

ROSATOM
STATE ATOMIC ENERGY CORPORATION

CERTIFICATE OF APPROVAL

Registration No. _____ dated _____ 2021

FOR PACKAGE DESIGN AND TRANSPORT

**Uranium Hexafluoride
48X Transport Packaging**

RUS/321/H(M)-96T(Rev.8)

Issued 2021

Valid until 31 July 2025

**Deputy Director General for the State
Safety Policy in the Defence Uses of
Atomic Energy**

Yu. V. Yakovlev

List of Approvals

APPROVED

Deputy Head of the Russian Federal
Service for Ecological,
Technological and Nuclear
Supervision

_____ A.V. Ferapontov
_____ 2021

APPROVED

Deputy Head of the Federal Medical
and Biological Agency, Chief Public
Health Official for Organisations and
Territories Serviced

_____ I.V. Borisevich
_____ 2021

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FOR PACKAGE DESIGN AND TRANSPORT**

**Uranium Hexafluoride
48X Transport Packaging**

RUS/321/H(M)-96T(Rev.8)

Valid until 31 July 2025

Acting Head of the Administration Office for
Safety Regulation of Nuclear Fuel Cycle
Facilities, Nuclear Power Installations on
Vessels and Hazardous Radiological Facilities

Federal Service for Ecological, Technological
and Nuclear Supervision

_____ E.G. Kudryavtsev
_____ 2021

Director for Special Transport and
Emergency Preparedness – Director of the
Department for Nuclear and Radiation
Safety, Organisation of Licensing and
Authorisation Activities
Rosatom State Atomic Energy Corporation

_____ S.V. Raykov
_____ 2021

Applicant: **NFC Logistics Joint-Stock Company**
(NFCL)
25, bld. 1, ul. Bolshaya Polyanka, Moscow

**Consignors/
Consignees:** **Siberian Chemical Combine Joint-Stock Company**
(SKhK)
Seversk, Tomsk Region

Angarsk Electrolytic Chemical Combine Joint-Stock Company
(AEKhK)
Angarsk, Irkutsk Region

Urals Electrochemical Combine Joint-Stock Company
(UEKhK)
Novouralsk, Sverdlovsk Region

Electrochemical Plant Production Association Joint-Stock Company
(PO EKhZ)
Zelenogorsk, Krasnoyarskiy Kray/Territory

International companies on a contractual basis

Transshipment points: **Saint Petersburg IZOTOP Joint-Stock Company**
(SPb-IZOTOP)
Kuzmolovsky Urban Locality, Vsevolzhsky District, Leningrad Region

Sea Trading Port of Saint Petersburg
Saint Petersburg

Ust-Luga Sea Port
Kingiseppsky District, Leningrad Region

Vostochny Sea Port
Wrangel Cove, Nakhodka Bay, Primorskiy Kray/Territory

Zabaikalsk Station, Zabaikalskaya Railway
Zabaikalskiy Kray/Territory

This Certificate of Approval certifies that the design of the package comprising the transport packaging detailed in Section 2 below, loaded with radioactive contents characterised in Section 3 below, conforms to requirements set forth in Safety Regulations during Transportation of Radioactive Material NP-053-16 and Regulations for the Safe Transport of Radioactive Material, 2012 Edition, No. SSR-6.

This Certificate of Approval also recognises certificates issued by the competent authorities of the USA: USA/0592/H(M)-96(Rev.4), USA/0679/H(U)-96(Rev.8), USA/0680/H(U)-96(Rev.8), USA/0681/H(U)-96(Rev.7), and the United Kingdom of Great Britain and Northern Ireland: GB/3570/H(U)-96(Rev.6), GB/3571/H(U)-96(Rev.7), GB/3572/H(U)-96(Rev.7) for the uranium hexafluoride 48X package design.

This Certificate of Approval allows carriage of packages under exclusive use by conveyances specified in Section 6 below in compliance with requirements set forth in documents listed in Section 9 hereof.

Uranium hexafluoride packages or empty packagings containing residual quantities ('heels') of non-volatile products remaining after uranium hexafluoride vaporisation are assigned to Type IP-2 packages in compliance with NP-053-16 and IAEA SSR-6.

Identification of the transport packaging: **48X**.

Identification mark of the package in the Russian Federation: **RUS/321/H(M)-96**.

Identification mark of the package in the USA: **USA/0592/H(M)-96,**
USA/0679/H(U)-96,
USA/0680/H(U)-96,
USA/0681/H(U)-96.

Identification mark of the package in the United Kingdom: **GB/3570/H(U)-96,**
GB/3571/H(U)-96,
GB/3572/H(U)-96.

UN numbers, shipping names and descriptions:

- **UN 2978:** RADIOACTIVE MATERIAL, URANIUM HEXAFLUORIDE, non-fissile or fissile-excepted – for transportation of uranium hexafluoride;
- **UN 3321:** RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-II), non-fissile or fissile-excepted – for transportation of empty packages with non-volatile ‘heels’ remaining following uranium hexafluoride evaporation.

The transport index and category of the packages shall be determined by the consignor in compliance with NP-053-16 Paragraphs 5.3.1 and 5.3.7 or IAEA SSR-6 Paragraphs 523 and 529, correspondingly, and indicated in the accompanying documents and on the label.

1. MAIN PURPOSE

The 48X transport packaging manufactured outside the Russian Federation is intended for uranium hexafluoride transport.

The compliance of the package design with requirements of IAEA Safety Standards Series No. SSR-6 has been certified by corresponding USA Certificates USA/0592/H(M)-96(Rev.4), USA/0679/H(U)-96(Rev.8), USA/0680/H(U)-96(Rev.8), USA/0681/H(U)-96(Rev.7) and United Kingdom Certificates GB/3570/H(U)-96(Rev.6), GB/3571/H(U)-96(Rev.7) and GB/3572/H(U)-96(Rev.7).

Packages may be transported by rail, road and sea under relevant contracts with international companies.

2. TRANSPORT PACKAGING DESIGN

2.1. The 48X transport packaging consists of:

- 48X Cylinder, and
- Valve guard or valve guard alternate (VGA).

The general view and principal dimensions of the packaging are shown in Figure 1.

2.2. The 48X cylinder is a welded structure that consists of a cylindrical shell and two semi-ellipsoidal convex heads.

One of the heads has a valve for loading radioactive contents. The head is provided with a ‘skirt’ to protect the valve against mechanical damage. A steel plate is welded to the skirt on the side opposite the valve. A shipping container with a sampler is bolted to the plate, the container being intended for product sample transport within the packaging.

The other head has a plug also guarded with a ‘skirt’ welded to the end cap.

Three flat stiffening rings and four lifting lugs are welded to the shell so that they are oriented

perpendicular to the cylinder axis.

The cylinder is fabricated of ASTM A516 carbon steel in compliance with ANSI N 14.1.

- 2.3. The valve guard is bolted to the skirt to provide additional protection to the valve.

The valve guard is a box-shaped welded structure made of high-strength aluminium alloy Type UNS A96061 or carbon steel Grade ASTM A20.

- 2.4. BTP-48X and CTP-48X thermal protector designs are allowed in the course of transportation.

2.4.1. A BTP-48X soft thermal protection model (Drawing 5314-02, Cogema, France) is composed of two layers. The inner layer is an insulation material made of fireproof fibreglass fabric, whereas the outer one is a fire retardant reinforced textile with a silicone overcoat.

The BTP-48X Blanket Thermal Protector has a longitudinal joint and comprises the following sections: 4 separate pieces of flexible blanket in the middle and two pieces that wrap around both ends. The middle blankets are secured to the cylinder with fire retardant textile gripping straps. A steel cord is used to secure the end pieces to the middle sections.

Gaps for the support cradles are envisaged in the lower part of the Thermal Protector.

The general view and principal dimensions of the cylinder with a BTP-48X are shown in Figure 2.

2.4.2. A CTP-48X composite thermal protection model (Drawing CT 0020/005, BNFL, United Kingdom) comprises 8 rigid semi-cylindrical panels (4 lower and 4 upper ones).

The upper and lower panels clamp. The end pieces have heads and are secured to the 48X cylinder stiffening rings with removable locks.

The Composite Thermal Protector is composed of a rigid composite material formed from layers of silica cloth reinforced with steel and held together with resin. The outside of the CTP has a smooth gloss finish.

The general view and principal dimensions of the cylinder with a CTP-48X are shown in Figure 3.

- 2.5. Weight characteristics of 48X transport packagings are given in Table 2.1 below.

Table 2.1

Transport Packaging	Nominal Tare Weight of Transport Packaging with Non-Volatile 'Heels' following Uranium Hexafluoride Evaporation, kg	Nominal Gross Weight of Package with Uranium Hexafluoride, kg
Transport Packaging with a soft BTP-48X	2274	11691
Transport Packaging with a rigid CTP-48X	2378	11795
Transport Packaging without thermal protection	2174	11591

3. RADIOACTIVE CONTENTS

- 3.1. Radioactive contents of the 48X transport packaging: uranium hexafluoride with U-235 enrichment less than 1 %.

Uranium hexafluoride weight in the package: from 9,062 kg to 9,539 kg.

- 3.2. Radioactive contents of an empty transport packaging: non-volatile 'heels' remained following uranium hexafluoride unloading (evaporation), in the form of uranyl fluoride, and minimal quantities of impurity fluorides.

Weight of non-volatile ‘heels’ in the package: not greater than 121.7 kg.

4. NUCLEAR SAFETY

In accordance with NP-053-16 Paragraph 2.12.2a and IAEA SSR-6 Paragraph 417a, packages that contain uranium enriched in uranium-235 to a maximum of 1% by mass are excepted from requirements for packages with fissile material.

The quantity of packages on board a single conveyance or in a group during storage in transit is not limited.

5. RADIATION PROTECTION

5.1. Radiation protection is ensured in compliance with requirements set forth in NP-053-16 and IAEA SSR-6.

The radiation levels from packages shall not exceed the values allowed by Sanitary Rules SanPiN 2.6.1.1281-03:

Package Contents	Raw Material for the Manufacture of Uranium Hexafluoride	Transport Category
Uranium hexafluoride	Natural uranium	II
	Recycled uranium	III
Non-volatile ‘heels’	Natural uranium, recycled uranium	III

5.2. Packages shall be transported in compliance with terms and provisions set forth in:

- Radiation Protection Programme during Transport of Radioactive Material by *Siberian Chemical Combine* Joint-Stock Company Ref. No. PRZ 15-103-2018 (SKhK);
- Radiation Protection Programme during Transport of Radioactive Material by Rail Ref. No. IP 07.00049-2019 (AEKhK);
- UEKhK’s Radiation Protection Programme during Transport of Radioactive Material Ref. No. STO 00.200-2020 (UEKhK);
- Radiation Protection Programme during Transport of Radioactive Material Ref. No. 85/1726 (PO EKHz);
- Radiation Protection Programme during Transport of Radioactive Material and Radioactive Waste (Nuclear Material, Radioactive Substances, Spent Nuclear Fuel and Radioactive Waste) Ref. No. 162-217 (SPb-IZOTOP); and
- Radiation Protection Programme during Transport of Radioactive Material (Atomspetstrans).

6. CONVEYANCES AND OPERATING CONDITIONS

6.1. Packages may be transported by rail, road, and sea.

Packages shall be transported under exclusive use in conformity to regulations applicable to the carriage of dangerous goods by relevant mode of transport, and regulatory documents related to providing special shipment conditions as applicable in the Russian Federation.

Packages may be transhipped from one mode of transportation to another at the SPb-IZOTOP’s premises, at the Sea Trading Port of Saint Petersburg, at the Ust-Luga Sea Port, or at the Vostochny Sea Port. All activities associated with arranging transhipment in the harbours above shall be carried out by SPb-IZOTOP.

6.2. Flat and open wagons/trucks of relevant bearing capacity shall be used for package transportation by rail.

Packages shall be placed and secured on flat wagons/trucks or in open wagons/trucks in compliance with requirements set forth in Dwg. U4520.00.00 (SKhK), Dwg. P5308.00.00 (AEKhK), Dwg. 27510-0-0 (UEKhK), Dwg. 17250-0-0 (UEKhK), Dwg. T.01.18-1281.00.00.00 (PO EKhZ) and Dwg. T.01.18-1431.00.00.00 (PO EKhZ).

Other package securing diagrams during transport by rail are allowed, if such diagrams conform to requirements stipulated by NP-053-15 and IAEA SSR-6 as well as rules governing carriage by rail.

The number of packages on board a single flat or open wagon/truck shall be consistent with the flat/open wagon/truck carrying capacity.

- 6.3. When transported by road, packages shall be carried on heavy goods vehicles equipped for the transportation of radioactive material in compliance with the Rules for Transport of Goods by Road and the European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR).

Flatracks shall be used for shipments by road.

Packages shall be positioned on flatracks in accordance with the consignor/flatrack owner's engineering manual. Packages shall be secured on flatracks in compliance with a diagram developed by the consignor/flatrack owner. Package securing diagrams shall be developed in conformity to requirements stipulated by NP-053-15 and IAEA SSR-6 as well as rules governing carriage of dangerous goods by road.

Number of packages on one flatrack: not more than 1.

Flatracks shall be secured to vehicles using standard methods of securing heavy weight containers.

The number of flatracks on board a vehicle shall be consistent with the vehicle carrying capacity.

- 6.4. Cargo vessels shall be used for shipments by sea. Packages shall be positioned and secured on board the vessel in compliance with requirements set forth in the Russian National Regulations for Maritime Transport of Dangerous Goods and the IMDG Code.

- 6.5. Packages may be shipped either with or without thermal protection (BTP or CTP).

The thermal protection shall be installed/removed by organisations holding a valid license issued by the Russian Federal Service for Ecological, Technological and Nuclear Supervision entitling them to handling nuclear materials at all stages of transshipment activities during transportation and storage.

48X packages may be shipped with samplers that contain uranium hexafluoride provided that requirements set forth in NP-053-16 Paragraph 5.7.3c are satisfied.

- 6.6. Packages containing not more than 22.7 kg non-volatile 'heels' remained following uranium hexafluoride evaporation may be transported without a valve guard.

- 6.7. Packages shall be operated in compliance with terms and provisions set forth in ANSI N 14.1, ISO 7195 and manuals applicable at companies that carry out transport and process operations with packages. Any additional measures are not required.

- 6.8. The frequency of the packaging recertification shall be established and monitored by the consignors in accordance with ANSI N 14.1 and ISO 7195.

Transport packagings whose service life has either expired or has not been extended as appropriate shall not be allowed for use and operation.

7. EMERGENCY CONDITIONS

- 7.1. Transport packagings ensure safety in the course of transportation in compliance with requirements set forth in NP-053-16 and IAEA SSR-6.

- 7.2. In the event of an emergency during transportation, actions shall be undertaken in compliance with

Emergency Cards No. 701 and No. 702 as well as:

- Plan for Arranging Activities to Eliminate the Consequences of Accidents during Transport of Radioactive Material Ref. No. PLA 28.00022-2018 (AEKhK);
- Plan for Eliminating an Accident during Transport by Rail of Nuclear and Radioactive Material of the *Siberian Chemical Combine* Joint-Stock Company Ref. No. PLA 17-006-2016 (SKhK);
- Plan for the Elimination of the Consequences of an Accident during Transport by Rail of UEKhK's Radioactive Material Ref. No. STO 07.008-2015 (UEKhK);
- Plan for the Elimination of the Consequences of an Accident during Transport by Rail of Radioactive Material Ref. No. 32/156dsp (PO EKhZ);
- Plan for the Elimination of the Consequences of Accidents during Transport of Radioactive Material and Spent Nuclear Fuel Ref. No. 162-01/1519 (SPb-IZOTOP);
- Plan for the Elimination of the Consequences of Accidents during Handling Radioactive Material Cargoes at the Ust-Luga Sea Port (SPb-IZOTOP);
- Plan for the Elimination of the Consequences of Accidents during Handling Radioactive Material Cargoes at the Premises of the Sea Terminal Operator Vostochnaya Stevedoring Company LLC at the Vostochny Sea Port (SPb-IZOTOP);
- Plan for the Elimination of the Consequences of Accidents during Transport by Non-Public Rail of Radioactive Material Ref. No. 162-217/21VN (SPb-IZOTOP); and
- Plan for the Elimination of the Consequences of Accidents during Transport of Radioactive Material (Atomspetstrans).

7.3. Information about any accident/emergency shall be immediately reported to:

- Dispatcher at Atomspetstrans JSC Transport Control Centre
T: +7 (499) 949 4481, +7 (499) 262 3108, +7 (495) 657 8607;
- Dispatcher at Rosatom's Emergency and Technical Centre
T: +7 (495) 933 6044, +7 (499) 949 2311, +7 (499) 949 2428;
- Duty officer at Rostekhnadzor (Russian Federal Service for Environmental, Technological and Nuclear Inspection)
T: +7 (495) 532 1508, +7 (495) 532 1505, Fax: +7 (495) 532 1510;
- Dispatcher at FSUE ATTs SPb (Rosatom Emergency Technical Centre, Saint Petersburg)
T: +7 (812) 702 1901, Fax: +7 (812) 591 5230;
- Dispatcher at AEKhK, T: +7 (3955) 54 0040;
- Dispatcher at SKhK, T: +7 (3822) 76 2026;
- Dispatcher at UEKhK, T: +7 (34370) 9 2477, +7 (34370) 9 5577;
- Dispatcher at PO EKhZ, T: +7 (39169) 94 000, +7(39169) 94 222, +7(39169) 33 300; and
- Dispatcher at SPb-IZOTOP, T: +7 (812) 960 0879.

8. QUALITY ASSURANCE

Quality during the operation of packages is assured in compliance with terms and provisions set forth in the following:

- Quality Assurance Programme (Specific) during Transportation of Radioactive Material Ref. No. POK-4-2017 (AEKhK);
- Quality Assurance Programme during Transportation of Radioactive Material of the *Siberian Chemical Combine* Joint-Stock Company Ref. No. POK 15-113-2019 (SKhK);
- Quality Management Systems. Quality Assurance Programme. Transport Packagings for Radioactive Material. Quality Assurance of Transport Operations and Use Ref. No. STO 07.033-2014 (UEKhK);
- Quality Management Systems. Quality Assurance Programme for Maintenance and Testing of

Transport Packagings Types 30, 48 for Uranium Hexafluoride Ref. No. STO 00.458-2019 (UEKhK);

- Quality Assurance Programme during Transportation of Radioactive Material Ref. No. 20.82/537 (PO EKhZ);
- SPb-IZOTOP's Quality Assurance Programme during Handling and Storage in Transit of Nuclear Material, Radioactive Substances, Spent Nuclear Fuel and Radioactive Waste. Revision No. 12 (put into effect by Order No. 162.147-P dated 7 July 2020) (SPb-IZOTOP);
- General Quality Assurance Programme for Transportation of Radioactive Material, Ref. No. POK(O)-12 (TVEL);
- Quality Assurance Programme for Handling Nuclear and Radioactive Material during Transportation, Ref. No. POK 220.020-2019 (NFC Logistics);
- Specific Quality Assurance Programme for Radioactive Substance Handling during Transportation, Ref. No. POK 01-17 RV (Atomspetstrans); and
- Specific Quality Assurance Programme for Nuclear Material Handling during Transportation, Ref. No. POK 01-17 YaM (Atomspetstrans).

9. REGULATORY DOCUMENTS AND GUIDELINES

- 9.1. Safety Regulations during Transportation of Radioactive Material NP-053-16, Federal Service for Ecological, Technological and Nuclear Supervision (Rostekhnadzor), 2016.
- 9.2. Regulations for the Safe Transport of Radioactive Material, IAEA Safety Standards Series No. SSR-6, IAEA, Vienna, 2012.
- 9.3. Principal Sanitary Rules for Radiation Protection (OSPORB-99/2010). Sanitary Rules and Standards. SP 2.6.1.2612-10.
- 9.4. Radiation Protection Standards. NRB-99/2009. Sanitary Rules and Standards. SanPiN 2.6.1.2523-09.
- 9.5. Sanitary Rules for Personnel and Public Radiation Protection during Transport of Radioactive Material (Substances). Sanitary and Epidemiological Rules and Standards. SanPiN 2.6.1.1281-03.
- 9.6. Regulatory documents in the field of arranging special transportation of goods applicable in the Russian Federation.
- 9.7. Rules for Transport of Goods by Road ratified by Russian Federation Government's Regulation No. 2200 dated 21/12/2020.
- 9.8. European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR). UN, 2015.
- 9.9. National Regulations for Maritime Transport of Dangerous Goods (MOPOG), MorteKhinformreklama, 1990.
- 9.10. International Maritime Dangerous Goods Code (IMDG Code), TsNIIMF, 2007.
- 9.11. Emergency Card No. 701. Rosatom State Corporation, 2011.
- 9.12. Emergency Card No. 702. Rosatom State Corporation, 2011.

10. DOCUMENTATION ON WHOSE BASIS THIS CERTIFICATE OF APPROVAL WAS ISSUED

- 10.1. NFC Logistics' Application for the Issue of the Revised Certificate of Approval for Transport Packaging 48X.
- 10.2. Certificate of Approval RUS/321/H(M)-96T(Rev.7), Rosatom State Corporation for Atomic Energy.
- 10.3. Certificates USA/0592/H(M)-96(Rev.4), USA/0679/H(U)-96(Rev.8), USA/0680/H(U)-96(Rev.8), USA/0681/H(U)-96(Rev.7) issued by the competent authority of the United States.

- 10.4. Certificates GB/3570/H(U)-96(Rev.6), GB/3571/H(U)-96(Rev.7) and GB/3572/H(U)-96(Rev.7) issued by the competent authority of the United Kingdom.
- 10.5. American National Standard for Nuclear Materials - Uranium Hexafluoride - Packaging for Transport. ANSI N 14.1-2019.
- 10.6. International Standard. ISO 7195:2005.
- 10.7. Expert Opinion No. 202-11/2021, FCS&HT SNPO Eleron – VNIPIET JSC, Saint-Petersburg Branch.

11. GENERAL CONDITIONS

11.1. Information concerning Revisions to this Certificate of Approval:

- RU/321/H(M)-96T original Certificate
– Issued 6 March 2002, valid until 1 September 2006.
- RU/321/H(M)-96T(Rev.1) – revised Certificate
Issued 28 April 2004, valid until 31 May 2007.
Amended in compliance with Certificates GB/3570/H(U)-96 and GB/3571/H(U)-96.
References to new regulatory documents included.
- RUS/321/H(M)-96T(Rev.2) – revised Certificate
Issued 5 June 2007, valid until 31 May 2008.
Amended in compliance with Certificates USA/0592/H(M)-96(Rev.1) and Notifications to Certificates GB/3570/H(U)-96, GB/3571/H(U)-96 and GB/3572/H(U)-96; identification mark of the package amended.
- RUS/321/H(M)-96T(Rev.3) – revised Certificate
Issued 22 May 2008, valid until 31 May 2009.
Amended in compliance with Certificates GB/3570/H(U)-96(Rev.2), GB/3571/H(U)-96(Rev.3) и GB/3572/H(U)-96(Rev.2).
New consignors (consignees in case of return transportation) and new revisions of Radiation Protection Programmes (PRZs) and Quality Assurance Programmes (POKs) included.
- RUS/321/H(M)-96T(Rev.4) – revised Certificate
Issued 25 May 2009, valid until 31 March 2014.
Amended in compliance with Certificates GB/3570/H(U)-96(Rev.3), GB/3571/H(U)-96(Rev.4) и GB/3572/H(U)-96(Rev.3).
New reference to the PRZ by PO EKhZ included.
Transshipment point at the Port of Ust-Luga supplemented by Addendum 1.
- RUS/321/H(M)-96T(Rev.5) – revised Certificate
Issued 2 November 2015, valid until 1 September 2016.
Package conformity to IAEA SSR-6 confirmed.
Amended in compliance with Certificates USA/0592/H(M)-96(Rev.2), USA/0679/H(U)-96(Rev.7), USA/0680/H(U)-96(Rev.7), USA/0681/H(U)-96 (Rev.6), GB/3570/H(U)-96(Rev.5), GB/3571/H(U)-96(Rev.6), GB/3572/H(U)-96(Rev.6).
References to new versions of PRZs, POKs, PLAs (Plans for Eliminating the Consequences of Accidents) and new regulatory documents included.
- RUS/321/H(M)-96T(Rev.6) – revised Certificate

Issued 9 August 2016, valid until 31 July 2020.

Amended in compliance with Certificate USA/0592/H(M)-96(Rev.3).

Reference to a new revision of the PLA by UEKhK included.

RUS/321/H(M)-96T(Rev.7) – revised Certificate

Issued 23 July 2020, valid until 31 May 2021.

Package conformity to NP-053-16 confirmed.

Amended in compliance with Certificates GB/3570/H(U)-96(Rev.6), GB/3571/H(U)-96(Rev.7), GB/3572/H(U)-96(Rev.7).

New versions of PRZs, POKs, PLAs included.

RUS/321/H(M)-96T(Rev.8) – current Certificate

Amended in compliance with Certificate USA/0592/H(M)-96(Rev.4). References to Certificates USA/0679/H(U)-96(Rev.8), USA/0680/H(U)-96(Rev.8), USA/0681/H(U)-96(Rev.7) included. Valid until 31 July 2025.

The following has been included: transshipment point at Zabaikalsk railway station; new securing diagrams Dwg. T.01.18-1281.00.00.00, Dwg. T.01.18-1431.00.00.00 (PO EKHz), new versions of PRZ, PLA (SPb-IZOTOP), POKs (UEKhK, SPb-IZOTOP, NFC Logistics).

11.2. For all enquiries related to this Certificate, the following organisations shall be addressed:

- Department for Nuclear and Radiation Safety, Organisation of Licensing and Authorisation Activities, Rosatom State Atomic Energy Corporation:
24 Ul. B. Ordynka, Moscow, 119017
T: +7(499) 949 2927, Fax: +7(499) 949 2305;
- Federal Service for Ecological, Technological and Nuclear Supervision:
34 Ul. Taganskaya, Moscow, 109147
T: +7 (495) 532 1348, Fax: +7(495) 532 1346.
- FCS&HT SNPO Eleron – VNIPIET JSC, Saint Petersburg Branch:
55 Ul. Dibunovskaya, Saint Petersburg, 197183;
T: +7(812) 600 9450.

11.3. Any shipments hereunder are allowed exclusively provided that consignors, carriers and consignees hold relevant licences/permissions in the field of nuclear power uses.

11.4. The registered copies of this Certificate of Approval authenticated as appropriate shall be deemed official documents.

11.5. This Certificate of Approval 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.

11.6. This Certificate of Approval is valid on condition of availability of valid Certificates USA/0592/H(M)-96(Rev.4), USA/0679/H(U)-96(Rev.8), USA/0680/H(U)-96(Rev.8), USA/0681/H(U)-96(Rev.7), GB/3570/H(U)-96(Rev.6), GB/3571/H(U)-96(Rev.7), GB/3572/H(U)-96 (Rev.7) for the package design, issued by the competent authorities of the United States of America and the United Kingdom of Great Britain and Northern Ireland.

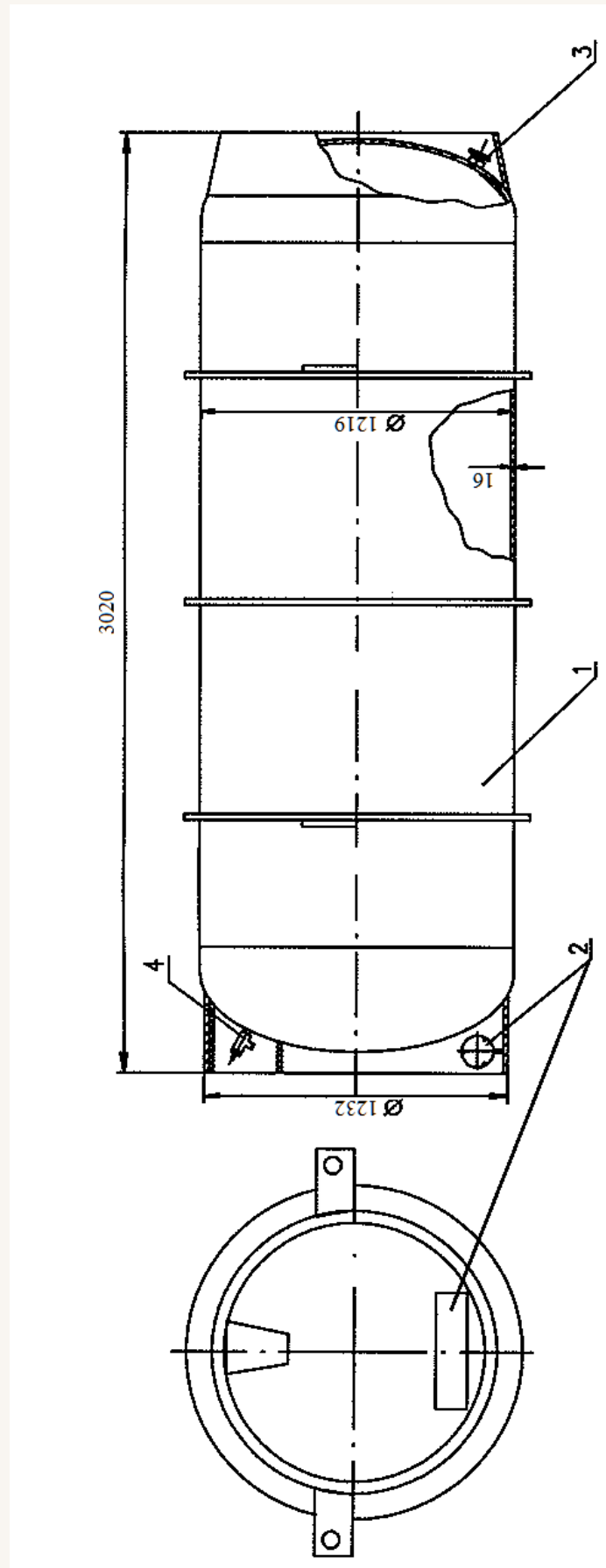


Fig. 1. Type 48X Transport Packaging.
1 – 48X Cylinder; 2 – sampler; 3 – plug; 4 – valve with guard

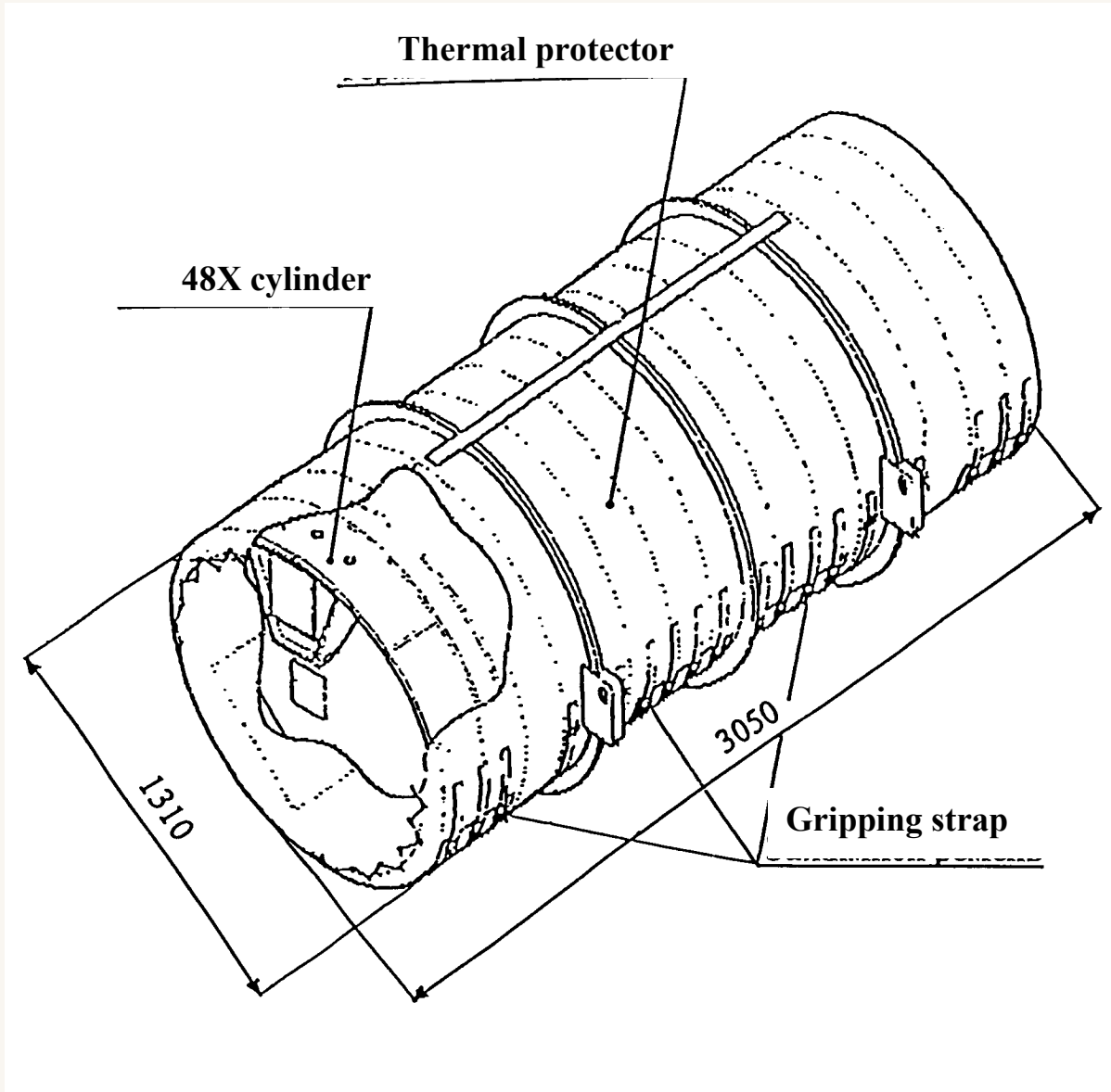


Fig. 2. 48X Cylinder with a BTP-48X soft thermal protector.

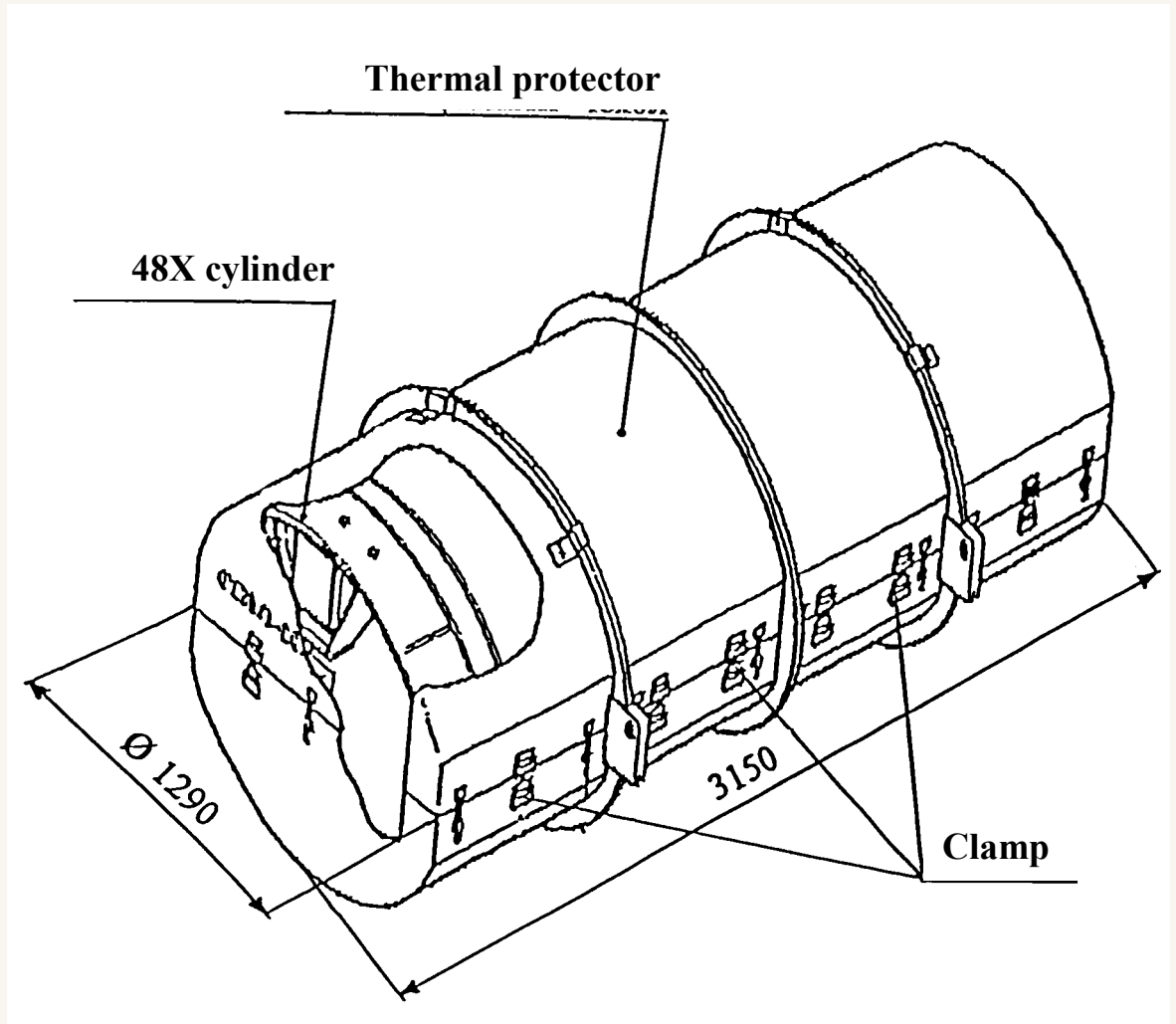


Fig. 3. 48X Cylinder with a CTP-48X hard thermal protector