



## Prof. Rudolf ALEXAKHIN

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### **Present and recent relevant professional responsibilities**

Director of RIRAE (since 1989)  
Vice-President of IUR (2007-2014)

**Proposed responsibility:** Vice-President

### **Declaration of intention**

Radioecology as a branch of natural science within the system of sciences associated with the phenomenon of radioactivity in the context of environment has an over 120 year history. During this period the evolution in the issues and strategy of scientific researches in radioecology is determined by the society needs concerning the solution of the current problems in radiation protection of the environment and humans. Simultaneously radioecology is guided by high methodological standards of theoretical researches taking a position of academic science. At the same time the latest applied aspects of radiation safety assurance are always at the center of its attention.

The main tasks of modern radioecology are closely related to the development of nuclear power engineering; it is considered that the success of nuclear energy generation depends primarily on the solution of the environmental problems. In this context the questions of radioactive waste management and spent nuclear fuel are the most important among other radioecological issues together with the study of radioecological problems of possible radiation accidents with radionuclides release in the environment. The radioecological problems of nuclear legacy can't be eliminated from the agenda. Significance of radioecological problems became particularly obvious for the society after Fukushima Daiichi NPP accident in Japan in 2011. A comprehensive assessment of nuclear energy application in different spheres of human economic activities is impossible without the in-depth analysis of radionuclide migration regularities in different environments and impact of ionizing radiation on living organisms (their populations and biogeocenosis) in their ecosystems. This assumes the use of modern methods of precision researches and radionuclide transport modeling through the trophic chains leading to humans. Among the major theoretical problems of radioecology is the study of the combined impact of complex anthropogenic factors (along with radiation) on the environment and humans. It is therefore time to harmonize rationally the quantitative parameters of impact assessment of ionizing radiation on humans and nature with establishing uniform standards of acceptable impact norms. The ecocentric principle of humans and biota radiation protection should be developed which suggests the study of irradiation effect at the ecosystem level in a wide range of doses.

In implementation of its activity IUR should enhance international cooperation with the organizations involved in the activities related to the radiation safety (IAEA, UNSCEAR, ICRP, etc). Cooperation



coordination of organizations and groups, engaged in radioecological researches at the international and national levels, should be strengthened with IUR coordinating role. From this point of view it should be mentioned that according to the results of the last conference on radioecology and environmental radiation (Barcelona, 2015) about 25% of all radioecological researches are conducted in Russia (14%) and CIS states. In Russian Federation a well-known Russian-language journal called 'Radiation biology. Radioecology' is published where I am the member of the editorial board.

In general the modern period of radioecology development is characterized by the increasing demand of its knowledges aimed at solving the problems of great public significance related to the protection of the environment and human health. IUR should continue to play an important role in modern society as the department of knowledge providing the successful solutions of important theoretical and practical problems.

I am ready to serve our Union in future within its Board of Council. Taking into account the IUR Constitution I agree to accept the different position if necessary, but the same level of commitment.