Developing the criteria for decision making during transboundary transport of people, freights and vehicles with superficial radioactive contamination in case of a large-scale radiation accident

During transboundary transport of people, freights and vehicles, including airplanes, ships and trains, they are contaminated in the territory of the states which received radioactive contamination due to a radiation accident.

Decontamination of contaminated objects may lead to generation of radioactive waste in any of the countries receiving a vehicle, passengers or freights. Actions of different countries in such cases may differ: disregard of the situation; ban against entry to a country; establishment of partial restrictions and conduct of radiation monitoring of incoming vehicles, freights and passengers, etc.

It is necessary to work out unified approaches to solve this problem, which would be acceptable to the majority of the countries and which would become a basis for the corresponding national regulatory documents.

Managing radioactive waste generated during decontamination of people and decontamination and disposal of freights and vehicle arriving from suffering states in case of a large-scale accident

A large-scale accident in a country unavoidably means arrival of people, ships and freights having radioactive contamination to neighboring countries due to the lack of 100 percent radiation monitoring. The need for their decontamination or disposal of freights and vehicle will unavoidably lead to generation of radioactive waste.

Laws of many countries, including Russia, ban import of radioactive waste to the territories of their countries. So, radioactive waste generated during decontamination of people, their clothes and personal belongings, and equipment of the staff who rendered assistance in the suffering countries has no legal grounds to be imported to the territory of the country.

It is necessary to identify this category of radioactive waste and develop recommendations for special management conditions, including those dealing with legal regulatory and economic aspects of the problem. L

Ensuring radiation protection of the public in case of a radiation accident at a nonradiation facility (a steel mill, a carrier) leading to radioactive contamination of an area.

Criteria for decontamination of the territory of a populated area, residential and social buildings, and child welfare institutions In case of a radiation accident at a non-radiation facility, for example, melting of radionuclide source at a steel mill with radionuclide emission and local contamination of the environment, there are no criteria (admissible levels) which when they are achieved would allow completion of protective actions, including decontamination. Such criteria may include the rate of gamma radiation dose, levels of superficial contamination of houses, streets and residential apartments.

Decontamination of all these objects down to the pre-accident level would cause significant financial expenses, substantially disturb normal life of people and lead to exaggerated perception of the actual significance of radiation impact. At the same time, the presence of significant residual levels of radioactive contamination of some of the objects would cause protests of the public and conflict situations. Finding a reasonable compromise coming from a reputable international organization is necessary to guarantee radiation protection of the public and preclude unjustified disturbance of public normal life.

Regulatory control of use of examination equipment which may cause additional man-induced irradiation of people
A broad use of X-ray examination equipment facilitates additional irradiation of a significant part of the world's population. There are different approaches to regulating this type of application of ionizing radiation sources. They differ by the procedure of application of X-ray examination facilities and by the quantity of admissible irradiation of examined people. Examination equipment is widely used at mass events, including those related to sports and performing arts, in museums and theatres, at industrial facilities, in the underground railways, etc. At the same time, a cumulative dose of population irradiation significantly rises herewith the principle of voluntary X-ray examination is ignored.

Groups of persons such as children and pregnant women, previously protected by the regulations, now receive "additional" irradiation. As the use of X-ray examination facilities develops, the scale of the problem increases due to the differences in national restrictions on using such systems. A unified international document which would regulate the use of X-ray examination facilities, including that during transboundary transport of people, is necessary.