



U.S. Department  
of Transportation

Pipeline and  
Hazardous Materials  
Safety Administration

East Building, PHH-23  
1200 New Jersey Ave, SE  
Washington, D.C. 20590

COMPETENT AUTHORITY CERTIFICATION FOR A  
NON-FISSILE OR FISSILE EXCEPTED  
URANIUM HEXAFLUORIDE PACKAGE DESIGN  
CERTIFICATE USA/0681/H(U) , REVISION 8

REVALIDATION OF UNITED KINGDOM COMPETENT AUTHORITY  
CERTIFICATE GB/3572/H(U)

The Competent Authority of the United States certifies that the radioactive material package design described in this certificate satisfies the regulatory requirements for a H(U) package for non-fissile or fissile excepted quantities of uranium hexafluoride as prescribed in the regulations of the International Atomic Energy Agency<sup>1</sup> and the United States of America<sup>2</sup> The package design is approved for use within the United States for import and export shipments made in accordance with applicable international and domestic transport regulations.

1. Package Identification - 48X or 48Y cylinder with residual (heel) quantity of uranium hexafluoride.
2. Package Description - 48X or 48Y cylinders as described in United Kingdom Certificate of Competent Authority No. GB/3572/H(U), Rev 8, subject to the special conditions listed in Section 5 of this certificate.
3. Authorized Contents - Residual quantities of solid, non-fissile or fissile excepted uranium hexafluoride as described in United Kingdom Certificate of Competent Authority No. GB/3572/H(U), Rev 8, and the special conditions listed in Section 5 of this certificate.
4. General Conditions -
  - a. Each user of this certificate must have in his possession a copy of this certificate and all documents necessary to properly prepare the package for transportation. The user shall prepare the package for shipment in accordance with the documentation and applicable regulations.

---

<sup>1</sup> "Regulations for the Safe Transport of Radioactive Material, 2018 Edition, No. SSR-6, Revision 1" published by the International Atomic Energy Agency (IAEA), Vienna, Austria.

<sup>2</sup> Title 49, Code of Federal Regulations, Parts 100-199, United States of America.

**CERTIFICATE USA/0681/H(U) , REVISION 8**

- b. Each user of this certificate, other than the original petitioner, shall register his identity in writing to the Office of Engineering and Research, (PHH-23), Pipeline and Hazardous Materials Safety Administration, U.S. Department of Transportation, Washington D.C. 20590-0001.
- c. This certificate does not relieve any consignor or carrier from compliance with any requirement of the Government of any country through or into which the package is to be transported.
- d. Records of Management System activities required by Paragraph 306 of the IAEA regulations<sup>1</sup> shall be maintained and made available to the authorized officials for at least three years after the last shipment authorized by this certificate. Consignors in the United States exporting shipments under this certificate shall satisfy the applicable requirements of Subpart H of 10 CFR 71.

5. Special Conditions -

- a. Cylinders transported under this certificate must have been designed and manufactured in accordance with the ANSI N14.1 standard in effect at the time of manufacture.
- b. Cylinders transported under this certificate must be operated and maintained in accordance the the ANSI N14.1 standard in effect at the time of shipment.
- c. Cylinders transported under this certificate must contain a quantity of uranium hexafluoride which is compliant with both Title 49 of U.S. Code of Federal Regulations and the ANSI N14.1 standard in effect a the time of shipment.

6. Marking and Labeling - The package shall bear the marking USA/0681/H(U) in addition to other required markings and labeling.

7. Expiration Date - This certificate expires on July 31, 2030. Previous editions which have not reached their expiration date may continue to be used.

**CERTIFICATE USA/0681/H(U) , REVISION 8**

This certificate is issued in accordance with paragraph(s) 805 of the IAEA Regulations and Section 173.477 of Title 49 of the Code of Federal Regulations, in response to the June 25, 2025 petition by Honeywell, Metropolis, IL, and in consideration of other information on file in this Office.

Certified By:



William Quade  
Acting Associate Administrator for  
Hazardous Materials Safety

July 09, 2025

(DATE)

Revision 8 - Issued to endorse United Kingdom Certificate of Approval No. GB/3572/H(U), Rev 8, for ANSI N14.1 compliant cylinders.

GB/3572/H(U) (Rev.8)

## **CERTIFICATE OF APPROVAL OF PACKAGE DESIGN FOR THE CARRIAGE OF RADIOACTIVE MATERIAL**

This is to certify that for the purposes of the Regulations of the International Atomic Energy Agency

- The Competent Authority of Great Britain in respect of inland surface transport, being the Office for Nuclear Regulation;
- The Competent Authority of the United Kingdom of Great Britain and Northern Ireland in respect of sea transport, being the Secretary of State for Transport;
- The Competent Authority of the United Kingdom of Great Britain and Northern Ireland in respect of air transport, being the Civil Aviation Authority; and
- The Competent Authority of Northern Ireland in respect of road transport, being the Department of Agriculture, Environment and Rural Affairs - Northern Ireland

approve the package design specified in Section 1 of this certificate, as submitted for approval by URENCO UK Limited (see Section 5)

as: Type H(U)

by: road and rail in Great Britain, and sea.

Packaging identification: 48X or 48Y uranium hexafluoride cylinders without thermal protection

Packages manufactured to this design meet the requirements of the regulations and codes on pages 3 and 4, relevant to the mode of transport, subject to the following general condition and to the conditions in the succeeding pages of this certificate.

In the event of any alteration in the composition of the package, the package design, the management system(s) associated with the package or in any of the facts stated in the application for approval, this certificate will cease to have effect unless the Competent Authority is notified of the alteration and the Competent Authority confirms the certificate notwithstanding the alteration.

Effective From and Expiry Date: This certificate is effective from 01 August 2025 and expires on 31 July 2030 (see Section 5).

COMPETENT AUTHORITY IDENTIFICATION MARK: GB/3572/H(U)

Signature:



Date of Issue: 19 June 2025

Ian Barlow, Head of Transport Competent Authority

Office for Nuclear Regulation  
Redgrave Court, Merton Road  
Bootle, Merseyside  
L20 7HS

on behalf of the Office for Nuclear Regulation; the Secretary of State for Transport; the Civil Aviation Authority; and the Department of Agriculture, Environment and Rural Affairs - Northern Ireland.

***This certificate does not relieve the consignor from compliance with any requirement of the government of any country through or into which the package will be transported.***

# REGULATIONS GOVERNING THE TRANSPORT OF RADIOACTIVE MATERIALS

## INTERNATIONAL

### International Atomic Energy Agency (IAEA)

SSR-6 Regulations for the Safe Transport of Radioactive Material 2018 Edition

### United Nations Economic Commission for Europe (UNECE)

Agreement concerning the International Carriage of Dangerous Goods by Road (ADR) 2025 Edition

### Intergovernmental Organisation for International Carriage by Rail (OTIF)

Regulations concerning the International Carriage of Dangerous Goods by Rail (RID) 2025 Edition

### International Maritime Organization (IMO)

International Maritime Dangerous Goods (IMDG) Code 2022 Edition incorporating Amendment 41-22 (until 31 December 2025) or International Maritime Dangerous Goods (IMDG) Code 2024 Edition incorporating Amendment 42-24

### International Civil Aviation Organization (ICAO)

Technical Instructions for the Safe Transport of Dangerous Goods by Air 2025-2026 Edition

## UNITED KINGDOM

### **ROAD**

GREAT BRITAIN ONLY:

The Energy Act 2013 (2013 c. 32); The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (SI 2009 No. 1348); The Energy Act 2013 (Office for Nuclear Regulation) (Consequential Amendments, Transitional Provisions and Savings) Order 2014 (SI 2014 No. 469)

NORTHERN IRELAND ONLY:

The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations (Northern Ireland) 2010, (SR 2010 No 160)

### **RAIL**

GREAT BRITAIN ONLY:

The Energy Act 2013 (2013 c. 32); The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (SI 2009 No. 1348); The Energy Act 2013 (Office for Nuclear Regulation) (Consequential Amendments, Transitional Provisions and Savings) Order 2014 (SI 2014 No. 469)

### **SEA**

British registered ships and all other ships whilst in United Kingdom territorial waters: The Merchant Shipping Act 1995 (1995 c. 21); The Merchant Shipping (Carriage of Dangerous Goods and Harmful Substances) (Amendment) Regulations 2024 (SI 2024 No. 636)

***AIR***

The Air Navigation Order 2016 (SI 2016 No. 765); The Air Navigation (Dangerous Goods) Regulations 2002 (SI 2002 No.2786)

## 1. DESIGN SPECIFICATION

### Package Design

- 1.1 The package design specification shall be in accordance with URENCO UK Limited report 'Safety Analysis Report In Support of Competent Authority Approval for Model 48X and 48Y Cylinder Package Design to Transport Uranium Hexafluoride', UUK6144487 Rev. 11 dated 12 May 2025, and modifications to the package design approved by the authorities named on page 1 of this certificate under the established modifications procedure.

### Design Drawings

- 1.2 The design is specified in the following drawings.

| Design No. | Title (number of components)    | Drawing / Drawing List  | Issue |
|------------|---------------------------------|-------------------------|-------|
| 3572       | 48X Cylinder (one)              | ISO 7195 Figure 10      | 2020  |
|            | 48Y Cylinder (one)              | ISO 7195 Figure 11      | 2020  |
|            | Valve protector (one)           | ISO 7195 Figure 10 c)   | 2020  |
|            | Valve protector alternate (one) | ISO 7195 Figure 12      | 2020  |
|            | 48X Cylinder (one)              | ANSI N14.1 Figure 11    | 2023  |
|            | 48Y Cylinder (one)              | ANSI N14.1 Figure 12    | 2023  |
|            | Valve protector (one)           | ANSI N14.1 Figure 11 d) | 2023  |
|            | Valve protector alternate (one) | ANSI N14.1 Figure 13    | 2023  |

### Package Description and Materials of Manufacture

- 1.3 The packaging consists of either a Model 48X or 48Y 48" diameter steel cylinder, valve protection (either 'valve protector' or VPA 'valve protector alternate'). See Appendix 1 for package illustration.

### Package Dimension and Weights

- 1.4 Nominal dimensions:
- a) 48X - 1219mm diameter x 2940mm long
  - b) 48Y - 1219mm diameter x 3727mm long
- 1.5 Maximum authorised gross weight:
- a) 48X - 2174kg
  - b) 48Y - 2529kg

## Authorised Contents

1.6 The authorised radioactive contents are solid, depleted, natural or re-processed ( $^{232}\text{U}$  maximum concentration  $0.005\mu\text{g/gU}$ ), non-fissile or fissile excepted, uranium hexafluoride ( $\text{UF}_6$ ).

1.7 The quantity of  $\text{UF}_6$  shall be limited as specified in the following table:

| Cylinder Type                                                    | Maximum Quantity (kg) (partially filled/ heeled cylinder) |
|------------------------------------------------------------------|-----------------------------------------------------------|
| 48X (with VPA)                                                   | 121.7**                                                   |
| 48Y (with VPA)                                                   | 159.4**                                                   |
| 48X/48Y without thermal protection (with valve protector or VPA) | 22.7 (heeled cylinder)                                    |

\*\* Figures depict the fill levels for which thermal protection must be used

## Restriction on Contents

1.8 None.

## Containment System

1.9 The containment system is composed of the cylinder outer shell, valve and plug.

## 2. USE OF PACKAGE

### Information Provided in Safety Report on Use of Packaging

2.1 The 48X and 48Y packaging shall be used, handled and maintained in accordance with ANSI N14.1 2023 or ISO 7195 2020 and Appendix U 'Operating and Maintenance Instruction for 48Y and 48X Cylinders' Revision 1 dated July 2015, of the Package Design Safety Report referred to in Section 1 of this certificate.

### Actions Prior to Shipment

2.2 Administrative controls shall ensure that the contents are in accordance with Section 1 of this certificate, and that the consignor, carrier and consignee hold a copy of the certificate and instructions on the use of the packaging.

### Emergency Arrangements

2.3 Before shipment takes place, adequate emergency arrangements must be made, copies of which shall be supplied to the GB Competent Authority on demand.

- 2.4 Within Great Britain, if the consignor's own, or other approved emergency plans, cannot be initiated for any reason, then the police shall be informed immediately.

### **Requirements of IAEA SSR-6 Paragraph 634**

- 2.5 None of the prescriptions of the IAEA SSR-6 2018 Edition paragraph 634 apply.

## **3. MANAGEMENT SYSTEMS**

- 3.1 The management system(s) assessed as adequate in relation to this design by the authorities named on page 1 of this certificate, at the date of issue, are as specified in 'Safety Analysis Report In Support of Competent Authority Approval for Model 48X and 48Y Cylinder Package Design to Transport Uranium Hexafluoride' referred to in Section 1 above, and include the following:

- URENCO UK Limited 'Dangerous Goods Management', UUK6121127 Issue No. 3.0, 23 April 2020
- URENCO UK Limited 'Managing Transport Licence Applications to the UK Competent Authority', UUK6119327 Issue 2.2, 6 April 2023
- URENCO UK Limited 'Guidance on the Production of a Package Design Safety Report', UUK6208880, 6 April 2023

- 3.2 No alteration may be made to any management system confirmed as adequate in relation to this design, unless:
- a) the authorities named on page 1 of this certificate have confirmed the amended management system is adequate prior to implementation or use; or
  - b) the alteration falls within the agreed change control procedures set out in the management system(s).
- 3.3 Other management systems for design, testing, manufacture, documentation, use, maintenance, inspection, transport and in-transit storage operations may be used providing they comply with international, national or other standards for management systems agreed as acceptable by the authorities named on page 1 of this certificate.

## **4. ADMINISTRATIVE INFORMATION**

### **Related Approvals**

- 4.1 Not applicable.

### **Shipment Approval**

- 4.2 Not applicable.

### **Packaging Serial Numbers**

4.3 Not applicable.

### **Additional Technical Data / Information**

4.4 Not applicable.

## 5. CERTIFICATE STATUS

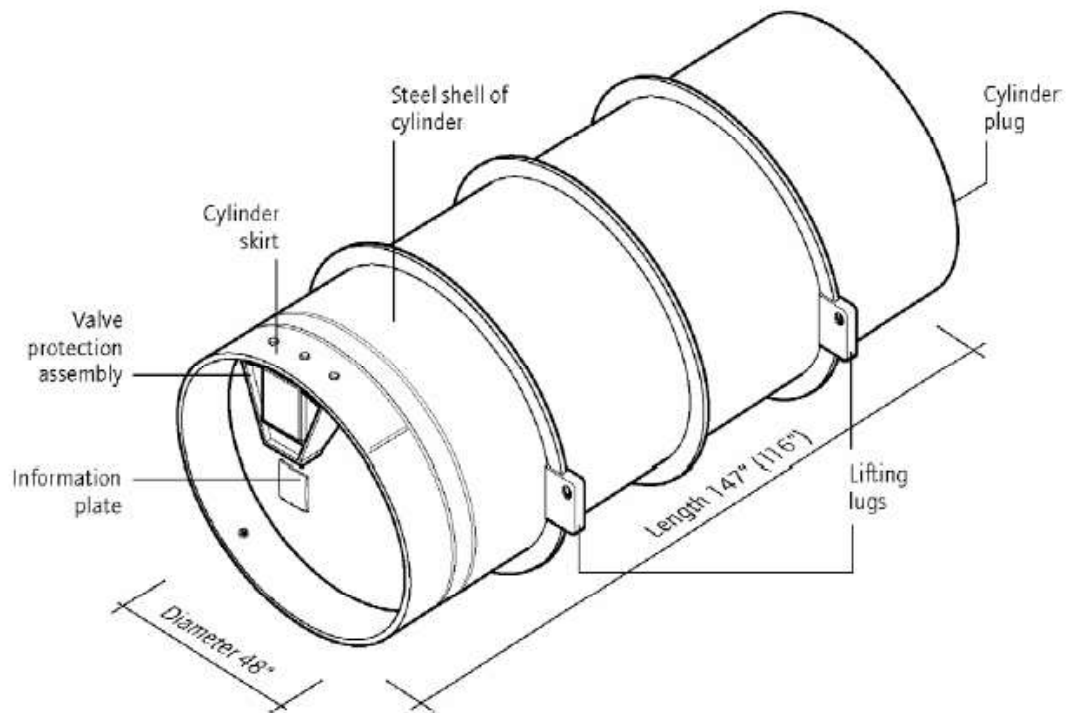
### Design approval issued to:

URENCO UK Limited  
Capenhurst Works  
Capenhurst  
Chester  
CH1 6ER  
UK

| Issue / Revision Number | Date of Issue    | Date of Expiry | Reason for Revision                                                                                                           |
|-------------------------|------------------|----------------|-------------------------------------------------------------------------------------------------------------------------------|
| Rev.1                   | 28 May 2004      | 31 May 2007    | New approval.                                                                                                                 |
| Rev.2                   | 23 December 2004 | 31 May 2007    | DSR raised to issue 4.                                                                                                        |
| Rev.3                   | 19 March 2019    | 31 March 2014  | Renewal of certificate.                                                                                                       |
| Rev.4                   | 20 May 2014      | 31 May 2015    | Renewal based on BNFL Report No. 111 Issue 4.                                                                                 |
| Rev.5                   | 24 June 2014     | 30 June 2015   | Revised to allow use of lifting lugs.                                                                                         |
| Rev.6                   | 27 July 2015     | 31 July 2020   | Renewal based on INS Transport Report No. 111 Revision 8.                                                                     |
| Rev.7                   | 1 August 2020    | 31 July 2025   | Renewal based on URENCO UK Limited report UUK6144487 Revision 9.                                                              |
| Rev.8                   | 1 August 2025    | 31 July 2030   | Renewal based on URENCO UK Limited report UUK6144487 Revision 11. Symbol “-96” removed from the Type code in line with SSR-6. |

## APPENDIX 1 – PACKAGE ILLUSTRATION

| Metric Dimension Table (mm) |          |        |
|-----------------------------|----------|--------|
|                             | Diameter | Length |
| 48Y                         | 1219     | 3727   |
| 48X (In brackets)           | 1219     | 2940   |



48Y (48X) UF<sub>6</sub> Cylinder (bare) (all dimensions are approximate)



U.S. Department of  
Transportation

**Pipeline and  
Hazardous Materials  
Safety Administration**

East Building, PHH-23  
1200 New Jersey Ave, SE  
Washington, D.C. 20590

**CERTIFICATE NUMBER:** USA/0681/H(U)-96

**ORIGINAL REGISTRANT(S) :**

Edlow International Company  
1666 Connecticut Ave, N.W.  
Suite 201  
Washington, DC, 20009  
USA

Global Nuclear Fuels - Americas  
3901 Castle Hayne Road  
Mail Code K-84  
Wilmington, NC, 28401  
USA

Urenco  
Central Technology Group  
Roentgenstr. 4  
Gronau, Bad Bentheim, 48599  
GERMANY

Cameco  
205 Peter Street  
Port Hope, Ontario, L1A 3V6  
CANADA

Honeywell  
PMT Fluorine Products  
Route 45 North  
P.O. Box 430  
Metropolis, IL, 62960  
USA

Areva - TN International  
1 Rue des Hérons  
78180 Montigny-le-Bretonneux  
Saint-Quentin-en-Yvelines, Île-de-France,  
France

Louisiana Energy Services / Urenco USA  
P.O. Box 1789

Eunice, NM, 88231  
USA

TAM International LP  
819 Broadway Street  
Paducah, KY, 42001  
USA

TN Americas LLC  
Orano TN  
7160 Riverwood Drive  
Suite 200  
Columbia, MD, 21046  
USA

Framatome Inc.  
2101 Horn Rapids Road  
Richland, WA, 99354  
USA