

EXPORT LICENSE

NRC FORM 250P (12/05)



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

NRC LICENSE NO.: XBP47-2

LICENSE EXPIRES: November 30, 2009

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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 style="text-align: center;">LICENSEE</p> <p>Baker Hughes Oilfield Operations, Inc. ATTN: James Elrod, RSO 2001 Rankin Road Houston, Texas 77073</p> <p>APPLICANT'S REFERENCE: Application dated 10/11/07</p>	<p style="text-align: center;">ULTIMATE FOREIGN CONSIGNEE(S)</p> <p>Listed on Page 3.</p>
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<p style="text-align: center;">INTERMEDIATE FOREIGN AND/OR DOMESTIC CONSIGNEE(S)</p> <p>Listed on Page 3.</p>	<p style="text-align: center;">OTHER PARTY(IES) TO IMPORT AND/OR EXPORT</p> <p>NONE</p>
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COUNTRY(IES) OF ULTIMATE DESTINATION: China.

**CONDITIONS, NOTES, AND DESCRIPTIONS 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)

Export, to China, Category 2 quantities of Americium-241/Beryllium, contained in sealed sources for use in oil and gas well logging operations.

Baker Hughes Oilfield Operations, Inc. is responsible for compliance with all applicable import, export, and other domestic regulatory requirements, including all terms and conditions of domestic materials license(s). Baker Hughes Oilfield Operations, Inc. 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. Please see Page 2 Mandatory Notifications.

License expiration date is based on November 30, 2009 expiration date of The State of Texas, Department of State Health Services, Radioactive Material License L04452, Amendment Number 45.

This license replaces XBP47-1 and amends its authority to extend the expiration date from May 31, 2008 and add an intermediate foreign consignee.

Neither this license or 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: November 17, 2007

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

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

MANDATORY NOTIFICATIONS: Notifications required by 10 CFR 110.50(b)(4) are to be emailed to hoo1@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 415-1678.

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

ULTIMATE FOREIGN CONSIGNEE(S):

Daqing Logging Company
Chengnan Street
Ranghulu District, Daqing
Heilongjiang Province 163412
China

Sichuan Logging Company
No. 400, Daqing Village
Dashiba, Jiangbei District, Chongqing
Sichuan Province 400021
China

The Second File of Liaohe Logging Company
Petroleum Avenue, Xinglongtai District
Panjin City, Liaoning Province 124010
China

INTERMEDIATE FOREIGN AND/OR DOMESTIC CONSIGNEE(S):

China Isotope Corporation
ATTN: Mr. Li Rui
A1, 2nd Block, Sanlihe
Xicheng District
Beijing 100045
China

China Petroleum Material and Equipment (Group) Corporation
12th Floor, #5 Gulouwai Dajie
Xicheng District, Beijing 100029
China

The Import and Export Corporation of Liaohe Oilfield
No. 75, Petroleum Avenue, Xinglongtai District
Panjin City, Liaoning Province 124010
China

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