

THE CONCEPT OF RADIOECOLOGY EDUCATION IN BELARUS

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1. INTRODUCTION

The lack of adequate radioecological education and hence, 'radiation ignorance' is almost notorious for the whole world. During the last decade the world power producing companies have issued a great number of colourful booklets and information materials designed for totally unprepared public. They undoubtedly contribute to advertising the atomic energy but do not provide useful radiation related information as mostly comprise general knowledge on e.g. the atom structure or NPP operation principles covered in a very much elementary if not primitive way.

Meanwhile the atomic energy is becoming a substantial element of the environment and calling for much more serious and adequate information. In this context the population of Belarus as the most suffered from the Chernobyl accident with the anthropogenic radioactivity continue affecting almost all the spheres of man's activity must know about radiation no less than about electricity.

Had the people of Belarus been duly informed and at least initially educated in the elementary methods of individual radiation protection and agriculture production control, had they been aware in psychological peculiarities of life in the contaminated territories along with the sufficient number of specialists with the expertise required for working out the recommendations for those who were to make decisions, the consequences of the Chernobyl disaster, including social, psychological and medical aspects, could have appeared not so heavy; the efficiency of protective measures undertaken at that time might also have been much higher than that had been observed. The necessity of general and obligative radioecological education follows from the long-term character of Chernobyl disaster consequences, geographical position of Belarus (some nuclear power plants (NPPs) of other countries are operating now near its borders), the claim of the strict radiation control in all branches of economy including export and import.

A certain work to develop the system of radioecological education in Belarus was carried out. According to decision of the Ministry of Education and Science in 1989 the radiation safety disciplines were included in the academic plans of all secondary and higher schools. In 1992 the International Sakharov College of Radioecology (now it is the Institute, ISIR) was opened in Minsk and the training of the specialists with higher education in radioecology has been begun. In some institutes like Belarusian Agricultural Academy special radioecological chairs are opened. The training and retraining of the specialists for radiation control network and activities is targeted to mitigate the consequences of the Chernobyl accident and it is supervised by the Training Informing and Radioecological Centre of the Management Academy of the President of Belarus.

At the time being the text books on radiation protection, unique as they are as there are no analogous in the world, have already been published and in mass edition in Belarus.

Nevertheless, there has been neither a unified concept of radioecological education developed yet nor the integral educational system purposefully designed for teaching radioecological disciplines at various educational levels. The latter is of special concern and importance as the social tension is being induced by the lack of knowledge in behaviour of the radioactive materials and substances exercised by all age groups of population living in the contaminated territories. The problem is even more aggravated by the fact that before the Chernobyl accident the radiation culture, i.e. standard

knowledge on radiation protection did not exist at all. Consequently, the decisions on elimination the consequence of the Chernobyl accident made at the amateur level were inefficient and regrettably still remain so.

It has led to the following objective discrepancies arisen, developed and/or become profound between

- necessity to provide vital activity of the Belarusian population within complicated radioecological conditions and the level of the population's awareness in questions of radiation safety;
- necessity of psychological rehabilitation of Belarusian population and the absence of corresponding programmes of radioecological education and enlightenment;
- necessity of qualified and efficient managing the mitigation of the Chernobyl accident consequences and the state of the radioecological knowledge among decision-makers of all levels;
- necessity of wide range employment of ionising radiation in different human activities and unsatisfactory knowledge of its features among workers;

The concept proposed below is worked out in correspondence to the more general "Conception of protection measures in reconstructing period for population resided at the Belarus territory suffered by radioactive contamination because of the Chernobyl disaster" adopted by Cabinet of Ministers of Belarus. It is based at the current view of the Chernobyl problems in reconstruction period and on experience of the world science.

2. BASIC STATEMENTS OF THE CONCEPT

2.1. The radioecological education is the intermediate part of the Belarus national educational system and is targeted to form a current knowledge for adequate understanding and apprehending of wide range of problems connected with radiation impact on the environment and a human being, employment of ionising radiation in national economy and alleviation of consequences of radiation incidents, accidents and disasters.

2.2. The radioecological education should be spread over the whole adult population. It is suggested as for citizens educated at traditional educational levels (secondary, special secondary and higher levels of education, the network of training and retraining specialists) but for another part of population through their enlightenment and informing on questions of radiation safety and hygiene.

2.3. The content of the radioecological education at different levels is formed by taking into account the basics of scientific knowledge just formed among students and is the same for definite categories of students.

2.4. In secondary and special secondary schools the radioecology is introduced as the obligative subject at graduate courses.

2.5. In higher institutions the radioecology is delivered obligatively. Its content depends on a training speciality profile. In higher institutions training specialists on radioecology the separate subject on general radioecology can be not introduced.

2.6. The content of radioecological education within the network of training and retraining specialists is defined by corresponding programmes of the Ministries, Councils and Boards supervising the organisations which deliver their workers to train or to retrain.

2.7. The enlightenment and informing of population in questions of radioecology is conducted at the base of special permanently operating studying, consulting and informing centres of radiation safety and hygiene placed in large towns and district centres of polluted areas of Belarus. The special attention should be paid to residents of

contaminated territories, resettled citizens, clean-up workers and people residing within the 30-km zones round operating NPPs.

2.8. To satisfy needs of the Republic in specialists on radioecology including training the academic staff the creation of profiled higher and special secondary institutions or opening special departments in existing institutions is required.

3. REALISATION OF THE CONCEPT

Taking into consideration the difficult economic situation in the country it is clear that the realization of the conception must start with the most effectual measures, which would lead to the best results with minimum expenditures.

3.1. At the secondary educational level the compulsory radiation protection course must be introduced in the school-leavers forms in the most suffered Gomel, Mogilev, Brest regions using the textbooks edited in 1994. It needs to found special educational rooms to consult teachers (radiometric instruments, textbooks of methodics, posters carried out in ISIR) in the regions which were mentioned already.

3.2. To develop and to introduce special radiation safety programmes according to the age of the children from the suffered regions in health-improvement and rehabilitation centres using the textbooks edited in Belarus and equipping them with educational consulting rooms.

3.3. Prolonged consequences of the disaster demand urgent planning of the gradual substitution of the expert posts in the State Authorities making decisions connected with the problems effected by Chernobyl accident, by the specialists who received a special training in ISIR and retraining at the Republic Academy of management.

CONCLUSION

In the future radioecological education must become a multilevel training embracing various strata of society. In Belarus where the fifth part of the territory is polluted by the radiowastes it is necessary to know the personal protectional rules. It provides not only successful radiation safety but it also creates normal conditions of living and managing in the radiation environment.

The concrete ideas discussed at the special seminar where the interested organisations took part were presented to the Government of Belarus.

In the face of developing nuclear technologies the radiation accidents can not be excluded completely in future, and the efficiency of eliminating their consequences will greatly depend on the knowledge and expertise available, thus the experience acquired in Belarus in providing radioecological education, the various forms of which are being currently introduced into the national system of education might be helpful for many other countries.