

«ROSATOM» STATE NUCLEAR ENERGY CORPORATION

CERTIFICATE OF APPROVAL

Registration number 62

dtd. July 22, 2020

for Design and Transportation of Package

**TRANSPORT PACKAGE SETS NE24-42 (UKT1B-50) WITH SEALED RADIONUCLIDE SOURCES
BASED ON SE-75 OR IR-192**

RUS/5375/B(U)-96T (Rev.4)

Issued

21.07.2020

Validity

21.07.2025

**Vice General director
on state policy in the field of
safety of using atomic energy
in defense purposes**

J.V. Jakovlev

№ 000673

List of approval and conformance

CONFIRMED

Vice-chief of Federal service
on ecological, technological
and atomic supervision

A.V. Ferapontov

13.07.2020

CERTIFICATE OF APPROVAL

FOR DESIGN OF TRANSPORT PACKAGE SETS NE24-42 (UKT1B-50) AND TRANSPORTATION
OF RADIOACTIVE SUBSTANCES INSIDE

RUS/5375/B(U)-96T (Rev.4)

Validity up to 21.07.2025

I.o. Chief of Department on safety
management of nuclear fuel, nuclear
energy ship installations and
radioactively dangerous objects of
Federal Agency on ecological,
technological and atomic
supervision

_____ E.G. Kudrjavitsev

« ____ » _____ 2020

Director on special transportation
and emergency - Director of Nuclear
and Radiation Safety Department,
Organization for Licensing and
Authorization Activities of Rosatom
State Nuclear Energy Corporation
_____ S.V. Raikov

« ____ » _____ 2020

Applicant: JSC “Energomontage International” (JSC “EMI”), 107078, Moscow, Krasnovorotskiy proezd 3, bld. 1, room III-5.

Shipper: AO “GNZ NIAR”; JSC “EMI”.

Consignees: Russian and foreign enterprises according to contracts for delivery.

Back Consignees: AO “GNZ NIAR”; JSC “EMI”.

Back Shippers: Russian and foreign enterprises according to contracts for delivery.

Certificate of Approval is granted to JSC “EMI”.

This certificate confirms that design and transportation of transport package set NE24-42 (UKT1B-50) with sealed radionuclide sources based on isotopes Selenium-75 or Ir-192, characteristics of which are enumerated in Div.3 of this Certificate of Approval, meet the requirements of the following norms: GOST 16327-88 “Transport Packages for Radioactive Materials. Common Technical requirements”, “Rules of safety during transportation of radioactive materials (NP-053-16)”, “Sanitary Rules of Safety for Workers and Personal During Transportation of Radioactive Materials (Chemicals)” (SanPiN 2.6.1.1281-03) and “Rules of secure transportation of radioactive materials” (Concrete requirements for safety No. SSR-6, IAEA, Vienna, issue 2018).

According to NP-053-16, transport package set NE24-42 (UKT1B-50) is slated for type B(U) packages.

Transport package set NE24-42 (UKT1B-50) is designed for transportation by air-, auto-, sea- and railway sources of transportation.

Name of transport package set: transport package set NE24-42 (UKT1B-50).

Authentication token of the package: RUS/5375/B(U)-96.

Transport category of the package – “III Yellow”.

Transport index, not more – 10.

Transportation of transport package set NE24-42 (UKT1B-50) without radioactive content inside is provided according to transport category not higher than II-Yellow.

UN number, transport name: 2916, Radioactive Material, type B(U) package, fission or non-fission – free package. 2909, Radioactive Material, free package – goods made of natural or depleted uranium or natural thorium.

1. Basic purpose of package set

The transport package sets NE24-42 (UKT1B-50) are designed for transportation and temporarily (transit) storage of sealed sources of gamma-radiation Se-75 and/or Ir-192.

2. Design of transport package set

The transport package set NE24-42 (UKT1B-50) (see Picture 1) consists of cylindrical body (1) with cap (3) made of corrosion-proof steel 12X18H10T. Body and the cap are connected by flange with silicon o-ring insert. Radioactive sources are placed into inner steel basket (5) with working volume D=24 mm, H=42 mm, which is sealed by cap (2) made of depleted uranium. Inside the body there are depleted uranium protection shield (6) and heat

protection unit (4) made of gypsum. The bottom of the UKT has damping device (7) which prevents mechanical damage. The outside surface of the body is equipped with handles (8) needed for cargo operations. There is also socket for sealing of container.

Dimensions:

D = 193 mm;

H = 253 mm;

W = 231 mm.

Weight BRUTTO is not more than 52 kg.

Keeping of radioactive content during normal and emergency conditions of transportation is provided by tightness of container and transport capsules which, as sources, are special form materials.

3. Radioactive content

In transport package sets NE24-42 (UKT1B-50) it is allowed transportation and temporarily (transit) storage of certified sealed sources of gamma-radiation Se-75 and/or Ir-192 slated to special form radioactive materials with total activity 74 TBq (2000 Ci) duly certified as special form radioactive material.

4. Radiation Safety

4.1. Radiation safety is provided according to the requirements of Rules NP-053-16 and rules of IAAE No.SSR-6.

4.2. Equivalent dose of gamma-radiation in any point of outside surface of package shouldn't exceed 2 mSv/h and at the distance 1 m from the surface of radiation heads – 0,1 mSv/h. Transport index shouldn't exceed 10.

4.3. Total TI of a number of packages placed in one sea-, auto-, railway-source of transportation shouldn't exceed 50. During transportation by air, total TI shouldn't exceed 50 for civil plain and 200 for cargo aircraft. During transportation by sea, total TI shouldn't exceed 50 for parcels or little transport containers and 200 for big transport containers or the whole ship.

4.4. Level of radiation in any point of external surface of transportation source shouldn't exceed 2mSv/h (200 mBr/h); at 2 m distance – 0,1 mSv/h (10 mBr/h).

4.5. Concrete transport category and transport index is defined by the Shipper according to NP-053-016 and/or rules of IAAE No.SSR-6 ed.2018, if needed.

5. Terms of exploitation

5.1. Exploitation of package is provided according to the requirements of existing norms: "Rules of safety during transportation of radioactive materials (NP-053-16)", "Norms of Radiation Safety" NRB-99/2009, "Sanitary Rules of Safety for Workers

and Personal During Transportation of Radioactive Materials (Chemicals)” (SanPiN 2.6.1.1281-03), OSPORB-99/2010 “Main Sanitary Rules of Safety” and manual.

5.2. Transportations provided according to this certificate may be provided only if Shippers, Forwarders and Consignees have properly arranged licenses (permissions) to deal with radioactive materials.

5.3. Packages validity of which is finishing within the period of validity of this certificate, may be used only if their working period is prolonged according to NP-024-2000.

6. Emergency terms

In case of emergency situation occur during transportation, it is necessary immediately to contact with:

- Dispatcher of Center of Transportation Control OAO “Atomspetztrans” by phones (499) 949-4481; (499) 262-31-08; (495) 657-86-07;
- ChU FGUP “SKZ RosAtom”, (495) 933-60-44, (499) 949-23-11;
- Dispatcher of AO ATZ SPb, round a clock, (812) 702-19-00, fax (812) 591-53-33;
- Operative Duty of Rostekhnadzor by phones (495) 532-15-08; (495) 532-15-09; (495) 532-15-10,
- Dispatcher of AO “EMI”, round a clock, by phone (499) 262-36-73; as well as emergency card No. 701, “Plan of Work to Eliminate Consequences of Emergency During Transportation of Radioactive Substances” OAO “GNZ “NIIAR”.

7. Quality Assurance

7.1. Program Of Quality Assurance For Radioactive Substances During Their Usage, Transportation And Storage POK ISM-02 Issue 1 JSC EMI.

7.2. Program Of Quality Assurance For Radioactive Substances During Their Transportation OAO “GNZ “NIIAR” by Car POK 086-108-2016.

8. Norms and Rules

8.1. “Rules of safety during transportation of radioactive materials

(NP-053-16)” 8.2. “Rules of secure transportation of radioactive materials” (Concrete requirements for safety No. SSR-6, IAEA, Vienna, issue 2018)

8.3. “Sanitary Rules of Safety for Workers and Personal During Transportation of Radioactive Materials (Chemicals)” (SanPiN 2.6.1.1281-03)

8.4. GOST 16327-88 “Transport Packages for Radioactive Materials. Common Technical requirements”

- 8.5. "Norms of Radiation Safety" NRB-99/2009
- 8.6. "Basic Medical Rules Of Radiation Safety" (OSPORB-99/2010), "Sanitary Rules and Norms" SP.2.6.1.2612-10;
- 8.7. "Requirements for Planning and Readiness to Eliminate Consequences of Emergencies During Transportation of Nuclear Materials and Radioactive Substances" NP-074-06, Rostekhnadzor, 2006;
- 8.8. "Requirements for Quality Assurance Programs for Nuclear Enterprises" NP-090-11, Rostekhnadzor, 2012;
- 8.9. "Content and Structure of Radiation Safety Program During Transportation of Radioactive Materials" (RB-127-17). M.: Rostekhnadzor, 2017;
- 8.10. "Recommendations for Elaboration of Q/A Programs During Transportation of Radioactive Material" RB-110-16. M.: FBU NTZ JRB, 2016.

9. List of Documents Used

- 9.1. Application of AO "V/O "Isotop" for issuing of Certificate of Approval for design and transportation of transport package set NE24-42 (UKT1B-50) with sealed radionuclide sources based on isotopes Selenium-75 or Ir-192, No. 58/29-01/1914 dtd 27.05.2020 (power of attorney JSC "EMI" No. 26/2020 dtd 11.03.2020);
- 9.2. Expert Report No. 58/29-02/5375-4 dtd 26.05.2019;
- 9.3. Plan of Work to Eliminate Consequences of Emergency During Transportation of Radioactive Substances PL ISM-01 Issue 2 JSC EMI, copy;
- 9.4. JSC "EMI". Agreement for Services/Works for Prevention and Elimination of Emergencies During Transportation of Radioactive Substances (copy) No. 218-01/26-01/20-64 dtd 30.04.2020.
- 9.5. Plan of Work to Eliminate Consequences of Emergency During Transportation of Radioactive Substances of AO "GNZ "NIIAR" (copy).
- 9.6. AO "GNZ "NIIAR". Agreement for Services/Works for Prevention and Elimination of Emergencies During Transportation of Radioactive Substances (copy) No. 218-01/26-П/20-23/64/13373-D dtd 07.02.2020.

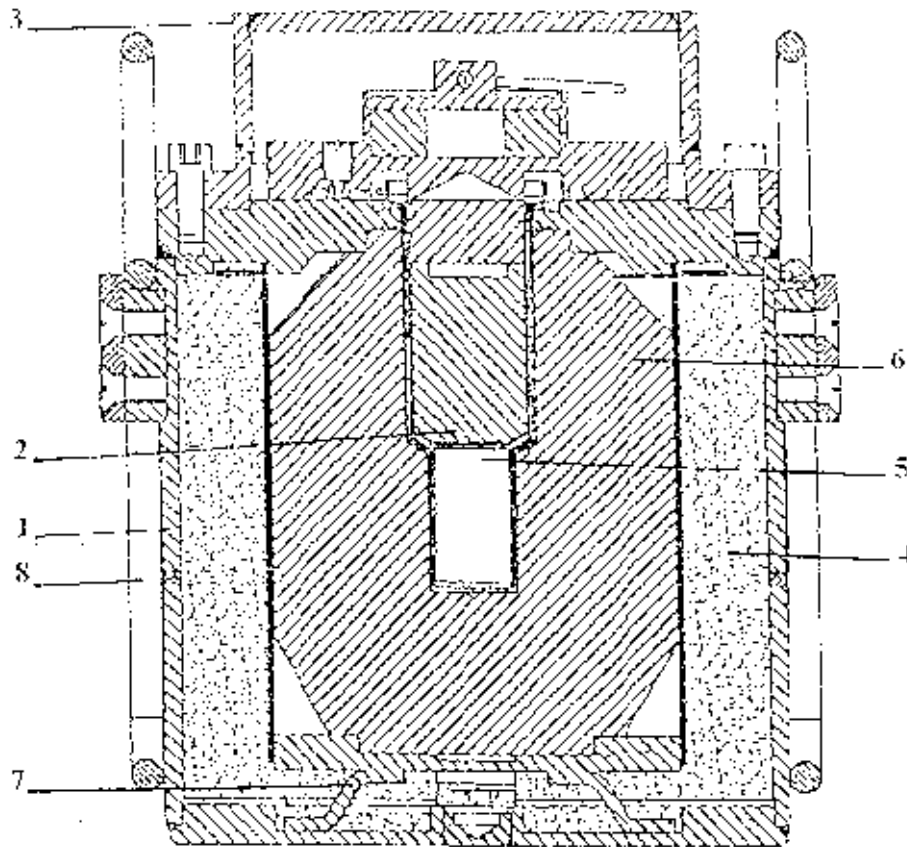
10. Common Terms (Usage of Certificate of Approval)

- 10.1. On all questions connected with this certificate one should apply to:
 - Department of Nuclear and radiation Safety of State Corporate of Atomic Energy "Rosatom" (119017, Moscow, Bolshaya Ordynka Str. 24, tel.: (499) 949-29-27, fax (499) 949-23-05);
 - Federal Service of Ecological, Technological and Atomic Supervision, 109147, Moscow, Taganskaya Str., 34, tel. (495) 532-13-48, fax (495) 532-13-46;
 - AO "V/O "Izotop" (119435, Moscow, Pogodinskaja str. 22, tel.: (495) 981-96-16, fax: (499) 245-1721.

10.2. Only original and copies of this certificate of approval officially recorded are valid.

10.3. The present Certificate of Approval doesn't liberate Shipper and Consignee from implementation of any request of the government of any country on/across territory of which transportation of this package is provided.

Transport package set NE24-42 (UKT1B-50)



Picture 1

1 – Body; 2 – Cap; 3 – Cap; 4 - Thermal protection; 5 – Basket; 6 - Biological protection; 7 - Damping device; 8 - Handle

*Translation is correct and
fully corresponds the original*

A. Alekseev



July 23, 2020