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Hinited States of America U.S. Nuclear Regulatory Commission       LICENSE EXPIRES: October 31, 2007         Pursuant to the Atomic Energy Act of 1954, as amended, and the Energy Reorganization Act of 1974 and the regulations of the Nuclear Regulatory Commission Issued pursuant thereto, and in reliance on statements and representations herefore made by the licensee, a license is hereby Issue to the licensee authorizing the importveport of the materials and/or production or utilization facilities listed below, subject to the terms and condition herein. This license is only valid if the licensee maintains the regulate NRC or Agreement State domestic licenses.         LICENSEE       ULTIMATE FOREIGN CONSIGNEE(S)         Halliburton Energy Services 2101 City West Bivd., Bldg 2 Houston, TX 77242       ULTIMATE FOREIGN CONSIGNEE(S)         ATTN: Pam Loprete       Halliburton Company Germany (GmbH) (Various oil well locations in Libya)         ATTN: Pam Loprete       NONE         APPLICANTS REF. NO: Application dtd 05/10/06       OTHER PARTY(IES) TO IMPORT/EXPORT         NONE       NONE         NONE       NONE         COUNTRY(IES) OF ULTIMATE DESTINATION: Libya and United States.         DESCRIPTION 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)         Category 2 import and export quantities of Americium-241, Americium-241/Be, and Cesium-137, contained in sealed sources for use in oil and gas well logging operations, are authorized for import and export from and to Halliburton Company Germany (GmbH), various oil well locations in Libya.<					
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1. The exported material remain under the control of Halliburton Energy Services, Inc. and its affiliates; and					
<ol> <li>That the licensee must submit to the U.S. Nuclear Regulatory Commission (NRC) calendar year reports of Americium-241 exports under this license (CBP0049).</li> </ol>					
License expiration date is based on expiration date of State of Texas, Department of State Health Services, Radioactive Material License Number L00442, Amendment Number 105.					
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, and the Energy Reorganization Act of 1974.					
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 Acts, now or hereafter in effect and to all valid rules and regulations of the U.S. Nuclear Regulatory Commission.					
• DATE OF ISSUANCE:September 27, 2006					

**EXPORT/IMPORT LICENSE** 

Table 1: Appendix P to Part 110-Category 1 and (	Category 2 Radioactive Material Threshold Limits

Radioactive Material	Category 1		Category 2	
	Terabequerels	Curies (Ci) <sup>1</sup>	Terabequereis	Curies (Cl)1
	(TBq)		(TBq)	
Americium-241	60	1,600	0.6	1
Americium-241/Be	. 60	1,600	0.6	1
Californium-252	. 20	540	0.2	5.
Curium-244	50	1,400	0.5	· 1
Cobalt-60	30	810	0.3	8
Cesium-137	100	2,700	1.0	2
Gadolinium-153	1,000	27,000	10.0	27
Iridium-192	80	2,200	0.8	2
Plutonium-238 <sup>2</sup>	60	1,600	0.6	. 1
Plutonium-239/Be2	60	1,600	0.6	1
Promethium-147	40,000	1,100,000	400	11,00
Selenium-75	. 200	5,400	2.0	5
Strontium-90 (Y-90)	1,000	27,000	. 10.0	27
Thulium-170	20,000	540,000	200	5,40
Ytterbium-169	300	8,100	3.0	

## 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

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

**NOTIFICATIONS:** The 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. The contact information is current at the time of license issuance. Difficulties notifying the U.S. Nuclear Regulatory Commission must be promptly reported to the Office of International Programs' Import/Export licensing staff.

<sup>&</sup>lt;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>&</sup>lt;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.