

**IMPORT AND EXPORT LICENSE**

NRC FORM 250P



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

**NRC LICENSE NO.: PCB14a.06**

**LICENSE EXPIRES: August 31, 2012**

**Page 1 of 4**

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.

LICENSEE	ULTIMATE FOREIGN CONSIGNEE(S)
Source Production & Equipment Co., Inc. ATTN: Kelley Richardt 113 Teal Street St. Rose, Louisiana 70087  <b>APPLICANT'S REFERENCE: CBP14a-5</b>	Gilligan Engineering Services, Ltd. Andrews House Princess Way Low Prudhoe Industrial Estate Northumberland, NE426HB United Kingdom
INTERMEDIATE FOREIGN AND/OR DOMESTIC CONSIGNEE(S)	OTHER PARTY(IES) TO EXPORT/IMPORT
NONE	Listed on Pages 3 and 4

**COUNTRY(IES) OF ULTIMATE DESTINATION:** Argentina, Australia, Austria, Bangladesh, Belarus, Belgium, Bolivia, Brazil, Bulgaria, Canada, China and Hong Kong, Denmark, Estonia, Ethiopia, Finland, France, Germany, Ghana, Greece, Guatemala, Hungary, Ireland, Italy, Japan, Kazakhstan, Kuwait, Latvia, Lithuania, Luxembourg, Netherlands, New Zealand, Niger, Norway, Paraguay, Philippines, Poland, Portugal, Romania, Russia, Singapore, Slovakia, South Africa, South Korea, Spain, Sweden, Switzerland, Thailand, Turkey, United Kingdom, United States, and Vietnam.

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

Import, from facilities listed on Pages 3 and 4, of Category 1 quantities of Ir-192 not to exceed 1,480 TBq per shipment, and Category 1 quantities of Se-75 not to exceed 370 TBq per shipment, contained in special forms or sealed sources for use in the manufacture of industrial gamma radiography and brachytherapy sources, is authorized.

Export to Ultimate Foreign Consignee(s), of Category 1 quantities not to exceed 200 TBq of Ir-192 contained in special forms or sealed sources for use in the manufacture or use of industrial gamma radiography and brachytherapy sources, is authorized.

Import and export, from and to countries listed as 'Country(ies) of Ultimate Destination,' Category 2 quantities of Co-60, Ir-192, Se-75, and Yb-169, contained in special forms or sealed sources for use in the manufacture or use of industrial gamma radiography and brachytherapy sources, is authorized.

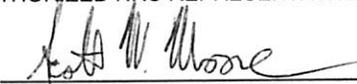
Licensee is responsible for compliance with all applicable import, export, and other domestic regulatory requirements, including all terms and conditions of domestic materials licenses. If not already submitted with your application, licensee must submit information required by 10 CFR §110.32(d) and pertinent documentation required by 10 CFR §110.32(h) at least **24 hours prior to shipment**. See Page 2 for Mandatory Pre-shipment Notifications.

This license replaces CBP14a-5 and amends its authority by: 1) revising the list of 'Other Party(ies) to Import/Export'; 2) revising license conditions; 3) removing Yemen from the list of 'Country(ies) of Ultimate Destination;' and 4) incorporating the new license number format.

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

NAME AND TITLE:   
 Scott W. Moore, Deputy Director  
 Office of International Programs

DATE OF ISSUANCE: September 13, 2010

**MANDATORY PRE-SHIPMENT NOTIFICATIONS PER 10 CFR PART 110.50(b)(4)**

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

Prior Shipment Notifications to the NRC are to be emailed to [hoo.hoc@nrc.gov](mailto: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(b)(4) Notification." For technical assistance, use the same e-mail address or call 301-816-5100.

Prior Shipment 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 Prior Shipment Notifications see: <http://www-ns.iaea.org/downloads/rw/imp-export/import-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 301-415-2344.

**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) <sup>1</sup>	Terabequerels (TBq)	Curies(Ci) <sup>1</sup>
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 <sup>2</sup> (Pu-238)	60	1,600	0.6	16
Plutonium-239/Beryllium <sup>2</sup> (Pu-239/Be)	60	1,600	0.6	16
Promethium-147 (Pm-147)	40,000	1,100,000	400	11,000
Radium-226 <sup>3</sup> (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 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

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

<sup>1</sup>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.

<sup>2</sup>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.

<sup>3</sup> Discrete sources of Radium-226.

**OTHER PARTY(IES) TO IMPORT/EXPORT**  
(Brokers and Suppliers)

ANSTO Radiopharmaceuticals and Industrials  
(ARI)  
PMB 1, Menai NSW 2234  
**Australia**

Orphee Reactor  
Saclay Nuclear Research Centre  
Postal Address 91191, Gif-sur-Yvette Cedex  
**France**

Belgium Reactor 2 and their brokers  
(BR-2 Reactor)  
Mol  
**Belgium**

Osiris Reactor  
Commissariat à l' Energie Atomique – Saclay  
Direction de l' Energie Nucléaire  
Direction déléguée aux Activités Nucléaires de  
Saclay  
Département des Réacteurs et des Services  
Nucléaires  
91191, Gif-sur-Yvette Cedex  
**France**

MDS Nordion  
Zoning Industriel Avenue de l'Espérance  
Fleurus  
B-6220  
**Belgium**

Phebus Reactor  
CEA Cadarache  
13108 Saint-Paul-léz-Durance  
**France**

Chalk River Reactor and their brokers  
Chalk River  
Ontario  
**Canada**

Dinatron Technology GmbH  
(Michael Kuznetsov)  
Ferdinandstr. 25-27  
20095 Hamburg  
**Germany**

MDS Nordion  
100 International Blvd.  
Ontario  
**Canada**

Rez Reactor  
Nuclear Research Institute Rez plc  
Husinec- Rez 130  
250 68 Rez  
**Czech Republic**

FRM-II Reactor  
Technische Universitaet Muenchen  
Lichtenbergstr. 1  
85748 Garching  
**Germany**

ETRR-2 Reactor  
Atomic Energy Authority, INSHAS, ETRR-2,  
P. O. BOX 13759,  
Cairo  
**Egypt**

BER-II Reactor  
Hahn-Meitner-Institut  
Lise-Meitner Campus  
Hahn-Meitner-Platz 1  
(ehemals Glienicker Str. 100)  
14109 Berlin  
**Germany**

HFR Reactor  
Institut Laue – Langevin  
BP 156, 6, rue Jules Horowitz  
38042 Grenoble Cedex 9  
**France**

Institute of Isotopes Co. Ltd.  
H-1535 Budapest, P.O.B. 851  
H-1121 Budapest. Konkoly-Thege  
Miklos ut 29-33  
**Hungary**

