

7. EMERGENCY RESPONSE TO ACCIDENTS IN TRANSPORTATION OF RADIOACTIVE MATERIALS

7.1. General provisions and requirements

7.1.1. Malfunctions and failures of transport that do not influence the cargo should be remedied according to the procedure established for every kind of transport observing the established requirements for ensuring radiation safety. Remedial operations to remove the malfunctions and failures should be supervised by the person responsible for escorting the cargo, and (or) taking into account the information contained in the warning signs placed on the cargo and transport, and also considering the requirements of sanitary regulations for transportation of radioactive materials.

7.1.2. Post-accident operations should be carried out by rescue teams of the accident centers subordinated to the nuclear energy management authority, and specialized accident response teams of the operating organizations.

7.1.3. Approval of accident cards for different radioactive cargoes and defining the procedure of their use is the responsibility of the nuclear energy management authority.

7.1.4. Prior to the transportation the consignor (consignee) should have a post-accident action plan for elimination of the consequences of the transportation accident considering specific transportation conditions and requirements. The action plan should be approved according to the established procedure.

7.1.5. In order to be able to take timely accident elimination measures the consignor (consignee) should ensure systematic transit control of the cargo, excluding empty packages.

7.2. Accident classification and principle requirements to actions in case of accidents

7.2.1. In order to facilitate immediate assessment of the radiation danger following the accident with the radioactive cargo and take adequate initial actions the accidents are divided in three categories according to the level of danger:

7.2.1.1. Accidents category I – the accidents in which mechanical impact on the radioactive cargo causes no apparent damage or causes insignificant damage, weakening or rupture of some fastening elements of the transport, or the cargo has a minor heat exposure (without direct contact with fire) due to a fire outside the cargo compartment or transport.

Accidents of this category do not result in radioactive emissions from the packages exceeding the values permissible for normal transportation conditions, and radiation level cannot rise higher than 20%.

7.2.1.2. Accidents category II :

a) the cargoes with packages type B, type C or with the packages containing fissionable material are inflicted significant mechanical damage and (or) the packages get in the seat of fire; the resulting radiation increment and radioactive emissions should not exceed the limits established by these Regulations for accident conditions in transportation;

b) the cargo with production packages and packages type A, which contain no fissionable material, are caused significant mechanical damage, or such packaged get in the seat of fire, or the packages are completely destroyed.

7.2.1.3. Accidents category III – the accidents in which packages type B, type C or packages containing fissionable material are partially or completely destroyed; radiation levels and radioactive emissions from the packages can exceed the limits established by these Regulations for accident conditions in transportation (beyond the design basis accident).

7.2.2. Initial assessment of the accident danger and work arrangements should be the responsibility of the person escorting the cargo, who should have adequate training and relevant instructions from the consignor (consignee). Until the arrival of the representative of consignor (consignee), or rescue team, or representative of the nuclear energy management authority, or regional accident response squad, that person leads the activities to eliminate the consequences of the accident.

In case as a result of the accident the escorting personnel is incapable of carrying out its duties, or in case of its absence, a representative of the transportation organization, officer of the internal affairs body or fire rescue squad, governed by the accident card, information from the warning signs on the cargo and transport, and the results of visual inspection, should assess the level of accident danger and undertake initial actions.

7.2.3. In case of accidents category I, provided the escorting personal is available and able to function, the consequences of the accident should be eliminated by that personnel together with the transport workers and officers of the internal affairs bodies. After the transport and cargo are made good and the accident report is written, the decision on further transportation of the cargo should be taken by the person escorting the cargo together with the employees of the transportation organization.

7.2.4. In case of accidents category I, provided the escorting personnel is unable to function or in case of its absence, the consequences of the accident should be eliminated according to the requirements of the accident card by the transport workers and officers of the internal affairs bodies. Information from the labels and radiation warning signs on the cargo and transport should be taken into account.

In order to decide on the possible further transportation, a representative of the consignor (consignee) should be invited to the accident site; the said representative should prepare an accident report and take decision with regard to further transportation of the cargo.

7.2.5. In case of accidents category II and III the following activities should be carried out considering the requirements of the accident card:

- rescuing those in danger and giving first aid to the injured;
- fire fighting in case of fire;
- reporting the accident;
- evacuating the people from potentially dangerous area to a distance established in the accident card and as directed by the person escorting the cargo. In case the accident card or the persons escorting the cargo are unavailable, until the experts arrive, the people should be moved windward to the distance of 100 - 200 m;
- placing danger signs;
- fencing the accident area, and, if necessary, taking extra measures for guarding the cargo;
- ensuring public order at the site of the accident;
- making visual inspection of the cargo and updating accident report according to the accident card;
- taking urgent emergency actions to eliminate the consequences of the accident and prevent their expansion;
- registering the persons who might be exposed to radiation during the accident (irradiation, contamination), their detaining until arrival of radiation control experts with radiation control instruments (excluding those requiring urgent medical care in hospital);
- establishing radiation control, if possible.

7.2.6. The persons escorting the cargo, and in case of their absence, employees of transportation organizations, should immediately inform the consignor, consignee, carrier, internal affairs bodies, territorial civil defense and emergency bodies, local governance, state nuclear energy safety regulatory bodies, nuclear energy management body about the location of the accident category II and III.

7.2.7. Upon arrival of rescue forces and facilities of transportation organizations, their activities also should be carried out considering the directions of the person escorting the cargo, and in his absence, according to the accident card. The activities connected with shifting the packages type B, type C and the packages with fissionable nuclear materials should be carried out only on the instruction of the person escorting the cargo, representative of the nuclear energy management authority, rescue leader or leader of the regional accident response squad, when they arrive at the site.

7.2.8. Decision on further transportation of the damaged cargo should be taken by the consignor (consignee). During that transportation fulfillment of these Regulations should be ensured, or such preventive measures should be taken as ensure the level of safety required by these Regulations. The conditions of further transportation should be agreed with the nuclear energy management authority and

state nuclear safety regulatory body and also (in case of railway transportation) by the federal executive body for railway transport.

7.2.9. Accident elimination activities are considered completed after the radioactive contamination is eliminated as evidenced by the radiation/hygienic certificate of the state sanitary and epidemiological supervision and safe transportation ensuring bodies, and a commission report is prepared on the elimination of the consequences of the accident. The report should have appended radiation control reports for the territory and facilities subjected to radioactive contamination.

7.3. Additional requirements to the activities in case of accident during sea transportation

7.3.1. Before the cargo is loaded on board, the captain of the vessel and the responsible representative of the port should be made familiar with the accident card for the cargo.

7.3.2. The persons who should carry out the activities in case of accident with the radioactive cargo should be identified and adequately trained.

7.3.3. Emergency activities in case of accident with radioactive materials on board the vessel are carried out under the command of the captain or the person specially assigned by the captain for the purpose in accordance with the instructions of the carrier and requirements of the accident card.

8. REQUIREMENTS FOR ENSURING PHYSICAL PROTECTION OF RADIOACTIVE MATERIALS

8.1. Ensuring physical protection during transportation of radioactive substances should be governed by the general provisions specified in this section.

8.2. Ensuring physical protection during transportation of radioactive materials should be governed by the general provisions specified in para.8.3, and the requirements of the Physical protection regulations for nuclear materials, nuclear facilities and nuclear materials storage facilities, which were approved by the Order of the Government of the Russian Federation of 7th March 1997 No.264, Convention on physical protection of nuclear material (IAEA document, INFCIRC/274/, Rev.1, signed by the USSR on 21st May 1980, ratified by the USSR on 4th May 1983, enacted on 8th February 1987) taking into account the IAEA recommendations “Physical protection of nuclear material” (INFCIRC/225, Rev.3) accepted by the meeting of the IAEA Technical Committee on physical protection of nuclear material on 25th June 1993.

8.3. In order to ensure physical protection during transportation of radioactive materials:

- the total time in transit should be reduced as much as possible;
- the number of reloads from one transport to another and storage time in waiting for a transport should be minimized;
- transit of the transport carrying nuclear materials should be arranged using different time schedule options and travel routes;
- the consignee should be notified upon shipment of the cargo and the consignor upon its receipt;
- transit routes should be selected avoiding the areas of unrest, natural disasters, other emergencies, etc.
- the number of officials familiar with the route and dates of transit of radioactive materials should be limited to as few as possible;
- access to transportation, escorting and guarding radioactive materials is ensured to the people that have been previously checked for the right to perform respective jobs.