

NRC FORM 7 (02-2016) 10 CFR 110	 U. S. NUCLEAR REGULATORY COMMISSION	APPROVED BY OMB: NO. 3160-0027 EXPIRES: 11/30/2018	Estimated burden per response to comply with this mandatory collection request: 2.4 hours. This submittal is reviewed to ensure that the applicable statutory, regulatory, and policy considerations are satisfied. Send comments regarding burden estimate to the FOIA, Privacy, and Information Collections Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to Infocollections.Resource@nrc.gov , and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-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.
APPLICATION FOR NRC EXPORT OR IMPORT LICENSE, AMENDMENT, RENEWAL, OR CONSENT REQUEST(S) (See Instructions on Pages 4 and 5)			

PART A. FOR NRC USE ONLY	<input checked="" type="checkbox"/> PUBLIC OR <input type="checkbox"/> NON-PUBLIC	DATE RECEIVED: 4/3/18
LICENSE NUMBER: PKB 220.0	DOCKET NUMBER: 11006304	ADAMS ACCESSION NUMBER:

PART B. TO BE COMPLETED FOR ALL LICENSES, AMENDMENTS, RENEWALS, OR CONSENT REQUESTS
 (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 Baker Hughes Oilfield Operations, LLC Attn: James Elrod 2001 Rankin Road Houston, Texas 77073	1a. NAME OF APPLICANT'S CONTACT James Elrod	1b. APPLICANT'S REFERENCE NUMBER BHI-North Sudan	1c. PHONE NUMBER (713) 879-3627	1d. FAX NUMBER (713) 879-0176
		1e. E-MAIL ADDRESS jim.elrod@bakerhughes.com		

2. TYPE OF ACTION REQUESTED (Check One)				
<input checked="" type="checkbox"/> EXPORT (Parts B, C, E)	<input type="checkbox"/> IMPORT (Parts B, D, E)	<input type="checkbox"/> AMENDMENT/RENEWAL Current License Number: _____	<input type="checkbox"/> CONSENT REQUEST (Parts B, C) Current License Number: _____	

3. CONTRACT NUMBER(S) N/A	4. FIRST SHIPMENT DATE See Attachment A	5. LAST SHIPMENT DATE See Attachment A	6. PROPOSED EXPIRATION DATE See Attachment A
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PART C. TO BE COMPLETED FOR EXPORT 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 None	8. NAME(S) / ADDRESS(ES) OF INTERMEDIATE FOREIGN CONSIGNEE(S) None	9. NAME(S) / ADDRESS(ES) OF ULTIMATE FOREIGN CONSIGNEE(S) See Attachment A - Page 1
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7a. FUNCTION(S) PERFORMED/SERVICE(S) PROVIDED Not Applicable	8a. INTERMEDIATE USE(S) Not Applicable	9a. ULTIMATE END USE(S) See Attachment A - Page 1
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10. DESCRIPTION OF RADIOACTIVE MATERIALS, SEALED SOURCES, NUCLEAR FACILITIES, EQUIPMENT, OR COMPONENTS; FOR NUCLEAR EQUIPMENT INCLUDE TOTAL DOLLAR VALUE OF EQUIPMENT FOR EXPORT See Attachment A - Pages 2 and 3	10a. MAX TOTAL VOLUME / ELEMENT WGT (KG), OR TOTAL ACTIVITY (TBq) See Attachment A - Pages 2 and 3	10b. MAX ENRICHMENT OR WGT % See Attachment A - Pages 2 and 3	10c. MAX ISOTOPE WGT (KG) See Attachment A - Pages 2 and 3
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11. FOREIGN OBLIGATIONS (BY COUNTRY AND BY PERCENTAGE OF MAXIMUM TOTAL VOLUME) Not Applicable

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U. S. NUCLEAR REGULATORY COMMISSION

APPLICATION FOR NRC EXPORT OR IMPORT
LICENSE, AMENDMENT, RENEWAL, OR CONSENT REQUEST(S) (Continued)

LICENSE NUMBER 8XB220-00	DOCKET NUMBER 110010804	ADAMS ACCESSION NUMBER	<input checked="" type="checkbox"/> PUBLIC OR <input type="checkbox"/> NON-PUBLIC
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PART D. TO BE COMPLETED FOR IMPORT 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.)

12. NAME(S) / ADDRESS(ES) OF FOREIGN SUPPLIERS AND/OR OTHER PARTIES TO IMPORT N/A	13. NAME(S) / ADDRESS(ES) OF INTERMEDIATE CONSIGNEE(S) N/A	14. NAME(S) / ADDRESS(ES) OF ULTIMATE U. S. CONSIGNEE(S) Baker Hughes Oilfield Operations, LLC Houston Technology Center 2001 Rankin Road Houston, Texas 77073
12a. NRC EXPORT LICENSE NUMBER(S) (if applicable) N/A	13a. LICENSE NUMBER(S) / EXPIRATION DATE(S) N/A	14a. LICENSE NUMBER(S) / EXPIRATION DATE(S) Texas License L04452 Expiration: November 30, 2022
	13b. INTERMEDIATE USE(S) N/A	14b. ULTIMATE END USE(S) Evaluation and re-distribution for Oil and Gas Well Logging Operations
15. DESCRIPTION OF RADIOACTIVE MATERIALS, SEALED SOURCES, NUCLEAR FACILITIES See Attachment A - Pages 2 and 3	15a. MAX TOTAL VOLUME / ELEMENT WGT (KG), OR TOTAL ACTIVITY (TBq) See Attachment A - Pages 2 and 3	15b. MAX ENRICHMENT OR WGT % See Attachment A - Pages 2 and 3
		15c. MAX ISOTOPE WGT (KG) See Attachment A - Pages 2 and 3


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

N/A

PART E. TO BE COMPLETED FOR ALL LICENSES, AMENDMENTS, RENEWALS OR CONSENT REQUEST(S)

17. ADDITIONAL INFORMATION PROVIDED ON PAGES 3, 4, AND/OR ON SEPARATE SHEETS? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	17a. COPIES OF RECIPIENTS' AUTHORIZATIONS PROVIDED? <input type="checkbox"/> YES <input checked="" 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.

18a. PRINT NAME AND TITLE OF AUTHORIZED OFFICIAL RALF STEPHAN WIRELINE SERVICES SUPPLY CHAIN DIRECTOR	18b. SIGNATURE -- AUTHORIZED OFFICIAL 	18c. DATE 3/14/18
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James K Elrod
Radiation Safety Officer
Baker Hughes Oilfield Operations, LLC
Houston Technology Center
Houston, Texas 77073
United States of America

March 16, 2018

Subject: North Sudan Export Application

To: Joanne Savoy
Stephen C. Baker

Dear Joanne and Stephen,

The purpose of this letter is to request the approval of an export license of radioactive material for future oil well logging operations in the country of North Sudan. The attached application and supporting documentation outlines our request and adheres to all government regulations set forth by the US Nuclear Regulatory Commission.

This application is in support of all Baker Hughes oilfield operations and includes detailed information about the type and quantities of radioactive material we will need to export into North Sudan to support our Wire-line, Logging While Drilling (LWD) operations. The application also includes a security plan, which covers the location storage, job-site and transportation security.

Please note that the total quantity of radioactive material requested will not be exported in a single shipment and this quantity is being requested in anticipation of covering both initial and future operational requirements. With the startup of our operations, we will only export a fraction of the total quantity requested as stated in our supporting documentation.

Any information you have questions or concerns with feel free to contact me at any time. Baker Hughes will be more than willing to work with any issues you may have. My contact information is provided in the supporting documentation and on this letter.

Regards,

A handwritten signature in blue ink, appearing to read 'James Elrod', written over the printed name.

James Elrod
Radiation Safety Officer
Baker Hughes Houston Technology Center

ATTACHMENT A

10/10/2020

Additional Supporting Information to NRC Form 7

(Boxes 4, 5, & 6) Explanation of quantities and dates – Not more than four sets of the quantities requested are required for the initial mobilization which is planned within 2 months of the granting of this license or as soon as possible thereafter. A set consists of 1 of each item listed in the response for Box 10. The remaining quantities are for potential growth and will be exported only as and when required. The proposed expiration of 3 years allows operational time in country for business review and renewal of license. The last shipment date will correspond with the expiration date of this license.

(Box 9) Name(s) / Address(es) of Ultimate Foreign Consignee

Principal Business name and main office:

National Upstream Solution Co Ltd.
22/1 Block 9/10
Africa Street
Khartoum, Sudan

Locations of 2 primary Bunkers for storage of radioactive material:

NUS Rabak Base
White Nile State
Rabak, Ministry of Petroleum
Near Kosti Bridge
13°9'8"N 32°44'4"E

NUS Heglig Base
West Kordofan State,
Heglig, Contractors Street
South of Heglig Airport
9°59'54"N 29°24'13"E

(Boxes 9a) Information on end use/user – The sealed sources are intended to be used in oil and gas well logging operations and the maintenance of oil well logging instruments.

The end user will be National Upstream Solutions Co. LTD. The sources and equipment will remain solely under the control of Baker Hughes employees for the entire length of the agreement contract. During this time Baker Hughes employees will be training NUS employees on proper use and security of the radioactive material, but solely remain in control of the radioactive material.

(Boxes 10, 10a, 10b, 10c and 15, 15a, 15b, 15c) List/description of sources

In addition to the double-encapsulated sources (refer to Attachment A, Box 17, Additional Information) that are placed in the logging instruments when they are used in a well; we also use a variety of smaller sources for testing and calibration both in the laboratory and at the well-site.

BHOO requests an NRC license to export the quantity of sources as listed in the following table for our wire-line operations agreement with NUS in North Sudan. This quantity will not be exported in one shipment. The quantities exported will be in small increments dependent upon the quantity needed for startup operations and then future needs to support expanding operations.

This Chart indicates sources requested for Wire Line Operations in North Sudan.

Type	Isotope	Individual Source Strength	Qty	Total Curie	Use	Type of material	Physical Form
Density Logging	Cs137	2.5 Ci	8	20	Density logging	Byproduct material	Special form (OWL)
Neutron Logging	Am241Be	15 to 15.5 Ci	8	120 to 124	Neutron logging	Byproduct material	Special form (OWL)
Well-site Verifier	Am241Be	400 mCi	8	3.2	Neutron verifier	Byproduct material	Special form
Lab Source	Am241Be	75 to 100 mCi	2	0.150 to 0.200	Lab Calibration	Byproduct material	Special form
Well-site Verifier	Ra226	2.5 µCi	8	0.00002	Gamma Ray calibrator	Natural material	Sealed source
Lab Source	Am241Be	1 mCi	4	0.004	Lab Calibration	Byproduct material	Special form
Lab Source	Cs137	10 µCi	4	0.00004	Lab Calibration	Byproduct material	Special form
Lab Source	Cs137	100 µCi	4	0.0004	Lab Calibration	Byproduct material	Special form
Production Logging	Am 241	150 mCi	5	0.75	Production Logging	Byproduct material	Special form
Production Logging	Cs 137	100 mCi	5	0.50	Production Logging	Byproduct material	Special form
Crystal Detectors	Cs 137	500 nCi	20	0.00001	Density tool Verification	Byproduct material	Solid
Crystal Detectors	Cs 137	325 nCi	20	0.000006	Density tool Verification	Byproduct material	Solid
Crystal Detectors	Cs 137	295 nCi	20	0.000006	Density tool Verification	Byproduct material	Solid
Collar Markers	Co 60	5 µCi	200	0.001	Marking Drill Collar Location	Byproduct material	Solid

This Chart indicates sources requested for Drilling Services Operations in North Sudan.

Type	Isotope	Individual Source Strength	Qty	Total Curie	Use	Type of material	Physical Form
Density Logging	Cs137	2.5 Ci	4	10	Density logging	Byproduct material	Special form (OWL)
Neutron Logging	Am241Be	5 Ci	4	20	Neutron logging	Byproduct material	Special form (OWL)
Well-site Verifier	Am241Be	60 mCi	10	0.6	Neutron verifier	Byproduct material	Special form
Lab Source	Am241Be	200 mCi	2	0.4	Lab Calibration	Byproduct material	Special form
Lab Source	Am 241	2 mCi	2	0.004	Gamma Ray calibrator	Natural material	Sealed source
Density Detectors	Cs 137	198 nCi	12	0.000003	Lab Calibration	Byproduct material	Special form
Density Detectors	Cs 137	42 nCi	12	0.0000005	Lab Calibration	Byproduct material	Special form

Box 17 Additional Information

Baker Hughes Oilfield Operations Inc ("BHOO") intends to lease equipment which will include radioactive material that will be used by NUS in North Sudan in operations providing oil field services, including oil well logging. Oil well logging involves conveying specially designed "logging" instruments into the wells to measure properties of the rocks and fluids such as resistivity and porosity.

The sources and equipment will remain solely under the control of Baker Hughes employees for the entire length of the agreement contract.

BHOO offers a full range of well logging services including those requiring density and neutron porosity devices which provide fundamental measurements used in almost every oil or gas well globally. These devices utilize special form sealed sources containing either Cs137 or Am241. The sources used during down-hole operations also meet Oil Well Logging (OWL) specifications and are at a minimum double encapsulated to protect against the high pressures and corrosive fluids encountered in oil wells. Encapsulated radioactive sources can be acquired in many countries as they are widely used in other industries such as medical and food processing, however double encapsulated OWL sources are unique to the well logging industry. Vendors in the US supply all the OWL encapsulated sealed sources used by well logging service companies. For this reason BHOO wishes to export to NUS in North Sudan a defined quantity of sealed sources produced to our specifications by our suppliers QSA Global, Gammatron, and Eckert & Ziegler.

The only criterion in "10CFR 110.42 Export Licensing Criteria" that applies to the sealed sources which are the subject of this application is paragraph (c) which requires that "the proposed export is not inimical to the common defense and security". We believe, and hope that the Commission will agree, that the Category 3 quantity of byproduct material contained in the individual sealed sources that we wish to export, would not constitute a threat to the defense and security of the US. The information supplied in this application supports this position.

In the event of down-hole abandonment of sources, BHOO requests that the export limits imposed under this license be applicable only to operational sources in-country. BHOO requests approval to be able to replace any abandoned sources without amendment or change to the license, upon appropriate notifications to the NRC.

Security and Safety Plan (see NUS Radiation Safety & Security Procedures)

The Safety and Security plan are provided by NUS and includes the construction of the radiation storage bunker, (see Radiation Storage Layout)

For the security measures for storage and jobsite, (see Section 4 pages 7 thru 11).

For security measures during transportation of the radioactive material, (see Section 9 pages 35 thru 37).

Contact Information

Contact people in regards to receiving confidential information from the NRC, Homeland Security, or any other related government agency shall be the following:

Jim Elrod
Radiation Safety Officer
Houston Technology Center
Office: 713-879-3627
Cell: 713-205-3031
Fax: 713-879-0176

Dylan Dailey
Radiation Safety Officer
Global HSE Operations
Office: 713-879-1052
Cell: 903-407-1542
Fax: 713-879-2667

Brian Caldwell
Global Director HSE Radiation Team
Office: 713-879-2028
Cell: 832-451-0754
Fax: 713-879-2667