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STÁTNÍ ÚŘAD PRO JADERNOU BEZPEČNOST
[STATE OFFICE FOR NUCLEAR SAFETY]

State Office for Nuclear Safety
Senovážné nám. 9,110 00 Praha 1
Nuclear Safety Department

Prague, 25 July 2011
Ref.: SÚJB/ONRV/14976/2011
File No.: SÚJB/POD/13125/2011
Spent Nuclear Fuel and Radioactive Waste
Management Division

DECISION

Based on application submitted by UJP PRAHA a.s., Company ID 60193247, file No. 114448, as a party to the procedure pursuant to Article 27 paragraph 1a) of Act No. 500/2004, Code of Administrative Procedure, application No. 1000/55/11 dated 15 June 2011 and requesting renewal of a decision granting type approval to a packaging for the transport of radioactive substances, the State Office for Nuclear Safety (SÚJB) as the administrative authority competent pursuant to Article 3, Paragraph 2c of Act No. 18/1997 on peaceful uses of nuclear energy and ionizing radiation (Atomic Act) and on the amendment of some acts (as amended), initiated administrative procedure pursuant to Article 44 paragraph 1 of the Code of Administrative Procedure on 15 June 2011 and ultimately decided as follows:

Pursuant to Article 67 paragraph 1 of the Code of Administrative Procedure and Article 23 paragraph 2 of Act No. 18/1997 (as amended), the State Office for Nuclear Safety

grants type approval

to the design type of the UK 4-135 packaging as Type B(U) packaging for the transport of radioactive substances specified in Requirement 1 herein, assigns to said packaging, manufactured to the documentation assessed, the identification symbol

CZ/005/B(U) – 96

and for the purposes of international identification assigns to this Decision on Type Approval of the UK 4-135 Packaging the code

CZ/005/B(U) – 96 (Rev. 2).

The UK 4-135 packaging for the transport of radioactive substances complies with the requirements of Act No. 18/1997 (as amended), International Atomic Energy Agency recommendations “Regulations for the Safe Transport of Radioactive Materials, 2005 Edition, Safety Requirements Series No. TS-R-1”, and of international transport regulations which refer to the above International Atomic Energy Agency rules.

Description of the UK 4-135 packaging:

The UKI 4-135 packaging consists of a shielding container and a transport cylinder, which exists in 2 design variants.

The shielding container protects the environment from the effects of the ionizing radiation emitted by the sources being transported. The shielding container consists of a cylindrical body with 4 channels (which are 8° deflected from the vertical axis), a lid, 4 caps, a handle, a lifting eye and a lock. Depleted uranium, hermetically encased in a stainless steel jacket system, serves as the shielding material. The non-destructive testing holders are secured against axial travel by a safety device consisting of a control ring, two balls and a spring. The control ring is pressed to the stop (roughly 4 mm) to allow the radionuclide source holder to be inserted/removed. The design of the end pieces allows for attachment of remote control quick-couplings. The caps, containing shielding uranium material, are provided with unique IDs, which are identical with those of the channels. When screwing the caps into the holders, care must be exercised for the IDs to be matched. The shielding container lid is attached to the body by means of four M10 screws and secured against tampering with an inserting lock. Handles serve to lift and move the shielding container; a lifting eye is also available. The weight of the shielding container with radioactivity inside is up to 41 kg. When transporting radioactivity, the container can be used either alone or accommodated in the transport cylinder.

The two-part transport cylinder (9 kg weight), serving to protect the shielding container from mechanical damage, exists in 2 variants (Variant I and Variant II). It is not an integral part of the packaging.

Transport cylinder Variant I

Both the bottom and top parts encompass the shielding container rather tightly. The container handles pass through the cylinder and can be used for handling the packaging in this arrangement as well. The lower part of the transport case is fixed to the shielding container bottom by means of two M8 screws and need not be removed during routine handling. The top part of the transport cylinder (i.e the lid) is slid into the bottom part and is fastened to it by means of four M8 bolts. The bolt heads are designed to carry a seal against tampering.

Transport cylinder Variant I

The internal space of the body is provided with a grate, in which the shielding container is centrally seated. The distance between the shielding container surface and the transport case jacket is sufficient to protect the surroundings from radiation. the transport cylinder is fitted with 2 handles. The top part of the cylinder assembly (i.e. the lid) is attached to the bottom part (i.e. the jacket) by means of six M8 screws. The assembly can be secured against tampering by using a padlock or seal in the flange.

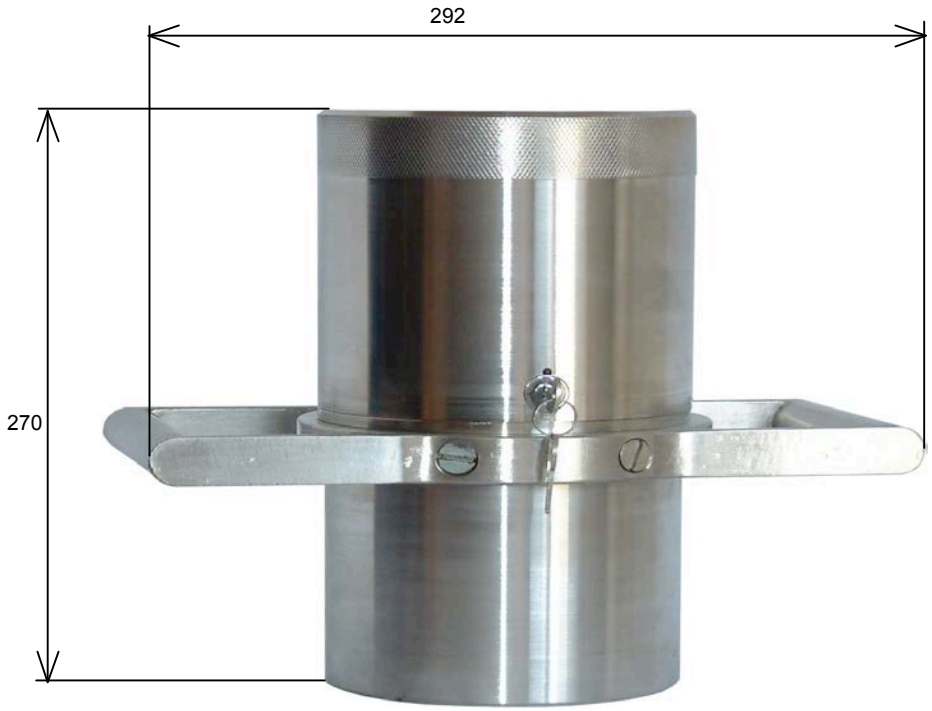
The packaging is manufactured by the applicant, i.e. UJP PRAHA a. s.

Parameters and photographs of the UK 4-135 packaging

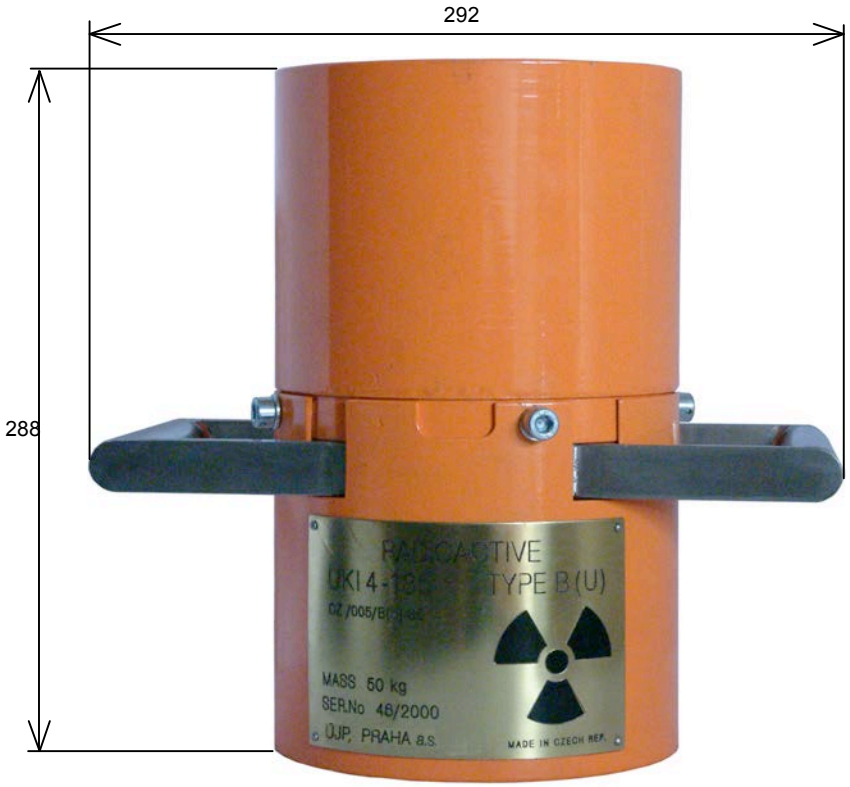
Parameters:

Parameter	Without the transport cylinder	With the transport cylinder	
		Variant I	Variant II
Diameter	146 mm	168 mm	368 mm
Height	270 mm	288 mm	380 mm
Weight	Up to 41 kg	Up to 50 kg	Up to 50 kg

Photograph of the shielding container:



Photograph of the transport cylinder Variant I:



Photograph of the transport cylinder Variant II:

Requirements for the use of the packaging

The type-approved UK 4-135 packaging, identification symbol CZ/005/B(U)-96, shall only be used to transport radioactive substances provided that the following requirements are met:

1. Permitted radioactive content

a) The UK 4-135 packaging is designed to transport radioactive sources type-approved as special form radionuclide substances at the following maximum activities:

^{192}Ir	^{60}Co	^{137}Cs	^{226}Ra	^{90}Sr	^{32}P	^{75}Se	^{169}Yb	^{170}Tm
4.99 TBq	3.36 GBq	2.5 TBq	0.54 GBq	27 TBq	1.37 GBq	37 TBq	74 TBq	110 TBq

d) Other radionuclides up to the A_1, A_2 level specified in Table 1, Annex 3 to Regulation No. 317/2002 on type approval of packagings for the transport, storage and disposal of nuclear materials and radioactive substances, on type approval of ionizing radiation sources and on the transport of nuclear materials and specific radioactive substances (on type approval and transport)

2. Handling, maintenance, inspections

The packaging shall be handled, maintained and inspected in compliance with the requirements specified in the document "UK 4-135 Packaging, Instructions for Use and Maintenance", NO 6/2006, UJP PRAHA a. s., June 2006

Any inspection of the packaging, performed in compliance with the above document, shall be documented in a record, which shall be maintained during the entire lifetime of the packaging. The packaging condition and performance shall be inspected prior to each use of the packaging and the inspection shall be documented in a formal record.

3. Quality assurance

Each UK 4-135 packaging unit, having the identification symbol CZ/005/B(U)-96 and a specific serial number, shall be manufactured to the relevant technical documentation, "UKI 4-135 Packaging, No. 1-866-00 00 000, No. č. 2-831 00 00 000, and No. 1-936 00 00 000", and in a quality assurance system conforming to ČSN EN ISO 9001:2008 in compliance with the requirements of Regulation No. 132/2008 on the Quality Assurance System in carrying out activities associated with the use of nuclear energy and radiation protection and on quality assurance of selected equipment in regard of its assignment to nuclear safety classes.

Any packaging to be used for the transport of radioactive substances within the Czech Republic shall conform to the approved type, as shall be demonstrated by the Declaration of Conformity developed in compliance with Article 6 of Regulation No. 317/2002 on type approval and transport. The Declaration of Conformity of any newly manufactured packaging shall be sent to the State Office for Nuclear Safety no later than prior to the first use or marketing of the packaging.

4. Appropriate closing of the packaging and dosimetric inspection prior to transport

After inserting radioactivity, the packaging shall be inspected to make sure that the packaging has been closed safely and that the package complies with applicable dosimetric requirements, and a formal record of the inspection shall be prepared.

Based on provisions of Article 20 paragraph 1b) of Act No. 18/1997 (as amended) and Article 9 paragraph f) of Regulation No. 317/2002 in conjunction with points 30 to 32 of Annex 4 to Regulation No. 317/2002, the dose equivalent rate on the packaging surface and at a distance of 1 m from the surface must not exceed 2 mSv/hr and 0.1 mSv/hr, respectively, unless the transport proceeds in exclusive use conditions. During a transport in exclusive use conditions the dose equivalent rate on the packaging surface must not exceed 10 mSv/hr.

At the same time, based on point 8 of Annex 4 to Regulation No. 317/2002, non-fixed packaging surface contamination must not exceed the levels of:

- 4.0 Bq/cm^2 for gamma and beta nuclides
- 4.0 Bq/cm^2 for low-toxic alpha nuclides
- 0.4 Bq/cm^2 for the remaining alpha nuclides.

In addition, a package with radioactivity inside, prepared for transport, shall comply with the provisions of Article 20 paragraph 1b) of Act No. 18/1997 and of paragraphs 58, 59 and 68 of Section I, Annex 1 to Regulation No. 317/2002 – requiring that the maximum temperature on any part of the accessible surface of a radioactive consignment should not exceed 85°C, and if it exceeds 50°C, the transport should occur in exclusive use conditions.

5. Packaging labelling

The packaging shall be labelled and provided with transport stickers in compliance with paragraphs 34 to 36, 38, 39 and 41 to 43 of Annex 4 to Regulation No. 317/2002, viz.:

a) The outer surface of the packaging shall display the following information, which shall be conspicuous, legible and durable:
   - Identification of the carrier and/or consignee
   - UN No. and proper shipping name of the radioactive consignment
   - Maximum weight of the packaging with radioactivity inside, i.e. 50 kg
   - Identification symbol assigned by the State Office for Nuclear Safety, i.e. CZ/005/B(U) – 96
   - Packaging serial number
   - Packaging model and type, i.e. UK 4-135 and B(U), respectively
   - Radioactivity symbol, resistant to flames and water.

b) Two opposite sides of the external packaging surface shall carry stickers conforming to the patterns in Figs 2, 3 and 4 of Annex 4 to Regulation No. 317/2002, with completed information regarding the content, radioactivity and transport index (see paragraph 43 of Annex 4 to Decree No. 317/2002).

6. Accident reporting

If handling of the UK 4-135 packaging, identification symbol CZ/005/B(U) – 96, results in its damage or in an accident; in particular, if the packaging has dropped or tipped over, the packaging shall be temporarily put out of service without unnecessary delay while meeting all radiation protection requirements. The use of such packaging shall only be resumed after inspection and/or repair. In addition, an accident report shall be developed, and the report shall be sent by the carrier to the State Office for Nuclear Safety within 14 days of the event.

7. Scope of this Decision

a) This Decision on packaging type approval does not substitute any other licence/permit issued by the State Office for Nuclear Safety pursuant to Article 9, Paragraph 1 of Act No. 18/1997 (as amended) or any other licence or permission granted by other governmental bodies pursuant to special regulations.

b) This Decision on packaging type approval does not relieve the carrier of the obligation to comply with any other requirement(s) of other transport authorities, nor does it relieve the carrier of the obligation to comply with any requirement(s) applicable in any country to which or through which the package containing radioactivity would be shipped.

The effective date of this Decision is 2 August 2011.
This Decision expires 31 August 2021.

Grounds:

This Decision is being issued based on application submitted by UJP PRAHA a.s., application ref. 1000/55/11 dated 15 June 2011, and following assessment of relevant documentation, which was submitted to the State Office for Nuclear Safety in accordance with Article 23 of Act No. 18/1997 (as amended). The applicant had submitted valid documentation in compliance with the requirements of Article 3 and Article 4 of Regulation No. 317/2002 on type approval and transport (as amended) during the previous administrative procedure which had been concluded by issuance of State Office for Nuclear Safety Decision No. 45457/2006 of 24 July 2006, to expire 1 August 2011.

The applicant submitted his application for renewal of the type approval of the UKI 4-135 packaging in view of the approaching expiry (1 August 2011) of SÚJB Decision No. 45457 /2006 of 24 July 2006.

In compliance with the requirements of the legislative documents cited above, the application was accompanied by the documents "Record of effective dose calculation for an UKI 4-135 container" of 27 May 2011, prepared in MicroShield 7.01 by Ing. Soňa Konopásková, CSc., for depleted uranium as the shielding material.

The State Office for Nuclear Safety concludes that the documentation assessed complies with applicable provisions of Act No. 18/1997 (as amended) and with the relevant provisions of Regulation No. 317/2002, and therefore declares the UK 4-135 packaging suitable for use for the transport of radioactive substances specified in Requirement 1 herein in accordance with the remaining requirements and conditions laid down by this Decision.

Administrative fee of CZK 1000 pursuant to Act No. 634/2004 on administrative fees, item 107 letter f) in the Annex to said Act, has been paid.

On the above grounds the State Office for Nuclear Safety decided as stated in the ruling.

Advice:

Appeal against this Decision can be lodged with the President of the State Office for Nuclear Safety through the Nuclear Safety Department, State Office for Nuclear Safety, Senovážné náměstí 9, 110 00 Prague, within 15 days of the delivery of this Decision.

Stamp: STATE OFFICE FOR NUCLEAR SAFETY
24

[Signed by:]
RNDr. Peter Lietava
Head,
RAW and Spent Fuel
Management Division

Distribution list:

Applicant

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File