



U.S. Department  
of Transportation

Pipeline and  
Hazardous Materials  
Safety Administration

COMPETENT AUTHORITY CERTIFICATION  
FOR A NON-FISSILE OR FISSILE EXCEPTED  
URANIUM HEXAFLUORIDE PACKAGE DESIGN  
CERTIFICATE USA/0680/H(U)-96, REVISION 5

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

REVALIDATION OF UNITED KINGDOM COMPETENT AUTHORITY  
CERTIFICATE GB/3571/H(U)-96

This certifies that the radioactive material package design described has been certified by the Competent Authority of the United States as meeting the regulatory requirements for a packaging for non-fissile or fissile excepted 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>.

1. Package Identification - 48X or 48Y cylinders with composite-type thermal protection.
2. Package Description - 48X or 48Y cylinders outfitted with composite-type thermal protection described in United Kingdom Certificate of Competent Authority No. GB/3571/H(U)-96, Issue 4. Cylinders are subject to the special conditions listed in Section 5 of this certificate.
3. Authorized Contents - Solid, non-fissile or fissile excepted uranium hexafluoride in quantities which comply with United Kingdom Certificate of Competent Authority No. GB/3571/H(U)-96, Issue 4, 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.
  - b. Each user of this certificate, other than the original petitioner, shall register his identity in writing to the Office of Hazardous Materials Technology, (PHH-23), Pipeline and Hazardous Materials Safety Administration, U.S. Department of Transportation, Washington D.C. 20590-0001.

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<sup>1</sup> "Regulations for the Safe Transport of Radioactive Material, 1996 Edition (Revised), No. TS-R-1 (ST-1, Revised)," 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.

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- 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 Quality Assurance activities required by Paragraph 310 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 with 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 at the time of shipment.
6. Marking and Labeling - The package shall bear the marking USA/0680/H(U)-96 in addition to other required markings and labeling.
7. Expiration Date - This certificate expires on March 31, 2014.

**CERTIFICATE USA/0680/H(U)-96, REVISION 5**

This certificate is issued in accordance with paragraph 805 of the IAEA Regulations and Section 173.477 of Title 49 of the Code of Federal Regulations, in response to the April 07, 2009 petition by Honeywell, Metropolis, IL, and in consideration of other information on file in this Office.

Certified By:



**Apr 21 2009**

 Robert A. Richard  
Deputy Associate Administrator for Hazardous Materials Safety

(DATE)

Revision 5 - Issued to endorse United Kingdom Certificate of Approval No. GB/3571/H(U)-96, Issue 4, for ANSI N14.1 compliant cylinders.



## Certificate of Approval of Package Design for the Carriage of Radioactive Materials

THIS IS TO CERTIFY that the Secretary of State for Transport being, for the purposes of the Regulations of the International Atomic Energy Agency, the Competent Authority of Great Britain in respect of inland surface transport and of the United Kingdom of Great Britain and Northern Ireland in respect of sea and air transport and the Department of the Environment for Northern Ireland being the Competent Authority of Northern Ireland in respect of inland surface transport, have approved the Package design as specified in section 1 of this certificate, as applied for by International Nuclear Services Ltd (see section 6)

as Type H(U)-96

by all modes

**Packaging identification:** 48X or 48Y Hex Package with CTP

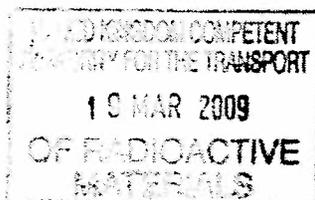
Packages manufactured to this design meet the requirements of the regulations and codes on page 2, relevant to the mode of transport, subject to the following general condition and to the conditions in the succeeding pages of this certificate.

In the event of any alteration in the composition of the package, the package design, the quality assurance programme(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.

**Expiry Date:** This certificate cancels all previous issues, and is valid until the end of March 2014 (see section 6)

### COMPETENT AUTHORITY IDENTIFICATION MARK:

Type H(U)  
GB/3571/H(U)-96



Transport Radiological Adviser  
Department for Transport  
Great Minster House  
76 Marsham Street  
London SW1P 4DR

*On behalf of the Secretary of State for Transport,  
and the Department of the Environment for 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 AND CODES OF PRACTICE GOVERNING THE TRANSPORT OF RADIOACTIVE MATERIALS

**INTERNATIONAL**

International Atomic Energy Agency (IAEA)

TS-R-1 Regulations for the Safe Transport of Radioactive Materials 2005 Edition.

International Maritime Organisation (IMO)

International Maritime Dangerous Goods (IMDG) Code Amendment 33-06 or Amendment 34-08.

International Civil Aviation Organisation (ICAO)

Technical Instructions for the Safe Transport of Dangerous Goods by Air 2007-2008 Edition.

United Nations Economic Commission for Europe (UNECE)

European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR) 2007 Edition.

Intergovernmental Organisation for International Carriage by Rail (OTIF)

Convention concerning International Carriage by Rail (COTIF) Appendix C. Regulations concerning the International Carriage of Dangerous Goods by Rail (RID) 2007 Edition.

**UNITED KINGDOM**

**ROAD**

**GREAT BRITAIN ONLY.**

The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2007, SI 2007 No 1573.

**NORTHERN IRELAND ONLY.**

The Radioactive Substances (Carriage by Road) Regulations (Northern Ireland) 1983, SR 1983 No 344. The Radioactive Substances (Carriage by Road) (Amendment) Regulations (Northern Ireland) 1986, SR 1986 No 61.

**RAIL**

**GREAT BRITAIN ONLY.**

The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2007, SI 2007 No 1573.

**SEA**

British registered ships. All other ships whilst in United Kingdom territorial waters. The Merchant Shipping (Dangerous Goods and Marine Pollutants) Regulations 1997, SI 1997 No 2367; Merchant Shipping Notice No MSN 1806 M, "The Carriage of Dangerous Goods and Marine Pollutants in Packaged Form - Amendment 33-06 to the International Maritime Dangerous Goods (IMDG) Code".

**AIR**

The Air Navigation Order 2005, SI 2005 No 1970. The Air Navigation (Dangerous Goods) Regulations 2002, SI 2002 No 2786. The Air Navigation (Dangerous Goods) (Amendment) Regulations 2007, SI 2007 No 28.

## 1. PACKAGE DESIGN SPECIFICATION

The Package Design Specification shall be in accordance with BNFL's Design Safety Case (Safety Analysis Report) for 48 inch Hex Cylinders, reference BNFL Transport Report No. 111, Issue 4 dated 19 November 2004, and Control Sheet for Documents within Transport Report 111, Issue 6 dated 27 October 2008, and modifications to the package design approved by the authority named on page 1 of this certificate under the established modifications procedure.

### 1.1 Specification of Design

Design No.	Title (number of components)	Drawing / Drawing List	Issue
3571	Outer / Composite Thermal Protector (CTP)/ One	BNFL Spec. ref. NMSS 01	C
	Inner / 48 X or 48Y hex cylinder/ One	See ANSI N14.1 Figures 8 & 9	All

### 1.2 Authorised Contents

Solid, non-fissile or fissile excepted, uranium hexafluoride. The quantity shall be limited as specified in the following table:

Cylinder type	Minimum quantity (kg UF <sub>6</sub> ) (Full cylinder)	Maximum quantity (Kg UF <sub>6</sub> ) (Full cylinder)	Maximum quantity (kg UF <sub>6</sub> ) (Heel cylinder)
48X	9062	9539	148.3
48Y	11875	12501	197.75

### 1.3 Package Dimensions and Weights

- a) Nominal Dimensions: 48X - 1219 mm diameter x 2940 mm long, 48Y - 1219 mm diameter x 3727 mm long (see section 5 for package illustration).
- b) Nominal Gross weight: 48X - 11795 kg, 48Y - 15111 kg.  
Maximum permissible gross weight: 48X & 48Y - 15450 kg

## 2. USE OF PACKAGE

### 2.1 Use of packaging

- a) The package shall be prepared, inspected, filled, closed, tested and operated in accordance with ANSI N14.1 or ISO 7195, and Section 4 and Appendix K of TR 111 Issue 4 (see paragraph 1 of this certificate).
- b) The packaging shall be maintained in accordance with the Inspection, Maintenance and Repair procedures specified in ANSI N14.1 or ISO 7195, and Appendix K of TR 111, Issue 4 (see paragraph 1 of this certificate).

### 2.2 Actions prior to shipment

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

### 2.4 Emergency Arrangements

- a) Before shipment takes place, the consignor shall have drawn up suitable emergency plans, copies of which shall be supplied to the UK Competent Authority on demand.
- b) If the consignor's own, or other approved emergency plans cannot be initiated, for any reason, then the police shall be informed immediately and requested to call the local NAIR (National Arrangements for Incidents involving Radioactivity) establishment.

### 2.4 Ambient temperature range for package design

-40°C to +38°C

### 2.5 Statement of Compliance with IAEA TS-R-1 2005 Edition paragraph 632

The prescriptions of IAEA TS-R-1 2005 Edition paragraphs 632 are not claimed in this package design.

### **3. QUALITY ASSURANCE**

3.1 Quality assurance programmes applicable to this design are:

- a) International Nuclear Services and Pacific Nuclear Transport Ltd – Management Systems Manual ; and
- b) any other quality assurance programmes associated with the design, manufacture, testing, documentation, use, maintenance and inspection, and for transport and in-transit storage operations, which must also comply with national or international standards for quality assurance which are acceptable to the authority named on page 1 of this certificate.

3.2 No alterations shall be made to the quality assurance programmes associated with this design and approved by the authority named on page 1 of this certificate unless that alteration has the prior approval of said authority, or it falls within the agreed change control procedures of that programme.

3.3 No quality assurance programme shall be used at any stage of the design, manufacture, testing, documentation, use, maintenance and inspection, and for transport and in-transit storage operations, unless said programme forms part of or is the quality assurance programme approved by the authority named on page 1 of this approval certificate.

### **4. ADMINISTRATIVE INFORMATION**

4.1 Other related certificates (alternative radioactive contents)

This certificate forms the base approval of this design. No other related UK certificates based on the 3571 exist at the time of compilation of this design approval certificate.

4.2 Additional Technical Data / Information

At the time of compilation of this design approval certificate, The Ionising Radiations Regulations 1999, SI 1999 No 3232 and Approved Code of Practice apply, with regard to radiation protection, to all modes of transport and The Dangerous Substances in Harbour Areas Regulations 1987, SI 1987 No 37, apply in UK Ports.

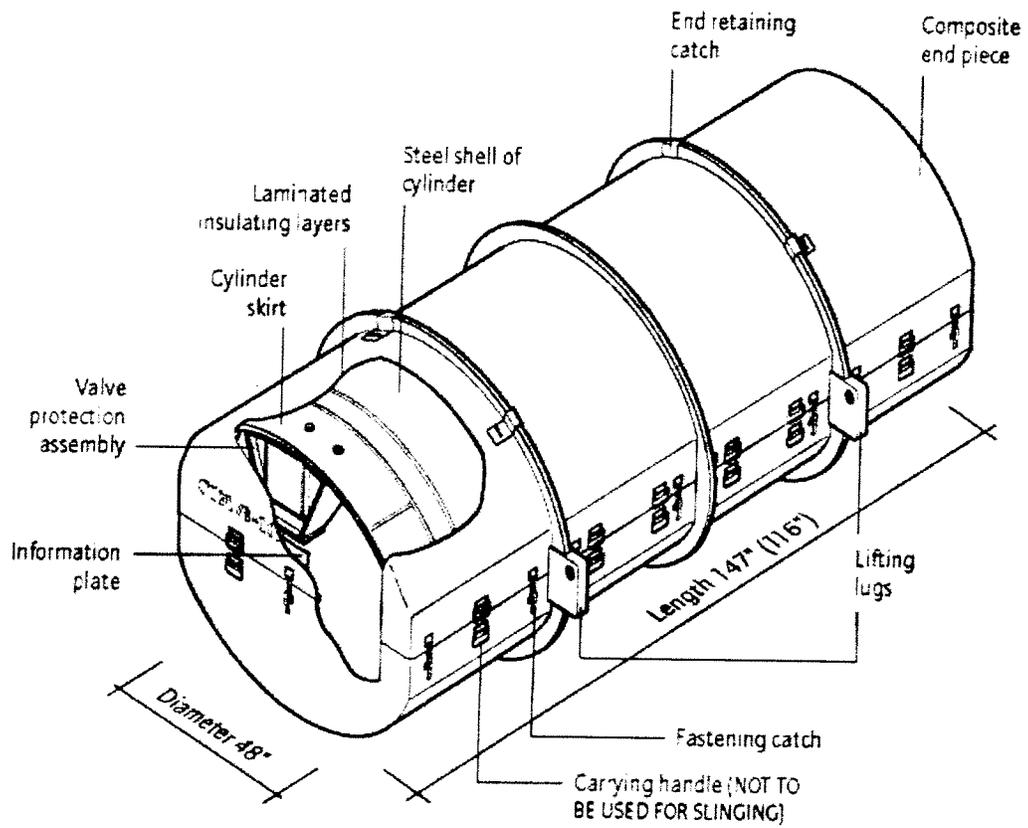
4.3 Shipment Approval

Not required.

### 5. PACKAGE ILLUSTRATION

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

All dimensions approximate



48Y(48X) UF6 Cylinder with Composite Thermal Protection

**6. CERTIFICATE STATUS**

Design Approval issued to:-

International Nuclear Services Ltd  
H550, Hinton House  
Risley  
Warrington  
Cheshire  
WA3 6AS

Issue No.	Date of Issue	Date of Expiry	Reason for Revision
1	28 May 2004	End May 2007	New approval
2	23 December 2004	End May 2007	DSR raised to issue 4
3	26 January 2005	End May 2007	BNFL Spec NMSS 01 raised to issue C (correcting an error in issue 2 of certificate)
4	As stated on page 1 of this certificate	End March 2014	Renewal of Certificate



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Safety Administration**

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

**CERTIFICATE NUMBER:** USA/0680/H(U)-96, Revision 5

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