE NO.: PXB6.35			
United States of America	Page 1 of 9			
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Washington, D.C. 20555	LICENSE EXPIRES: January 31, 2028			
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).				
LICENSEE	ULTIMATE CONSIGNEE(S) IN FOREIGN COUNTRY(IES)			
Alpha-Omega Services, Inc. 9156 Rose Street	See following page(s)			
Bellflower, CA 90706				
Attn: Carl Tunnell				
INTERMEDIATE CONSIGNEE(S) IN FOREIGN COUNTRY(IES)	OTHER U.S. PARTY(IES) TO EXPORT			
None	See following page(s)			
APPLICANT'S REFERENCE: Amendment 34	ULTIMATE DESTINATIONS: See following page.			
DESCRIPTIONS OF 10CFR PART 110, APPENDIX P, BYPRODUCT AND MATERIALS 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 TBq per shipment, contained in sealed sources for final disposition, is authorized. For Category 1 exports, see conditions on Page 2.				
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 PXB6.34 and amends its authority by revising the list of "Other U.S. Part(ies) 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 INVALID UNLESS SIGNED BELOW BY AUTHORIZED NRC REPRESENTATIVE Digitally signed by Peter J.			
This license is subject to the right of recapture or control by Section 108	Peter J. Habighorst Habighorst NAME AND TITLE:			
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	Peter J. Habighorst, Acting Deputy Director Office of International Programs			
and regulations of the Nuclear Regulatory Commission.	DATE OF ISSUANCE: February 9, 2021			

CONDITIONS

Licensee is prohibited from shipping 10 CFR Part 110 Appendix P Category 1 quantities of Co-60 to Canada and Sweden 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 or 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

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) TO EXPORT Continued:

- Adventist Health Systems/Sunbelt Inc. Florida Hospital Plaza 2501 N. Orange Avenue Orlando, FL 32803
- Alexian Brothers Medical Center 800 West Biesterfield Road Elk Grove Village, IL 60007
- Anchorage Radiation Oncology Management, Inc. d/b/a Anchorage Radiation Therapy Center 2841 Debarr Road, Suite 100 Anchorage, AK 99508
- 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

2. For export of 10 CFR Part 110 Appendix P, Category 2 quantities of Ir-192

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

- Akron General Medical Center 762 South Cleveland Massillon Road Montrose, OH 44333
- Alpha-Omega Services, Inc. 1282 Big Woods-Starks Road Vinton, LA 70668
- Augusta University Medical Center 1120 15th Street Augusta, GA 30912
- Avera Radiation Oncology Avera Cancer Institute Prairie Center 1000 East 23rd Street Suite 100, Room #2 Sioux Falls, SD 57105

- Baptist Hospital of Miami, Inc. Department of Radiation Oncology 8900 North Kendall Drive Miami, FL 33176
- 11. Billings Clinic 2800 Tenth Avenue North Billings, MT 59101
- Center for Advanced Medicine Long Island Jewish Medical Center 450 Lakeville Road Lake Success, NY 11042
- 15. Central Mississippi Medical Center Radiation Oncology Department 1850 Chadwick Drive Jackson, MS 39204
- Chippenham and Johnston-Willis Hospitals, Inc. d/b/a CJW Medical Center, Johnston-Willis Campus 1401 Johnston-Willis Drive Richmond, VA 23235
- Columbia-Presbyterian Medical Center Gamma Knife Suite Basement Level Room GK2, Children's Hospital of New York Presbyterian Hospital 630 West 168th Street New York, NY 10032
- 21. Covenant Health System Covenant Gamma Southwest 3603 21st Street Lubbock, TX 79410
- Deaconess Medical Center, Gamma Knife Suite, Basement Floor Room 117 910 West Fifth Avenue Spokane, WA 99204
- 25. Fort Sanders Regional Gamma Knife Center 1915 White Avenue Knoxville, TN 37916
- GE-Hitachi Nuclear Energy Americas, LLC Vallecitos Nuclear Center
 6705 Vallecitos Road Pleasanton, CA 94586

- Baylor All Saints Medical Center Fort Worth 1400 Eight Avenue Fort Worth, TX 76104
- 12. Bryan Medical Center 2300 South 16th Street Lincoln, NE 68502
- Central DuPage Hospital Association Northwestern Medicine Cancer Center Central DuPage Hospital 4405 Weaver Parkway Warrenville, IL 60555
- Chesapeake Regional Riverside & University of Virginia Radiosurgery Center 500 J Clyde Morris Boulevard Newport News, VA 23601
- Chippenham and Johnston-Willis Hospitals, Inc., d/b/a CJW Medical Center Johnston-Willis Campus, Chippenham Campus 7101 Jahnke Road Richmond, VA 23235
- Cooper Health System Robert Wood Johnson Medical School at Camden 3 Cooper Plaza Camden, NJ 08103
- 22. Covenant Health System DBA Joe Arrington Cancer Research & Treatment Center 4101 22nd Place Lubbock, TX 79410
- 24. Doctors Hospital, Inc. d/b/a Doctors Hospital 5000 University Drive Coral Gables, FL 33146
- 26. Gamma Knife Center of the Pacific 2226 Liliha Street, Level B2 Honolulu, HI 96817
- 28. Good Samaritan Hospital 1225 Wilshire Boulevard Los Angeles, CA 90017

- Hackensack University Medical Center John Theurer Cancer Center
 92 2nd St.
 Hackensack, NJ 07601
- Hoag Memorial Hospital Presbyterian One Hoag Drive Newport Beach, CA 92658
- Indiana University Health Methodist Hospital 1701 N. Senate Blvd Indianapolis, IN 46202
- Jewish Hospital, LLC.
 4777 East Galbraith Road Cincinnati, OH 45236
- Karmanos Cancer Center Gershenson Radiation Oncology Center, Room 379 4100 John R. Street Detroit, MI 48201
- Larkin Community Hospital, Inc. 6129 Southwest 70th Street South Miami, FL 33143
- 41. Lehigh Valley Health Network 1240 South Cedar Crest Boulevard Allentown, PA 18103
- 43. Los Robles Regional Medical Center 2200 Lynn Road Thousand Oaks, CA 91360
- 45. Marshfield Medical Center 611 St. Joseph Avenue Marshfield, WI 54449
- 47. Mayo Clinic Jacksonville 4500 San Pablo Road Jacksonville, FL 32224
- 49. Medical University of South Carolina 171 Ashley Avenue (MUSC) Charleston, SC 29425

- Harborview Medical Center 325 9th Avenue Gamma Knife Suite Seattle, WA 98133
- 32. Holy Spirit Cancer Center Gamma Knife Center 880 Century Drive Mechanicsburg, PA 17055
- Intermountain Medical Center Jon and Karen Huntsman Cancer Center Gamma Knife Room, 5121 South Cottonwood Street Murray, UT 84157
- John F. Kennedy Medical Center 65 James Street Edison, NJ 08818
- Kettering Medical Center 3535 Southern Boulevard Kettering, OH 45429
- 40. Legacy Health System 1130 North West 22nd Avenue, Suite LL50 Portland, OR 97210
- 42. Lewis Hall Singletary Oncology Center at John D. Archbold Memorial Center 919 S. Broad Street Thomasville, GA 31792
- 44. Lovelace Medical Center 601 Dr. Martin Luther King, Jr. NE Albuquerque, NM 87102
- 46. Mayo Clinic Hospital-Rochester SMC Mary Brigh Building 1216 2nd St. SW Rochester, MN 55902
- Medical College of Wisconsin Froedtert Memorial Lutheran Hospital 9200 West Wisconsin Avenue Milwaukee, WI 53226
- 50. Memorial Hermann Healthcare System d/b/a Hermann Hospital 6411 Fannin Avenue Houston, TX 77030

- Mercy Health Center 4300 West Memorial Road Oklahoma City, OK 73120
- 53. Mid-Michigan Gamma Knife Facility 4000 Wellness Drive Room H-1405 Midland, MI 48670
- 55. Neurologic & Orthopedic Institute of Chicago 4501 N. Winchester Chicago, IL 60640
- 57. Northern Westchester Hospital Center 400 East Main Street Mount Kisco, NY 10549
- 59. Northwest Hospital Gamma Knife Center Building 310, Ground Floor, Suite G-5 1560 North 115th Street Seattle, WA 98133
- OU Medical Center Presbyterian Tower
 700 N.E. 13th Street
 Oklahoma City, OK 73104
- 63. Piedmont Hospital Atlanta 1968 Peachtree Road N.W. Atlanta, GA 30309
- Prisma Health Richland Hospital
 7 Medical Park
 Columbia, SC 29203
- 67. 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
- 69. Research Medical Center Midwest Gamma Knife Center 2316 E. Meyer Blvd. Kansas City, MO 64132
- 71. Robert Wood Johnson University Hospital Gamma Knife Suite
 10 Plum Street
 New Brunswick City, NJ 08901

- 52. Methodist Healthcare System of San Antonio LTD Methodist Hospital 7700 Floyd Curl Drive San Antonio, TX 78229
- 54. Nebraska Methodist Hospital 8303 Dodge Street Omaha, NE 68114
- 56. New York University Hospitals Center Arnold and Marie Schwartz Health Care Center Gamma Knife Suite, 550 First Avenue New York, NY 10016
- Northside Hospital Forsyth 1200 Northside Forsyth Drive Cumming, GA 30041
- Northwestern Memorial Hospital Galter Pavilion
 201 E. Huron Street Chicago, IL 60611
- Penn State Milton S. Hershey Medical Center 500 University Drive Hershey, PA 17033
- 64. Pitt County Memorial Hospital d/b/a Vidant Medical Center 2100 Stantonsburg Road Greenville, NC 27835
- Providence Portland Medical Center North Pavilion
 4805 NE Glisan Street Portland, OR 97213
- Puget Sound Radiosurgery Gamma Knife Suite, Room 103, St. Joseph's Medical Center 1802 South Yakima Tacoma, WA 98405
- 70. Rhode Island Hospital 593 Eddy Street Providence, RI 02903
- 72. Rocky Mountain Gamma Knife Center, LLC 1635 Aurora Court Aurora, CO 80045

- Roswell Park Cancer Institute Elm & Carlton Street Buffalo, NY 14263
- 75. Peace Health Sacred Heart Medical Center 3333 River Bend Drive Springfield, OR 97477
- 77. San Antonio Community Hospital 999 San Bernardino Road Upland, CA 91786
- 79. South Nassau Communities Hospital One Healthy Way Oceanside, NY 11572
- 81. St. Joseph's Hospital and Medical Center 350 West Thomas Road Phoenix, AZ 85013
- 83. St. Vincent Medical Center 2 Shircliff Way Jacksonville, FL 32204
- 85. SUNY Upstate Medical University 750 East Adams Street Syracuse, NY 13210
- 87. Swedish Medical Center 799 East Hampden Ave. Suite 100 Englewood, CO 80113
- 89. Tenet Good Samaritan, Inc. 1309 North Flagler Drive West Palm Beach, FL 33401
- 91. The Cleveland Clinic Foundation 9500 Euclid Avenue Cleveland, OH 44195
- 93. 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
- 95. The Regents of the University of California U.C. Davis Medical Center
 2315 Stockton Blvd.
 Sacramento, CA 95817

- Sacred Heart Health System, Inc. d/b/a Sacred Heart Hospital of Pensacola 5151 North 9th Avenue Pensacola, FL 32504
- 76. Saint Francis Medical Center 530 NE Glen Oak Avenue Peoria, IL 61637
- San Diego Gamma Knife Center 9834 Genesee Avenue, Suite 110 La Jolla, CA 92037
- 80. St. Joseph's Hospital 5665 Peachtree Dunwoody Road Atlanta, GA 30342
- 82. St. Lukes The Woodlands Hospital 17200 St. Luke's Way The Woodlands, TX 77384
- Sunrise Diagnostic Center 3006 South Maryland Parkway Las Vegas, NV 89109
- 86. Sutter Gamma Knife Center 2801 K St., Suite 110 Sacramento, CA 95816
- Temple University Hospital 3401 N. Broad Street Philadelphia, PA 19140
- 90. Texas Health Presbyterian Hospital Dallas 8200 Walnut Hill Lane Dallas, TX 75231
- 92. The Methodist Hospital DBA Houston Methodist 6551 Bertner Avenue Houston, TX 77030
- 94. The Regents of the University of California San Francisco Medical Center 505 Parnassus Ave, Room L56 San Francisco, CA 94143
- 96. The Swedish Radiosurgery Center Suite A10 James Tower 550 17th Avenue Seattle, WA 98122

- 97. The University of Texas MD Anderson Cancer Center 1515 Holcombe Boulevard Houston, TX 77030
- Thomas Jefferson University and Hospitals 900 Walnut Street Philadelphia, PA 19107
- 101. UAB Highlands Hospital 1201 11th Avenue South Birmingham, AL 35205
- University Hospitals of Cleveland 11100 Euclid Avenue Cleveland, OH 44106
- University of Iowa Medical Center 200 Hawkins Drive Iowa City, IA 52242
- University of Maryland Medical System Gamma Knife Suite, South Hospital B Wing 22 South Greene Street Baltimore, MD 21201
- 109. University of Minnesota Medical Center Room 1-285
 500 SE Harvard Street Minneapolis, MN 55455
- 111. University of Pennsylvania Pennsylvania Hospital Campus 800 Spruce Street Philadelphia, PA 19107
- 113. University of Pittsburgh Presbyterian University Hospital230 Lothrop Street, Room F-179 Pittsburgh, PA 15213
- University of Texas Southwestern Medical Center at Dallas
 5151 Harry Hines Blvd. Suite G49 Dallas, TX 75390
- 117. USC University Hospital 1540 Alcazar Street Los Angeles, CA 90033

- The Valley Hospital Luckow Pavilion
 Valley Health Plaza Paramus, NJ 07652
- 100. Tufts Medical Center 800 Washington Street Boston, MA 02111
- 102. University Health Shreveport, LLC. d/b/a Ochsner LSU Health Shreveport 1541 Kings Highway Shreveport, LA 71103
- 104. University of Arkansas for Medical Science 4301 West Markham Street Little Rock, AR 72205
- 106. University of Kentucky Markey Cancer Center, Roach Bldg., Room CC049 800 Rose Street Lexington, KY 40536
- University of Miami Sylvester Cancer Center West 1400 NW 12th Avenue Miami, FL 33136
- University of Mississippi Medical Center 350 West Woodrow Wilson Avenue Jackson, MS 39216
- 112. University of Pittsburgh Presbyterian University Hospital230 Lothrop Street, Room F-185 Pittsburgh, PA 15213
- 114. University of Pittsburgh Presbyterian University Hospital 230 Lothrop Street, Room G-102 Pittsburgh, PA 15213
- 116. University of Virginia Health Services Foundation Lars Leksell Center for Gamma Surgery Building 1143; Room G411 1215 Lee Street Charlottesville, VA 22908
- 118. Wake Forest Baptist Health Radiation Oncology Department, Comprehensive Cancer Center Medical Center Boulevard Winston-Salem, NC 27157

- 119. Washington Hospital Center 110 Irving Street, NW Washington, DC 20010
- 121. Washington University in St. Louis 4921 Parkview Place St. Louis, MO 63108
- William Beaumont Hospital Department of Radiation Oncology 3601 W. Thirteen Mile Road Royal Oak, MI 48073

ULTIMATE DESTINATION(S):

Canada, Japan and Sweden

- 120. Washington Hospital Healthcare System 2500 Mowry Ave. Fremont, CA 94538
- 122. 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
- 124. 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 <u>hoo.hoc@nrc.gov</u> (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: <u>http://www-ns.iaea.org/downloads/rw/imp-export/import-export-contact-points.pdf</u>. 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 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

$$\sum_{1}^{n} \left[\frac{\mathbf{R}_{1}}{\mathbf{A}\mathbf{R}_{1}} + \frac{\mathbf{R}_{2}}{\mathbf{A}\mathbf{R}_{2}} + \frac{\mathbf{R}_{n}}{\mathbf{A}\mathbf{R}_{n}} \right] \ge 1$$

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.