

NRC FORM 7 (6-2006) 10 CFR 110	U.S. NUCLEAR REGULATORY COMMISSION	APPROVED BY OMB: NO. 3150-0027	EXPIRES: 06/30/2009  Estimated burden per response to comply with this mandatory collection request: 24 hours. This submittal is reviewed to ensure that the applicable statutory, regulatory, and policy considerations are satisfied. Send comments regarding burden estimate to the Records and FOIA/Privacy Services Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to <a href="mailto:infocollects@nrc.gov">infocollects@nrc.gov</a> , and to the Desk Officer, Office of Information and Regulatory Affairs, NE08-10202, (3150-0027), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.
<b>APPLICATION FOR NRC EXPORT/IMPORT LICENSE, AMENDMENT, OR RENEWAL</b>  (See Instructions on Page 5)			

<b>PART A - FOR NRC USE ONLY</b>	<input checked="" type="checkbox"/> PUBLIC OR <input type="checkbox"/> NON-PUBLIC	DATE RECEIVED <b>8-14-06</b>
LICENSE NUMBER <b>XB P0058</b>	DOCKET NUMBER	ADAMS ACCESSION NUMBER

**PART B. TO BE COMPLETED FOR ALL LICENSES, AMENDMENTS, OR RENEWALS**  
(If more space is needed to complete any of the items, use Pages 3-4 first, and then attach additional sheets, if necessary.)

1. NAME AND ADDRESS OF APPLICANT/LICENSEE  Halliburton Energy Services 2101 City West Blvd., Bldg 2 Houston, Tx 77242	1a. NAME OF APPLICANT'S CONTACT  Cindy Dorris	1b. APPLICANT'S REFERENCE NUMBER  _____
	1c. PHONE NUMBER  (713) 839-4566	1d. FAX NUMBER  (713) 839-4564
	1e. E-MAIL ADDRESS  cynthia.dorris@halliburton.com	

2. TYPE OF NRC LICENSE REQUESTED (Check One)

EXPORT (Parts B, C, E)    
  IMPORT (Parts B, D, E)    
  COMBINED EXPORT/IMPORT (Parts B, C, D, E)    
  AMENDMENT/RENEWAL Existing License Number: \_\_\_\_\_

3. CONTRACT NUMBER(S)	4. FIRST SHIPMENT DATE 08/10/2006	5. LAST SHIPMENT DATE 12/31/2008	6. PROPOSED EXPIRATION DATE 12/31/2008
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**PART C. TO BE COMPLETED FOR EXPORT ONLY OR COMBINED LICENSES, AMENDMENTS, OR RENEWALS**  
(If more space is needed to complete any of the items, use Pages 3-4 first, and then attach additional sheets, if necessary.)

7. NAME(S) / ADDRESS(ES) OF SUPPLIERS AND/OR OTHER PARTIES TO THE EXPORT	8. NAME(S) / ADDRESS(ES) OF INTERMEDIATE FOREIGN CONSIGNEE(S)	9. NAME(S) / ADDRESS(ES) OF ULTIMATE FOREIGN CONSIGNEE(S)  China Oilfield Services, Limited (COSL) Tianjing Branch P.O. Box 11, Potou 524057, Zhangjiang China
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7a. LIST FUNCTIONS PERFORMED/SERVICE PROVIDED	8a. INTERMEDIATE USE(S)	9a. ULTIMATE END USE(S)
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10. DESCRIPTION OF RADIOACTIVE MATERIALS, SEALED SOURCES, NUCLEAR FACILITIES, EQUIPMENT, OR COMPONENTS  19 Curie Am241/Be Logging Sources 2 Curie Cs-137 Sources .2 uCurie Cs-137 Sources .2 Curie Am241/Be Logging Sources	10a. MAX TOTAL VOLUME / ELEMENT WGT (KG), OR TOTAL ACTIVITY (TBq)	10b. MAX ENRICHMENT OR WGT %	10c. MAX ISOTOPE WGT (KG)
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11. FOREIGN OBLIGATIONS (BY COUNTRY AND BY PERCENTAGE OF MAXIMUM TOTAL VOLUME)

NRC FORM 7  
(6-2006)  
10 CFR 110

U.S. NUCLEAR REGULATORY COMMISSION

**APPLICATION FOR NRC EXPORT/IMPORT  
LICENSE, AMENDMENT, OR RENEWAL (Continued)**

<b>LICENSE NUMBER</b> <b>XBP0058</b>	<b>DOCKET NUMBER</b>	<b>ADAMS ACCESSION NUMBER</b>	<input checked="" type="checkbox"/> <b>PUBLIC</b> <b>OR</b> <input type="checkbox"/> <b>NON-PUBLIC</b>
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**PART D. TO BE COMPLETED FOR IMPORT ONLY, OR COMBINED LICENSES, AMENDMENTS, OR RENEWALS**  
(If more space is needed to complete any of the items, use Pages 3-4 first, and then attach additional sheets, if necessary.)

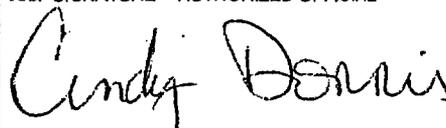
<b>12. NAME(S) / ADDRESS(ES) OF FOREIGN SUPPLIERS AND/OR OTHER PARTIES TO IMPORT</b>	<b>13. NAME(S) / ADDRESS(ES) OF INTERMEDIATE CONSIGNEE(S)</b>	<b>14. NAME(S) / ADDRESS(ES) OF ULTIMATE CONSIGNEE(S)</b>
<b>12a. NRC EXPORT LICENSE NUMBER(S)</b> <i>(if applicable)</i>	<b>13a. LICENSE NUMBER(S) / EXPIRATION DATE(S)</b>	<b>14a. LICENSE NUMBER(S) / EXPIRATION DATE(S)</b>
	<b>13b. INTERMEDIATE USE(S)</b>	<b>14b. INTERMEDIATE USE(S)</b>
<b>15. DESCRIPTION OF RADIOACTIVE MATERIALS, SEALED SOURCES, NUCLEAR FACILITIES</b>  5 Curie Am241/Be Logging Sources 5 Curie Cs-137 Sources .2 uCurie Cs-137 Sources .2 Curie Am241/Be Logging Sources	<b>15a. MAX TOTAL VOLUME / ELEMENT WGT (KG), OR TOTAL ACTIVITY (TBq)</b>	<b>15b. MAX ENRICHMENT OR WGT %</b>
		<b>15c. MAX ISOTOPE WGT (KG)</b>

**16. FOREIGN OBLIGATIONS (BY COUNTRY AND BY PERCENTAGE OF MAXIMUM TOTAL VOLUME)**

**PART E. TO BE COMPLETED FOR ALL LICENSES, AMENDMENTS, OR RENEWALS**

<b>17. ADDITIONAL INFORMATION PROVIDED ON PAGES 3, 4, AND/OR ON SEPARATE SHEETS?</b> <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<b>17a. COPIES OF RECIPIENTS' AUTHORIZATIONS PROVIDED?</b> <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
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**18. CERTIFICATION:** I, the applicant's authorized official, hereby certify that this application is prepared in conformity with Title 10, Code of Federal Regulations, and that all information provided is correct to the best of my knowledge.

<b>18a. PRINT NAME AND TITLE OF AUTHORIZED OFFICIAL</b> Cindy Dorris International Trade Compliance Coordinator, Export Group	<b>18b. SIGNATURE -- AUTHORIZED OFFICIAL</b> 	<b>18c. DATE</b> 08/10/2006
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# HALLIBURTON

International Trade Compliance • 2101 CityWest Blvd., Bldg. 2 • Houston, TX 77042-3201  
P.O. Box 42806 Houston, TX 77242  
Phone 713.839.2000 • Fax 713.839.4564

Deputy Director,  
Office of International Programs  
U.S. Nuclear Regulatory Commission  
Mail Stop O-4E21  
11555 Rockville Pike  
Rockville, Maryland 20852

July 27, 2006

**RE: Application for Specific License for the Export of Americium in amounts exceeding SI Limits – NRC 10 CFR, Part 110**

Deputy Director,

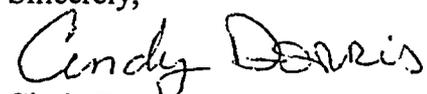
Halliburton Energy Services, Inc. is applying for a specific license to export and sell five (5) each  $^{241}\text{Am}$  Curie Am241Be Logging Sources, four (4) each  $^{137}\text{Cs}$  Curie Cs-137 Sources, three (3) each .2  $^{137}\text{Cs}$  Curie Cs-137 Sources, and three (3) .2 Curie Am241Be Logging Sources to China Oilfield Services Limited (COSL) in China. These materials will be used to calibrate downhole well logging equipment for the completion of an oil or gas well prior to the production, or to enhance production of existing wells in China. These items are subject to the export licensing jurisdiction of the U. S. Nuclear Regulatory Commission. Enclosed please find Halliburton's check in the amount of \$1600.00 (Sixteen hundred dollars) as the application fee for this license.

Halliburton Energy Services in consideration of Title 10, Part 110.42 (c) of the Code of Federal Regulations submits that the NRC-Controlled Items proposed for export are not inimical to the common defense and security of the United States and the proposed exports are consistent with the policies and objectives of the United States Government.

Included in the application package please find a completed and signed copy of NRC Form 7, "Application for License to Export Nuclear Material and Equipment," with attachment.

If you should have any questions please do not hesitate to call or write at the above number or address.

Sincerely,

  
Cindy Dorris

Halliburton Energy Services  
International Trade Compliance

Ph: 713-839-4566

Fax: 713-839-4564

Email: [cynthia.dorris@halliburton.com](mailto:cynthia.dorris@halliburton.com)

Enc: NRC Form 7

Halliburton Energy Services Attachment 1

Halliburton Check for Application

Support Documents

**Halliburton Energy Services (HES)  
Application Reference Number HES4012**

**Application Information:**

Halliburton is one of the world's largest providers of products and services to the oil and gas industries. Halliburton Energy Services Group (HES) offers a broad array of products and services to upstream oil and gas customers worldwide, ranging from the manufacturing of drill bits and other downhole and completion tools to pressure pumping services.

The Drilling and Formation Evaluation segment is primarily involved in drilling and evaluating the formations related to borehole construction and initial oil and gas formation evaluation. The products and services in this segment incorporate integrated technologies, which offer synergies related to drilling activities and data gathering.

**License Application and Request:**

The purpose of this license application is to request specific authorization to sell and export five each  $^241\text{Am}$  Curie Am241Be Logging Source used in Compensated Thermal Neutron (CTN) Tool, four each  $^{137}\text{Cs}$  Curie Cs-137 Source, three each .2  $^137\text{Cs}$  Curie Cs-137 Sources, and three each .2 Curie Am241Be Logging Source used in the CTN verifier for calibration of CTN Tool to be used by *China Oilfield Services Limited (COSL) Tianjing Branch* in China. The following information is provided in support of this application and to ensure the NRC that Halliburton is in compliance with the rules and regulations set forth in the export-import provisions of the Code of Conduct in the Safety and Security of Radioactive Sources.

**Description of Equipment:**

These Neutron Tools use Am241 encapsulated source (sources). The material is placed into a special capsule that is threaded on one end. These capsules are designed to be screwed inside of an electronic wireline logging sonde. The sources are lowered into the well formations inside the sonde which is tethered on the end of a steel cable. The sonde is equipped with a transmitter and detector section.

Attachment 1 – Support Documents

The Ambe source emits neutron into the rock formations and the detector section accurately measures the porosity, fluid type and lithology information for real-time decision making and wireline replacement applications. Knowledge of rock properties is essential in the exploration of oil.

Description	Sold Value (rounded)
1 Curie Am241Be Logging Source with transport shield used in Compensated Thermal Neutron (CTN) Tool.	[REDACTED]
.2 Curie Am241Be Logging Source sealed source installed in Compensated Thermal Neutron (CTN) verifier for calibration of CTN Tool	[REDACTED]
1 Curie Cs-137 Source with transport shield used in Stabilized Litho Density (SLD) Tool	[REDACTED]
.2 uCurie Cs-137 Source sealed source for calibration of passive Dual Gamma Ray (DGR) Tool and Stabalized Litho-Density (SLD) Tool	[REDACTED]

**Recipient's Technical and Administrative Capability, Resources, and Regulatory Structure:**

Licensed materials will be stored at approved *China Oilfield Services Limited (COSL) Tianjing Branch* facilities. These facilities are Certificated by the Operation Health Certificate in accordance with the Safety Ordinance for Radioactive Isotopes and Installation promulgate by the State Council. *China Oilfield Services Limited (COSL) Tianjing Branch* RA Storage Control process (see attached).

**Concern for Diversion:**

As noted in *COSL* attached letter to Halliburton, *COSL* has acknowledged the importance of and supports safe operations, transportation, and secure storage of RA Sources. *China Oilfield Services Limited (COSL) Tianjing Branch* states they have no intention of using the RA Sources outside China nor will they release or transfer to other parties.

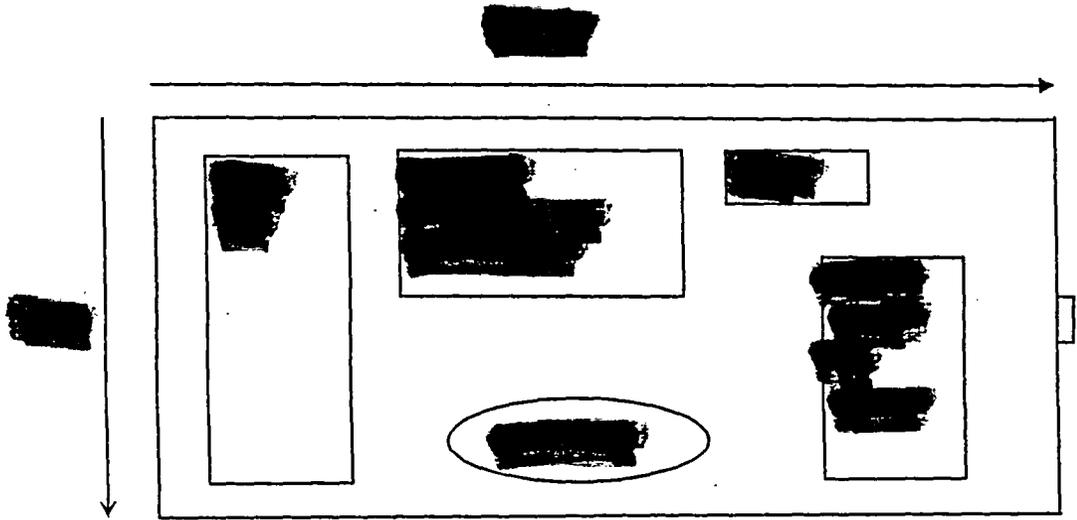
All sources are labeled with the name, strength, and source number. Radiation leak tests are performed monthly. Source warehouse is furnished with radioactive checking devices..

QHSE supervisors are responsible for checking all sources on a regular maintenance schedule and for maintaining records. QHSE, guards and warehouse attendants are also responsible for frequent storage facility inspections.

Halliburton has been doing business with *China Oilfield Services Limited (COSL) Tianjing Branch* since 1996.

**Intermediate and Ultimate Consignees:**

<b>NRC Required Info for COSL</b>	
<b>Contract No.(s):</b>	Z05SLCS-A01U142 Z05SLCS-A01U144 Z05SLCS-A01U145 Z05SLCS-A01U146 Z05SLCS-A01U147 Z05SLCS-A01U148
<b>Purchasers Name:</b>	China Oilfield Services Limited (COSL)
<b>Purchasers Physical Address:</b>	P.O. Box 232, Beijing P.R. China (Beijing East Yanjiao) China
<b>Ultimate Consignee Name:</b>	China Oilfield Services Limited (COSL) Tianjing Branch **
<b>Consignee Physical Address:</b>	P.O. Box 11, Potou 524057, Zhangjiang China
<b>End Users Name:</b>	China Oilfield Services Limited (COSL) Tianjing Branch **
<b>End Users Physical Address:</b>	P. O. Box 11, Potou 524057, Zhangjiang China
<b>Storage Facility Physical Address:</b>	Cui Jia Dian Cun, Bei Zha Kou Town No. 19, Dong Ting Road, Street 7 Jin Nan District, Tianjin Tang Gu Developing Area Tianjin, China
<b>A schematic of the storage facility</b>	Attached
<b>Storage and security process in place for the control of the RA materials.</b>	Attached



**Source Storage Area Schematic**

JAN-1-2002 12:25 FROM:

01/08 06 TUE 08:07 FAX 02265299478

FANGZHOU CARGO FREIGHT FO

P11

001

# 中海油田服务有限公司

China Oilfield Services Limited

Tel: 86 22 66204669 Fax: 86 22 66204669  
Add: No.16, 3 Street, Dongying Road TEDA, Tianjin China

To whom it may concern:

Dear Sir or Madam:

China Oilfield Services Limited (COSL) was a subsidiary of China National Offshore Oil Corp (CNOOC) with the worldwide provision of well-bore technical service of internationally accepted quality and standards levels as its specific purpose.

As a specialized services company, COSL provides logging services for its worldwide oilfield customers, where radioactive (RA) sources are commonly required in the conventional logging services.

Having worked in the drilling industry for more than 10 years, COSL understands the nature of the RA sources, therefore attaches great importance to safe operation, controlled transportation and secure storage of the RA sources, strictly in accordance with the regulations and procedures established by the competent authorities and regulation for use worldwide.

COSL states that the RA sources purchased from Halliburton will be used for logging services solely in its operation, and will control the sources in the country of use according to IETA international standards. COSL will not export RA sources to countries restricted by US export regulations.

Should you require additional information, please contact me



China Oilfield Services Limited  
Date: 2002-7-18

## 中海油田服务有限公司

**China Oilfield Services Limited**

**Tel: 86 22 66204669 fax: 86 22 66204669**

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Should you require additional information, please contact me

China Oilfield Services Limited

Date: 2006-7-18



**Radiation Operation Health Certificate**  
**放射性同位素工作卫生许可证**

Health Supervision certificate NO

Name of Organization: China Oilfield Services Limited Tianjing Branch

Address: Tanggu Petroleum Village

Person in Charge: Cheng Guo Qing

Date of Expiry: July.29,2007

Certified Project: Radioactive Isotope Operations

Refer to copies for Constraints and Limitation

Issued By Tianjing Health Bureau  
(Stamp)  
July.29,2002



# 放射性同位素工作许可证

卫监放证字(02)第0075号

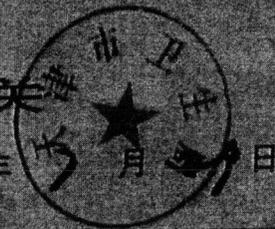
根据国务院发布的《放射性同位素与射线装置放射防护条例》的规定，经审查准予在许可范围内从事放射性同位素工作，特发此证。

单位名称：**中石油天津分公司**  
地 址：**塘沽石油新村二区**  
有效期限：至**2007**年**7**月**29**日止

负 责 人：**程国庆**  
上级主管部门：**中石油销售有限公司**

(许可范围内见附本)

发证机关



2002年 7月 29日

### Safety and Regulation of Handling Radioactive Waste in Storage Area.

1. All equipment including Power supply, ventilation installation, communication facilities, monitor & alarm facilities must be available at any time.
2. Ventilation must be run for at least 30 minutes before entering in the storage house.
3. At least 3 persons are needed for putting discarded radioactive sources in the storage pit.
4. The maximum pit covers that can be opened at the same time are 3.
5. Different sort of discarded radioactive sources must be put into corresponding pits of corresponding area.
6. The discarded radioactive sources should be put in pit in order. The maximum radiation level is 0.05msvh 0.5 meter from the surface of any pit cover.
7. After the job, put the pit cover on first, shut down the ventilation installation for open area then shut down the ventilation installation for pit.
8. Under normal operation, no personnel is allowed to go inside the source pit. In special situation, approved by the division leader, only one staff can enter into the pit for restricted time.
9. No smoking in storage area.
10. Before operating, checking the lift equipment and make sure the operating handle is not electron leakage first.
11. No open flame in storage area. If needed, it can be done only in the situation that it is approved by the manager of the storage area and fire fighting equipment is ready.
12. Authorized staffs who take care of the storage area, must guard the storage area against burglary. And inventory must be checked regularly. Check for rain leakage during rainy season and act proactively to stop pit flooding by leaky rain.
13. Checking the instrument first before entering the working area. Radioactive PPE must be worn in storage area.
14. Abide by the regulation strictly.
15. No touching of the radioactive stuff directly with hands or any other part of the body.
16. No eating and drinking and no storage of any other material in the storage area.
17. Dose survey is needed before leaving the storage area.
18. Do not wear the radioactive PPE outside the storage area. Do not take radioactive contaminated PPE and material outside the storage area.

## 天津市放射性废物库安全防护制度

- 一、库区设施必须保持完好。供电、通风、通讯、监视报警等设备要保持良好工作状态。
- 二、人员进入放射性废物储存库工作前必须先对库内进行通风，先打开废物坑通风机，再打开大厅通风机，时间不少于30分钟方能入库操作。
- 三、放射性废物入坑操作应不少于3人进行。
- 四、一次同时打开的坑盖板数不得超过3块。
- 五、入库的放射性废物应分类、分坑、分区存放。
- 六、放射性废物在坑内的叠放方式应逐层堆放，坑盖板上0.5米处的剂量率不应大于0.05msv/h。
- 七、吊运结束应先盖盖板，再关闭大厅通风机，最后关闭废物坑通风机。
- 八、一般情况下，工作人员不得下坑操作，如遇特殊情况，在所领导批准的情况下，可以下坑操作，但一次只限一人，且严格控制在坑内停留的时间。
- 九、工作人员严禁在库区内吸烟。
- 十、工作人员入库操作时，检查天车是否运转正常，钢丝绳断丝是否过多，操作手柄是否漏电。
- 十一、库区内不得明火作业，如需明火作业时，必须经库主任批准并做好防火准备方可施工。
- 十二、库房专人管理，定期检查防范措施执行情况，核对废物是否丢失，雨季要注意库房是否漏雨，以防止废物被水浸泡。
- 十三、进入辐射工作场所时，必须检查仪器设备是否正常，必须穿戴防护衣具。
- 十四、在工作中要严格遵守操作规程，规范的操作方法，绝对统一指挥，严禁违章操作。
- 十五、在任何情况下均不允许用裸露手或者身体其他任何部位直接接触辐射物质或被辐射污染的物件。
- 十六、辐射工作场所内严禁进食、饮水和存放实物等。
- 十七、工作人员离开辐射工作场所前应认真进行剂量监测检查。
- 十八、工作人员不得穿戴个人防护用品到非辐射工作场所活动，严禁将污染物件带出辐射工作场所。