EXPORT LICENSE

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	NRC LICENSE NO.: PXB224.00				
United States of America Nuclear Regulatory Commissi Washington, D.C. 20555	Page 1 of 4				
Nuclear Regulatory Commissi	on NRC DOCKET NO.: 11006318				
Washington, D.C. 20555	LICENSE EXPIRES: July 31, 2021				
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)				
ISOFLEX Radioactive LLC 108 Teal Street St. Rose, LA 70087	See following page(s)				
Attn: Kevin J. Schehr					
INTERMEDIATE CONSIGNEE(S) IN FOREIGN COUNTRY(IES)	OTHER U.S. PARTY(IES) TO EXPORT				
None	None				
APPLICANT'S REFERENCE: Application dated 03/20/19	ULTIMATE DESTINATION: India				
DESCRIPTION OF 10 CFR PART 110, APPENDIX P, BYPRODUCT MATERIAL TO BE EXPORTED, INCLUDING CONDITIONS AND NOTES (NOTE: SEE PAGE 3 FOR DEFINITIONS OF CATEGORY 1 AND CATEGORY 2)					
Export to India of Category 1 and 2 quantities of: Ir-192 not to exceed 740 terabecquerels (TBq); Se-75 not to exceed 277 TBq, and Yb-169 not to exceed 7.4 TBq, for industrial radiography to the end-users listed is authorized. For Category 1 exports, see conditions on Page 2.					
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 must submit pertinent documentation required by 10 CFR § 110.32(g) at least 24 hours prior to shipment. See Page 4 for Mandatory Advanced Notifications.					
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				
This license is subject to the right of recapture or control by Section 108	NAME AND TITLE: Peter J. Habighorst, Acting Deputy Director				
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.	Office of International Programs				
	DATE OF ISSUANCE: July 5, 2019				

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Licensee is prohibited from shipping 10 CFR Part 110 Appendix P Category 1 quantities of Ir-192, Se-75, and Yb-169 to India 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):

 APT X-Ray (INDIA) PVT LTD (BRANCH OFFICE) B-2 Shree Niwas No.8, Vennu Reddy Street, Guindy, Chennai 600032 India

(industrial radiography)

 Bolax NDT Engineering (International Radiography) Plot No. 75/A/3/5, Telco-Bhosari Rd, General Block, MIDC, Corporation Bank, Next To Tulja Bhavani Complex, Bhosari, Pune, Maharashtra -411026 India

(industrial radiography)

 Bolax NDT Engineering (Rajkot Office) Panna Furniture Industries, S. No. 267/2, Shaper Industrial Area, Behind Nova Techno Shaper, Rajkot 360024 Gujarat India

(industrial radiography)

 IRICO (Coimbatore) No 75, Sidco Industrial Estate, Kurichi Coimbatore 641021 India

(industrial radiography)

 APT X-Ray (INDIA) PVT LTD (HEAD OFFICE) Office No.3 Mangal Murti, Plot No 31 Jawahar Nagar, Road No 12, Goregaon (W), Mumbai 400062 India

(industrial radiography)

 Bolax NDT Engineering (Kolhapur Office)
5 Star MIDC Kagal, Plot No. G - 107 Randive Wadi Road, MIDC, Kolhapur Maharashtra 416236 India

(industrial radiography)

 CR Quality and Engg Services Gyan Pushpa Building, Office No. 1 & 2, Beside Bharat Forge, Pune-Nashik Highway, Kuruli, Chakan, Pune 410501 India

(industrial radiography)

 IRICO (Plant B) Old No 69, New No. 61, Natesan Nager, Vivekananda Street, Athipet, Chennai -600095 India

(industrial radiography)

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

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9. IRICO (Ranipet) No. 477/9, Sipcot Industrial Estate Ranipet- 632403 India

(industrial radiography)

 SITAS NDT (COIMBATORE) SF No. 472/1,2,3, Sendhampalayam, S.S. Kulam (via), P.G.Pudur(Post), Coimbatore - 641 107, Tamilnadu India

(industrial radiography)

 SITAS NDT (SHIMOGA) No. 19 - F, Machenahalli Shimoga, Bhadravathi Industrial Area Shimoga 577222, Karnataka India

(industrial radiography)

 View NDT (Trichy)
1152/A, Kainankarai, Mathur Post, Pudukkottai Road, Trichy -622515 India

(industrial radiography)

 SITAS NDT (BANGALOR CORP OFFICE) #51, 3rd Floor, 5th Main Road, 36th Cross, 5th Block, Jayanagar, Bangalore Karnataka 560041 India

(industrial radiography)

12. SITAS NDT (HUBLI) Plot No. 90 B, Tarihal Industrial Area, Tarihal, Hubil 580026 Karnataka India

(industrial radiography)

 14. View NDT (Coimbatore) S.F.No. 233/2B & 2C MasagoundanChettiPalayam Village, Telungupalayam Road, Near Annur, Coimbatore 641653 India

(industrial radiography)

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: 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 301-287-9056.

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.