



U.S. Department  
of Transportation

Research and  
Special Programs  
Administration

400 Seventh Street, S.W.  
Washington, D.C. 20590

**COMPETENT AUTHORITY CERTIFICATION  
FOR A TYPE B(U)  
RADIOACTIVE MATERIALS PACKAGE DESIGN  
CERTIFICATE USA/0250/B(U), REVISION 10**

**REVALIDATION OF UNITED KINGDOM COMPETENT AUTHORITY CERTIFICATE GB/0924BP/B(U)**

This certifies that the radioactive materials package design described below is hereby approved for use within the United States for import and export shipments only. Shipments must be made in accordance with the applicable regulations of the International Atomic Energy Agency and the United States of America<sup>1</sup>.

1. Package Identification - U.K. Design No. 0924BP.
2. Packaging Description and Authorized Radioactive Contents - as described in United Kingdom Certificate of Competent Authority GB/0924BP/B(U), Issue 12 (attached).
3. 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 in accordance with the endorsed certificate.
  - b. Each user of this certificate, other than the original petitioner, shall register his identity in writing to the Office of Hazardous Materials Technology, (DHM-23), Research and Special Programs 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.
4. Marking and Labeling - The package shall bear the marking USA/0250/B(U) in addition to other required markings and labeling.
5. Expiration Date - This certificate expires on March 31, 2003.

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1 "Safety Series No. 6, Regulations for the Safe Transport of Radioactive Materials, 1973 Revised Edition, as amended," published by the International Atomic Energy Agency (IAEA), Vienna, Austria.

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

**CERTIFICATE USA/0250/B(U), REVISION 10**

This certificate is issued in accordance with paragraph 806 of the IAEA Regulations and Section 173.473 of Title 49 of the Code of Federal Regulations, in response to the petition and information dated April 7, 2000 submitted by AEA Technology, Burlington, MA, and in consideration of other information on file in this Office.

Certified by:

  
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Robert A. McGuire  
Acting Associate Administrator for  
Hazardous Materials Safety

APR 13 2000

\_\_\_\_\_  
(DATE)

Revision 10 - Issued to incorporate United Kingdom Certificate of Approval GB/0924BP/B(U), Issue 12, and to extend the expiration date.



Reference **GB/0924BP/B(U)**

Issue **12**

Page **1** of **8** Pages

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

**1. THIS IS TO CERTIFY** that the Secretary of State for the Environment Transport and the Regions 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 described in paragraphs 2-4 of this certificate as submitted for approval by Nycomed Amersham plc, Amersham, Bucks.

as Type B(U) (see paragraph 7)

for the transport of radioactive solutions or sealed radiation sources

by all modes of transport (see paragraph 9b)

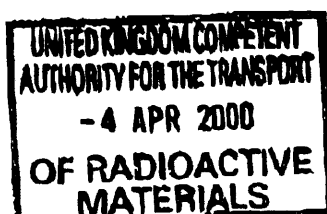
Packages manufactured to this design meet the requirements of the regulations and codes on page 2, relevant to the mode of transport, subject to the following general condition and to the conditions in the succeeding pages of this certificate.

In the event of any alteration in the composition of the package, the package design 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.

This Certificate Cancels all Previous Issues and is valid till 31 March 2003.

**COMPETENT AUTHORITY IDENTIFICATION MARK:**

**GB/0924BP/B(U)**



Transport Radiological Adviser  
Department of the Environment  
Transport and the Regions  
Great Minister House  
76 Marsham Street

On behalf of the Secretary of State  
for Environment Transport and the  
Regions and the Department of  
the Environment for Northern Ireland

**REGULATIONS AND CODES OF PRACTICE GOVERNING THE TRANSPORT OF RADIOACTIVE MATERIALS**

**INTERNATIONAL**

International Atomic Energy Agency (IAEA) Safety Series No 6 Regulations for the Safe Transport of Radioactive Materials 1985 Edition (As Amended 1990).

International Maritime Organisation (IMO). International Maritime Dangerous Goods Code -- Class 7 Radioactive Substances.

International Civil Aviation Organisation (ICAO). Technical Instructions for the Safe Transport of Dangerous Goods by Air.

**ROAD**

**GREAT BRITAIN ONLY.** The Radioactive Material (Road Transport)(Great Britain) Regulations 1996 SI No 1350; The Ionising Radiations Regulations 1985 SI No 1333; and Approved Code of Practice.

**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.

**EUROPE ONLY.** European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR), Class 7.(ed 1999).

**RAIL**

**GREAT BRITAIN ONLY.** The Packaging, Labelling and Carriage of Radioactive Material by Rail Regulations (RAMRail) 1996 (SI 1996 No 2090); Approved Requirements for the packaging, labelling and carriage of radioactive material by rail 1996 Edition. The Carriage of Dangerous Goods (Classification, Packaging and Labelling) and Use of Transportable Pressure Receptacles Regulations (CDGCPL) 1996 (SI 1996 No 2092). The Carriage of Dangerous Goods (Amendment) Regulations 1999 (SI 1999 No 303).

**EUROPE ONLY.** Convention concerning the International carriage by rail (COTIF). Appendix B. Uniform Rules concerning the International Carriage of Goods by Rail (CIM), Annex 1. Regulations concerning the International carriage of dangerous goods by rail (RID), Class 7.(ed 1999).

**SEA**

British registered ships. All other ships whilst in United Kingdom territorial waters. The Merchant Shipping (Dangerous Goods and Marine Pollutants) Regulations 1997 SI No 2367; Merchant Shipping Notice No M 1620, "The Carriage of Dangerous Goods and Marine Pollutants in Packaged Form on Ships".

**PORT: UK ONLY.**

**AIR**

**UK ONLY.** The Air Navigation (No 2) Order 1995 SI No 1970; The Air Navigation (Dangerous Goods) Regulations 1994 SI No 3187 and Amendments 1996 SI No 3100 and 1998 SI No 2536. International Civil Aviation Organisation (ICAO) Technical Instructions for the Safe Transport of Dangerous Goods by Air.

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**NOTES**

1. Attention is drawn to the labelling and marking requirements of Section IV of the 1985 Edition of the IAEA Regulations, one provision of which is that the outside of each package shall be clearly and durably marked with the Competent Authority's Package Design Identification Mark.

2. Any questions relating to this Certificate should be addressed to:--

The Transport Radiological Adviser,  
Department of the Environment, Transport and the Regions,  
Great Minster House  
76 Marsham Street, London SW1P 4DR.  
Telephone 020 7 944 5795.  
Fax 020 7 944 2187.

3. This Certificate does not relieve the consignor from compliance with any requirements of this Government or any other Government of any country through or into which the package may be transported.

**2. SPECIFICATION OF PACKAGING**

Item No.	Packaging	Design Number	Quantity per Assembly
1	Outer	0924	One
2	Inner	3078	One
3	Innermost (for liquid contents only)	3077	One

The containment system comprises item No. 2.

**Package Design Details**

Design No.	Title	Drawing List	Issue
0924	Steel Drum with 2 cork inserts	)	
3078	Depleted Uranium Pot	) PGM 1109	1
3077	Resealable Can (for liquid contents only)	)	

The package design specification shall be in accordance with Amersham International plc's document reference WD 24-BU0924BP - Revision 4.

**3. PERMITTED CONTENTS**

- (a) One glass vial containing not more than 5 ml of active 6 Molar Hydrochloric acid solution; or
- (b) One glass vial containing not more than 6 ml of sodium iodide 131 in 0.1 molar sodium hydroxide solution; or
- (c) Up to 30 grams of radium salts in sealed radiation sources; or
- (d) Up to 20 grams of iridium metal, as disks; or
- (e) Up to 1 g of phosphorus 32 in 75 grams of solid sulphur target material; or
- (f) Up to 50 grams of caesium chloride in sealed radiation sources.

#### 4. RESTRICTIONS ON CONTENTS

- a. Up to 1.85 TBq of Lead 201 as a major radionuclide and the following radionuclides as impurities: - not more than 162 GBq of Lead 200, 518 GBq of Lead 202m, 333 GBq of Lead 203, 222 GBq of Thallium 201 and 18.5 GBq of Thallium 200; or
- b. Up to 3.7 TBq of Iodine 131; or
- c. Up to 777 GBq of Radium 226; or
- d. Up to 74 TBq of Iridium 192, plus 3 TBq of Iridium 194 as impurity; or
- e. Up to 10 TBq of Phosphorus 32; or
- f. Up to 37 TBq of Caesium 137.

#### 5. INSTRUCTIONS ON THE USE OF THE PACKAGE

- a. Inspection and maintenance shall be carried out in accordance with Nycomed Ameraham's Quality Control Procedures for Transport Containers

QCP002 Issue 10 General Maintenance Procedure for Reusable containers.

- b. Handling and operating instructions for the package shall be provided to the consignee.

#### 6. ACTION PRIOR TO DESPATCH

- a. The Package shall be handled and packed in accordance with .

HPI 07 Issue B - Handling and Packing Instructions For Package Design No.0924BP (Pb 201/Tl 201 DU pot in 0924 drum).

- b. After loading the radioactive contents into the depleted uranium pot (Design 3078) the assembly shall be leak tested as described in paragraph 5 of QCP 020 Issue B.
- c. All nuts and bolts shall be checked for tightness.
- d. All locking wires and security seals shall be checked and replaced as necessary

#### 7. GRANDFATHERING PROVISIONS

Packages to this design may continue to be used subject to multilateral approval in accordance with the requirements of paragraph 714 of the 1985 Edition of the IAEA Regulations for the Safe Transport of Radioactive Material (SS6). No Supplementary Operational Controls are required.

## 8. QUALITY ASSURANCE

(a) Quality Assurance (QA) programmes applicable to this Design are:

(i) the Nycomed Amerham ple's "Transport Safety Arrangements"; and

(ii) All other Quality Assurance programmes associated with the manufacture, modification, use, maintenance and transport of this package not invoked or associated with (i). These must comply with National and International Standards for Quality Assurance which are acceptable to the United Kingdom Competent Authority (or other appropriate National Competent Authorities when International package movements occur outside the jurisdiction of the UK Competent Authority).

(b) Failure to comply with any of the provisions of sub-paragraphs (a)(i) and (ii) above may render this certificate invalid.

## 9. RESTRICTIONS ON SHIPMENT

a) Road in GB If, for any reason, the vehicle is subject to a speed restriction of less than 20 mph the carrier shall instruct the driver of the vehicle that before crossing any automatic half-barrier railway crossing, he shall notify the railway signaller of his intention to cross and await the signaller's instructions.

b) All modes of transport

If the package surface radiation level exceeds 2 mSv/hr the package shall be transported as EXCLUSIVE USE under the following conditions:

(i) Road and Rail

(a) The vehicle must be equipped with an enclosure which, during normal transport, prevents access of unauthorised persons to the interior of the enclosure

(b) The package must be secured so that their position within the vehicle remains fixed during normal transport.

(c) There must be no loading or unloading operations between the beginning and the end of the shipment.

(ii) Sea

Such packages carried in or on a road or rail vehicle may be transported by a sea going vessel provided that they remain in or on the load vehicle during the voyage.

(iii) Air

Such packages shall not be transported by air under the terms of this approval.

## 10. LABELLING, MARKING AND PLACARDING

Labelling and marking of packages and the placarding of vehicles shall be in accordance with the regulations listed on page 2 of this approval certificate.

## 11. EMERGENCY ARRANGEMENTS

### a) Road/Rail, Ports and Airports in GB

#### RADSAFE member

In the event of an emergency the procedures set out in RADSAFE, the Nuclear Industry's emergency shall apply.

The police shall be informed that RADSAFE has been initiated

#### Non RADSAFE member

Before shipment takes place suitable emergency plans shall have been drawn up by the consignor copies of which shall be supplied to the UK Competent Authority on demand. In the event of an emergency these emergency plans shall be initiated and the police informed.

If RADSAFE or the consignor's 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 Radioactive material) establishment.

### b) Rail in GB (non-RADSAFE member)

The procedure to be followed should an emergency occur is set out in British Railways publication BR 30054 "Working Manual for Rail Staff, Part 3, Handling and Conveyance of Dangerous Goods" (Pink Pages). NAIR procedures shall apply.

### c) Sea

In the event of an emergency the procedure set out in Section 9 of Class 7 of IMDG Code shall apply.

## 12. ADMINISTRATIVE ARRANGEMENTS

A. The Consignor shall be responsible for fulfilling the conditions set out in any Competent Authorities' certificates of approval associated with the shipment of this package and for compliance with the administrative requirements of paragraphs 446-459 of the 1985 Edition of the IAEA Regulations.

### B. Competent Authority Approval Certificates

Copies of Competent Authority certificates of approval associated with the shipment of this package must be available at places of loading, unloading and transhipment.



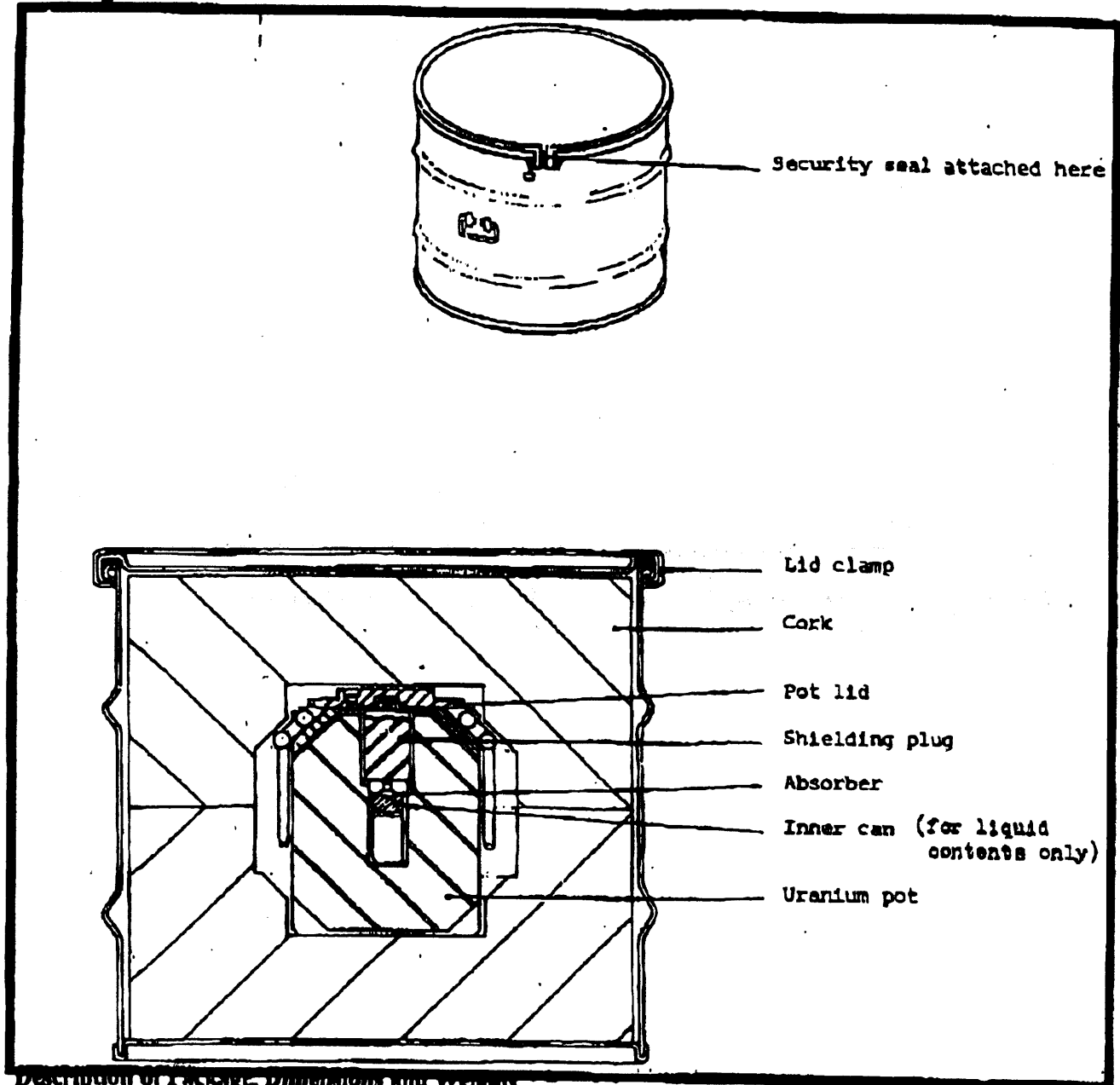
**C. Serial Numbers**

The Competent Authority must be informed by the owner or operator, of the serial numbers applied to all packages covered by this Certificate.

**13. RENEWAL OF CERTIFICATES**

If the period of validity is required to be extended, application shall be made at least six weeks in advance of expiry.

**Package Illustration**



**Description of Package, Dimensions and Weights**

**Packaging:** Mild steel cork lined drum with containing depleted uranium source pot.

**Dimensions:** 490 mm diameter x 4700 mm high.

**Gross Weight:** 81.7 kg.