

## EXPORT LICENSE

NRC FORM 250P  
(12/10)

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

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LICENSE EXPIRES: June 30, 2013

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## LICENSEE

QSA Global, Inc.  
Attn: Lori Podolak  
40 North Avenue  
Burlington, MA 01803

APPLICANT'S REFERENCE: IQ-2012

## ULTIMATE FOREIGN CONSIGNEE(S)

Listed on Page 3

## INTERMEDIATE CONSIGNEE(S) IN FOREIGN COUNTRY(IES)

Listed on Page 3

## OTHER PARTY(IES) TO EXPORT

NONE

COUNTRY(IES) OF ULTIMATE DESTINATION: Iraq

**CONDITIONS, NOTES, AND DESCRIPTIONS OF 10 CFR PART 110, APPENDIX P,  
BYPRODUCT AND SOURCE MATERIALS TO BE EXPORTED**

(NOTE: SEE PAGE 2 FOR DEFINITIONS OF CATEGORY 1 AND CATEGORY 2)

Export to Iraq of Category 2 quantities of Am-241/Be, Co-60, Ir-192 and Se-75 sources for industrial radiography, oil well logging and gauging; and Category 3 quantities of Am-241, Cs-137 and Cf-252 sources for oil well logging and gauging. **See Page 3 for total number of sources and maximum activity levels for each source.**

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, if not already submitted with your application, must submit information required by 10 CFR §110.32(d) and pertinent documentation required by 10 CFR §110.32(g) at least **24 hours prior to shipment**. See Page 2 for Mandatory Pre-shipment Notifications.

Licensee shall submit by February 1 of each year one copy of a report of all americium shipments (under this license or under a general license) during the previous calendar year required by 10 CFR §110.54(b). The report must include: (1) A description of the material, including quantity; (2) Approximate shipment dates; and (3) A list of recipient countries, end users, and intended use keyed to the items shipped.

License expiration date is based on established limits.

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 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 NRC.

THIS LICENSE IS INVALID UNLESS SIGNED BELOW  
BY AUTHORIZED NRC REPRESENTATIVE

NAME AND TITLE:

*Stephen Dembek*  
Stephen Dembek, Acting Deputy Director  
Office of International Programs

DATE OF ISSUANCE: June 20, 2012

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# MANDATORY PRE-SHIPMENT NOTIFICATIONS PER 10 CFR PART 110.50(c)

The following Prior Shipment Notifications must be made to both the NRC and, in case of exports, the government of the importing country in advance of each shipment:

Prior Shipment Notifications to the NRC are to be emailed to [hoo.hoc@nrc.gov](mailto:hoo.hoc@nrc.gov) (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 301-816-5100.

Prior Shipment 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 Prior Shipment 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 301-415-2344.

**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) <sup>1</sup>	Terabequerels (TBq)	Curies(Ci) <sup>1</sup>
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 <sup>2</sup> (Pu-238)	60	1,600	0.6	16
Plutonium-239/Beryllium <sup>2</sup> (Pu-239/Be)	60	1,600	0.6	16
Promethium-147 (Pm-147)	40,000	1,100,000	400	11,000
Radium-226 <sup>3</sup> (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 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

$$\sum_1^n \left[ \frac{R_1}{AR_1} + \frac{R_2}{AR_2} + \frac{R_n}{AR_n} \right] \geq 1$$

<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>2</sup> The limits for exports of Pu-238 and Pu-239/Be can be found in § 110.21.

<sup>3</sup> Discrete sources of Radium-226

Antares Datensysteme GmbH  
Rudolf-Diesel-Str. 6-8  
Bremen, Germany

Al-Kawther Co. Group  
Q901-St 5-House No. 18  
Karrada, Baghdad, Iraq

Al-Mubarak International Group Ltd  
Al-Masbah Street  
Al-Aasam Building  
Ground Floor Office 2  
Baghdad, Iraq

Turgen International  
Khalifa Street  
Abu Dhabi, United Arab Emirates

IPSI France  
102 Rue JB Charcot  
92400 Courbevoie, France

OilSERV for Oil Field Services  
South Industrial Area  
Old Kirkuk Road  
Erbil, Kurdistan, Iraq

Al Nabaa Co. Engineering Services Ltd  
D # 902, St. # 14, B #32  
Baghdad, Iraq

Al-Qabas Oil Services Ltd.  
Al-Mansour  
14 Rammadhan Street  
Building No. 4, M. 609, z.22  
Baghdad, Iraq

Al-Mubarak International Group Ltd.  
Al-Masbah Street  
Al-Aasam Building  
Ground Floor Office 2  
Baghdad, Iraq

Inspecta International Co. W.L.L.  
Oilfield Inspection & Offshore Services  
HY Alsalam  
Mahalla 410  
Zuqaq 23  
Flat No. 01  
Baghdad, Iraq

SGS Gozette A.S.  
Gulan Street Dream City No 1201  
Erbil, KRG, Iraq

### Sources Authorized for Export

TOTAL NUMBER OF SOURCES	NUCLIDE	APPLICATION	MAXIMUM ACTIVITY PER PACKAGE
600	Ir-192	Industrial radiography	8.89 TBq
20	Co-60	Industrial radiography or gauging	29.6 TBq
100	Se-75	Industrial radiography	46.3 TBq
100	Cs-137	Oil well logging or gauging	0.56 TBq
50	Cf-252	General neutron	0.080 TBq
100	Am-241/Be	Oil well logging, general neutron or gauging	0.74 TBq
30	Am-241	Gauging	0.37 TBq

[illegible]