
TACIS Belarus – An Overview of Results and Planned Activities in the Field of Radiation Protection, Emergency Preparedness and Waste Management

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Abstract:

Since 1996 the nuclear safety authorities of the Republic of Belarus were assisted with TACIS activities entitled: "Transfer of Western European Regulatory Methodology and Practices to the Nuclear Safety Authorities of Belarus".

Considering the results of the Exploratory Mission which was arranged in 1996 the Regulatory Assistance Projects BE/RA/01 and BE/RA/02 were successful realised in 1998/1999 and in 2003/2004, respectively. These projects were financed by the Commission of the European Communities (EC) and implemented by a consortium of Technical Support Organisations (TSOs) from France (IRSN (former IPSN)), Germany (GRS) and Sweden (SSI) led by Riskaudit IRSN/GRS International. Beneficiary of the projects were Promatomnadzor at the beginning and later the Ministry for Emergency Situations of the Republic of Belarus each in connection with the Republican Centre of Radiation Control and Monitoring (RCRCM).

The actual project BE/RA/03 "Regulatory Assistance to Belarus in the Field of Nuclear Safety and Radiation Protection including Radiological Emergency Preparedness" was started by the end of August 2006.

1 INTRODUCTION

The Republic of Belarus covers an area of 207.600 square kilometers. Being situated in the center of Europe, it borders on Russia, Poland, Lithuania, Latvia and Ukraine (see Fig. 1 in the Annex). The population of the Republic of Belarus is about 10.2 million. About 2 million people live on the territory with the level of radioactive surface contamination of more than 37 kBq/m² Cs-137 as a result of the Chernobyl catastrophe. Belarus became an IAEA Member State on July 29, 1997 /1/.

There are no nuclear power plants on the territory of Belarus, however, radioactive sources, nuclear and radioactive methods and technologies were widely used and are still being used in medicine and different fields of national economy of the republic. The government of the Republic of Belarus places high emphasis on the issues of provision of nuclear and radiation safety /1/.

Since 1996 the nuclear safety authorities of the Republic of Belarus were assisted with TACIS activities entitled: "Transfer of Western European Regulatory Methodology and Practices to the Nuclear Safety Authorities of Belarus".

The following chapters will give an overview about the Exploratory Mission, the Regulatory Assistance Projects BE/RA/01 and BE/RA/02 and their results related to radiation protection, emergency preparedness and radioactive waste management. Furthermore the content of the actual project BE/RA/03 and the Belarusian proposals related to future activities will be described.

2 OVERVIEW OF FINALISED AND ACTUAL PROJECTS

2.1 Exploratory Mission

In May 1993 the government of the Republic of Belarus requested the European Commission (EC) to carry out an Exploratory Mission under the TACIS Programme. In October 7-11, 1996 the Exploratory Mission - financed by the EC - was realised by representatives of GRS, IPSN and SSI. The mission took place

- in the former authority Promatomnadzor,
- in the Ministry of Health,
- in the Committee for Standardisation, Metrology and Certification and
- in the Committee of Hydrometeorology.

The results of the Exploratory Mission were published in the RISKAUDIT Report No. 56 in December 1996. The following main areas of needs were summarised /2/:

- assistance in the field of legislation and regulations,
- assistance in the field of simplification of the administrative structure of authorities,
- assistance in training and education,
- assistance in establishing a system of notification, registration, licensing and inspection and
- co-operation in special problems including financial support.

2.2 BE/RA/01

Based on the results of the Exploratory Mission the TACIS Project BE/RA/01 was organised in the time period March 1998 to May 1999. The beneficiary of the project was Promatomnadzor in connection with the Republican Centre of Radiation Control and Monitoring (RCRCM). The Commission of the European Communities was the Contracting Authority. RISKAUDIT IPSN/GRS International realised the project together with the partners IPSN, GRS and SSI. The results were published in Riskaudit Report No. 280 (May 1999) /3/.

2.3 BE/RA/02

The project BE/RA/02 - financed by the EC - represented the second phase of the transfer of Western European regulatory methodology and practices to the nuclear safety authorities of Belarus. Its general objective was to continue the support and strengthening of the national nuclear safety regulatory system in Belarus.

Since the completion of the first project BE/RA/01 the structure of the regulatory authorities in Belarus has been changed. In autumn 2001 the former authority Promatomnadzor was incorporated as department into the Ministry for Emergency Situations of Belarus (MES) (see Fig. 2 in the Annex).

The second project BE/RA/02 took into account the new structure of the authorities and involved the responsible Belarusian experts of MES.

Most of specific objectives identified for the first project phase (1998/1999) remain valid for the second phase:

- review of the system of notification, registration, licensing and inspection in the field of radiation protection including organisational and administrative aspects,

- providing assistance in the field of:
 - legislation and regulations,
 - radioactive waste management including education and training,
 - methods for measurements of transuranic elements in soil,
 - radioactive and nuclear material transport.

The assistance in the field of emergency preparedness including planning and training was included as a new objective considering the wishes of the Belarusian side. The project was realised by Riskaudit IRSN/GRS International together with a team of the partners IRSN, GRS and SSI.

In the frame of the project (duration 15 month in 2003/2004) nine different meetings were organised in Belarus, Germany, France and Sweden (6 workshops, one training course, one scientific visit and one combined workshop/training course). The results of the projects were presented during the Final Meeting in Minsk (February 10-12, 2004) and published in the Riskaudit Report N° 639 (March 2004) /4/.

2.4 BE/RA/03

The actual project BE/RA/03 - financed by the EC - is titled "Regulatory Assistance in the Field of Nuclear Safety and Radiation Protection including Radiological Emergency Preparedness". It will be realised by RISKAUDIT IRSN/GRS International together with the partners

- Association Vinçotte Nuclear (AVN) of Belgium,
- Gesellschaft für Anlagen- und Reaktorsicherheit (GRS) of Germany,
- Institut de Radioprotection et de Sûreté Nucléaire (IRSN) of France,
- Swedish Radiation Protection Authority (SSI) of Sweden,
- Radiation and Nuclear Safety Authority (STUK) of Finland.

The Beneficiary is the Ministry for Emergency Situations (MES) including the Department for the Supervision of Industrial and Nuclear Safety - Promatomnadzor - and the Institute for Retraining and Professional Development in connection with the Republican Centre of Radiation Control and Monitoring (RCRCM). The Inception Meeting was successfully held in Minsk in August 28-31, 2006 /5/.

The project includes 9 tasks with different (underlined) responsibilities of the involved partners:

- Task 0: Project Inception and Coordination (AVN, GRS, IRSN, SSI, STUK, Riskaudit),
- Task 1: Assistance in the field of legislation and and regulations (GRS, SSI, STUK),
- Task 2: Review of the system of notification, registration, licensing and inspection in the field of radiation protection (SSI, STUK),
- Task 3: Assistance in the field of radioactive waste management including education and training (AVN, GRS, SSI)
- Task 4: Assistance in the field of emergency preparedness including planning and training (AVN, GRS, STUK, SSI),
- Task 5: Assistance in the field of implement. of methods for measurements of trans-uranium elements in soil (IRSN, STUK),
- Task 6: Assistance in the field of nuclear material transport with the emphasis to illicit trafficking (GRS, SSI),
- Task 7: Support to equipment procurement for the upgrading of the equipment for radiological environmental monitoring and for elimination of radiological accidents (GRS, IRSN, Riskaudit),

- Task 8: Participation of the Ministry for Emergency Situations in International Conferences (Riskaudit) and
- Task 9: Assistance to MES in the definition of yearly action programmes, defining the needs and establishing the methodology for the projects included in the action programmes (GRS, Riskaudit, SSI).

The project will be finished in July 2008.

3 OVERVIEW OF SELECTED RESULTS OF BE/RA/01 AND BE/RA/02

3.1 Radiation Protection

In the field of radiation protection the following topics can be summarised as results of BE/RA/01 and BE/RA/02 /3, 4/:

- Information on the regulatory system related to radiation protection in the involved countries,
- Review of the draft law “On the Use of Atomic Energy”,
- Transfer of know-how to establish testing laboratories and participation in practical testing of radiation protection equipment,
- Transfer of knowledge in record keeping of radiation sources,
- Supervision of radiation protection in industrial, research and medical application,
- Study visits in the Karolinska hospital in Stockholm and at medical enterprises in Uppsala,
- Assistance in the field of implementation of methods for measurements of transuranium elements in soil,
- Scientific visit to the IRSN Environmental Radioactivity Metrology Lab (LMRE) at Orsay,
- Training in the field of alpha radiochemistry and low level alpha counting at LMRE,
- Transmission of international experiences about radioactive material transport,
- Discussion of radiation protection programmes for the transport of radioactive material,
- Discussion of measures against illicit trafficking of nuclear material and radioactive sources in Belarus.

3.2 Emergency Preparedness

In the field of emergency preparedness the following topics can be summarised as results of BE/RA/02 /4/:

- Information and discussion about
 - Emergency preparedness planning in Germany related to nuclear safety and radiation protection,
 - RODOS (Real Time Online Decision Support System),
 - IMIS (Integrated Measuring and Information System) and PARK (Program System for Assessment and Mitigation of Radiological Consequences),
 - Short-term emergency protective measures,
- Discussion of the tasks of the Belarusian Institute for Retraining and Professional Development.

3.3 Radioactive Waste Management

In the field of Radioactive Waste Management the following topics are important results of BE/RA/01 and BE/RA/02 /3, 4/:

- Overview on the experiences of storage and waste retrieval in the Nordic countries,
- Discussion of the most important steps to improve the potential hazardous situation of radioactive waste in Belarus including the storage facility Ekores,
- Creation of a state data bank (register) on radioactive waste and related characteristics,
- Technical visit in Studsvik including a number of issues on waste management practice in Sweden,
- Information on experiences and results of reconditioning of old waste in Paldiski in Estonia,
- Discussion of safety issues related to former Russian military radioactive waste storages in Belarus.

4 BELARUSIAN PROPOSALS RELATED TO FUTURE ACTIVITIES

The Belarusian side proposed the following topics with the view on future activities /4/:

- Assistance in drafting an additional chapter related to radioactive waste management in the "Law of Radiation Safety of the Public",
- Assistance in the preparation of subordinate regulations and guidelines in the field of radiation protection and radioactive waste management,
- Further assistance in upgrading the system of notification, registration, licensing and inspection in the field of radiation protection including traffic control,
- Transfer of know-how related quality assurance and control in Xray diagnostics, nuclear medicine and gamma therapy,
- Assistance in training of specialists of response teams at the Institute for Retraining and Professional Development,
- Information exchange on radiological emergency response planning with respect to different types of emergency situations,
- Works on retrieval of radioactive waste from old depositories including methods for the characterization of the waste retrieved,
- Training of Belarusian specialists in using modern equipment and methods for monitoring of transuranium elements,
- Information about the international system of safety and physical security control of high level radioactive sources.

5 REFERENCES

- /1/ National Report of the Republic of Belarus
under the Joint Convention on the Safety of Spent Fuel Management and on
the Safety of Radioactive Waste Management
Minsk 2005
- /2/ Riskaudit IPSN/GRS International
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- /3/ Riskaudit IPSN/GRS International
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Riskaudit Report No. 280
May 1999
- /4/ Riskaudit IRSN/GRS International
TACIS Belarus BE/RA/02
Final Report
Riskaudit Report N° 639
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- /5/ Riskaudit IRSN/GRS International
TACIS Belarus BE/RA/03
Inception Report
Riskaudit Report N° 862
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6 ANNEX



Fig. 1 The territory of the Republic of Belarus



Fig. 2 The Ministry for Emergency Situations of the Republic of Belarus (MES)