GB/3962A/B(U) (Rev.4)

**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 REVISS Services (UK) Ltd. (see Section 5)

as: Type B(U)

by: Road and Sea.

Packaging identification: REVISS R7016

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.

Expiry Date: This certificate cancels all previous revisions and is valid until the end of September 2023 (see Section 5).

COMPETENT AUTHORITY IDENTIFICATION MARK: GB/3962A/B(U)

Signature: Date of Issue: 4 April 2023

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) 2021 Edition (until end June 2023) or Agreement concerning the International Carriage of Dangerous Goods by Road (ADR) 2023 Edition

Intergovernmental Organisation for International Carriage by Rail (OTIF)

Regulations concerning the International Carriage of Dangerous Goods by Rail (RID) 2021 Edition (until end June 2023) or Regulations concerning the International Carriage of Dangerous Goods by Rail (RID) 2023 Edition

International Maritime Organization (IMO)

International Maritime Dangerous Goods (IMDG) Code 2020 Edition incorporating Amendment 40-20

International Civil Aviation Organization (ICAO)

Technical Instructions for the Safe Transport of Dangerous Goods by Air 2023-2024 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 (Dangerous Goods and Marine Pollutants) Regulations 1997 (SI 1997 No. 2367); Merchant Shipping Notice MSN 1906 (M) The carriage of dangerous goods and marine pollutants: Amendments to international standards

***AIR***

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

1. DESIGN SPECIFICATION
	1. Package Design
		* 1. The package design specification shall be in accordance with REVISS Services (UK) Ltd. UK Type B(U) Package Design Approval Application for the R7016 Transport Container, R7016BU Issue 8, dated 3 April 2017, and modifications to the package design approved by the authorities named on page 1 of this certificate under the established modifications procedure.
	2. Design Drawings
		* 1. The design is specified in the following drawings.

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| --- | --- | --- | --- |
| **Design No.** | **Title (number of components)** | **Drawing / Drawing List** | **Issue** |
| R7016 | Outer – Carbon steel crate with double walls and ceramic fibre insulation. (1) | R7016/100 | C & D |
| R7016 | Inner – Stainless steel flask with lead and depleted uranium shielding. (1)Innermost – Encapsulated material in a basket. (see paragraph 1.9 of this certificate) | R7016/200 | D |

* 1. Package Description and Materials of Manufacture
		+ 1. The outer crate consists of a base, pallet and cover. It incorporates energy absorbing construction around the top and has ventilation apertures to allow heat generated by the contents to be dissipated. The outer cylindrical crate is manufactured from carbon steel and the cover is double walled and contains ceramic fibre insulation.
			2. The inner cylindrical flask is fastened to the crate base. Stainless steel double walls are filled with lead and depleted uranium shielding and it has a bolted closure which is also lead and depleted uranium shielded. External fins are designed to aid cooling and provide lifting points.
			3. See Appendix 1 for package illustration.
	2. Package Dimension and Weights
		+ 1. Nominal dimensions: 1950 mm long x 1950 mm wide x 2154 mm high
			2. Maximum authorised gross weight: 8597 kg
	3. Authorised Contents
		+ 1. Authorised radioactive contents are:
				1. cobalt-60 in metallic solid form
				2. the total activity of the contents shall not exceed 9.25 PBq
				3. the total rate of heat generation shall not exceed 3.84 kW
				4. the content shall be encapsulated and may be Special Form radioactive material.
	4. Restriction on Contents
		+ 1. The holder or basket design must be approved by REVISS Services (UK) Ltd. prior to transport.
			2. The maximum weight of the holder and encapsulated material shall not exceed 100 kg.
			3. The transport arrangements shall meet the requirements of Exclusive Use for greater than 7.71 PBq of activity.
			4. The authorised contents are restricted to cobalt-60 transported in Argentina between the Embalse CANDU Pressurised Heavy Water Reactor and the Dioxitek S.A. facility at Ezeiza.
	5. Containment System
		+ 1. For certified Special Form radioactive material, the containment is the Special Form.
			2. For encapsulated non-Special Form radioactive material, the containment is the Flask inner cavity with O-ring seals on the closure, vent and drain plugs.
1. use of package
	1. Information Provided in Safety Report on Use of Packaging
		* 1. The packaging shall be used and handled in accordance with REVISS Services (UK) Ltd. Operating and Maintenance Instructions for R7016 Transport Container (GB 3962A) OP322 Issue 5, implemented 22 March 2017.
			2. The packaging shall be maintained in accordance with REVISS Services (UK) Ltd. Operating and Maintenance Instructions for R7016 Transport Container (GB 3962A) OP322 Issue 5, implemented 22 March 2017.
	2. Actions Prior to Shipment
		* 1. 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 certificate and instructions on the use of the packaging.
	3. Supplementary Operational Controls
		* 1. The package shall not be sheeted over or over-stowed by loose cargo.
			2. Exclusive Use conditions shall apply if the activity loaded is greater than 7.71 PBq of cobalt-60.
	4. Emergency Arrangements
		* 1. Before shipment takes place, adequate emergency arrangements must be made, copies of which shall be supplied to the GB Competent Authority on demand.
			2. 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.
2. management systems
	* + 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 REVISS Services (UK) Ltd. UK Type B(U) Package Design Approval Application for the R7016 Transport Container, R7016BU Issue 8, dated 3 April 2017 referred to in Section 1 above, and comprise the following:
* REVISS Services (UK) Ltd. Quality Manual, QM, Issue 12, dated 28 July 2022.
	+ - 1. No alteration may be made to any management system confirmed as adequate in relation to this design, unless:
				1. the authorities named on page 1 of this certificate have confirmed the amended management system is adequate prior to implementation or use; or
				2. the alteration falls within the agreed change control procedures set out in the management system(s).
			2. 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.
1. ADMINISTRATIVE INFORMATION
	1. Packaging Serial Numbers
		* 1. This design approval applies only to packaging serial numbers 3962/02, 3962/03 and 3962/05.
			2. For the purpose of compliance with ADR / RID, the owner of the packaging shall be responsible for informing ONR of the serial number of each packaging manufactured to this design.
2. CERTIFICATE STATUS
	1. Design approval issued to:

REVISS Services (UK) Ltd.

179 Brook Drive

Milton Park

Abingdon

Oxfordshire

OX14 4SD

UK

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| **Issue / Revision Number** | **Date of Issue** | **Date of Expiry** | **Reason for Revision** |
| 1 | 21 December 2005 | 31 December 2008 | First approval |
| 2 | 24 July 2009 | 31 July 2014 | Renewal with various minor modifications |
| Extension | 22 May 2014 | 31 August 2015 | Extension by letter (TRIM 2014/158490) |
| 3 | 2 March 2018 | 31 March 2023 | Renewal |
| 4 | 4 April 2023 | 30 September 2023 | Extension of 6 months restricted to a planned programme of shipments in Argentina |

Appendix 1 – package illustration

