



Andreeva and Mayak - Cooperation between Norwegian and Russian Regulatory Authorities, Regulatory Development with Scientific Improvement

This bulletin provides information about recent cooperation meetings organized jointly by the Norwegian Radiation Protection Authority (NRPA) and the Russian Federal Medical-Biological Agency (FMBA). The aim of these regulatory and research meetings was to present the progress within five current projects, to consider future activities within the scope of regulatory cooperation, and to discuss proposals for research projects that might support scientifically the development of regulatory supervision.



Meeting with Russian regulators, Fredrikstad, Norway.

Two meetings were held from 9 to 12 June 2009 in Fredrikstad, Norway. The Russian participation was sponsored by the NRPA and the Research Council of Norway. 35 participants attended the meeting, including experts from NRPA, the Russian Federal Medical-Biological Agency (FMBA), the Burnazyan Federal Medical Biophysical Centre (FMBC), the Emergency Medical Radiation Dosimetry Centre (EMRDC), the Urals Research Centre for Radiation Medicine (URCRM), the South Urals Biophysics Institute (SUBI), the University of Life Sciences (UMB),

the International Atomic Energy Agency (IAEA), the Institut de Radioprotection et de Sûreté Nucléaire (IRSN) and the Russian Embassy in Oslo.

Background for the regulatory cooperation meeting

The successful realization of the projects completed in 2007 resulted in the development of several regulatory documents and solved a number of important radiation protection

problems in improvement of supervision functions of FMBA of Russia at SevRAO facilities. To solve a number of remaining challenges and problems, work within five new regulatory projects began in 2008. These projects include:

- DOSEMAP: Arrangement of Databases on the Radiation Situation and on Individual Occupational Doses at SevRAO Facilities;
- DATAMAP: Computer Map Development of Radio-ecological Data on the Site of SNF and RW Temporary Storage in Andreeva;
- Emergency Response Training: Preparation for and Conducting of Emergency Response Training for Radiological Protection of the personnel of SevRAO Ostrovnoy Facility and the population of Gremikha village;
- Saida Bay: Requirements for Protection of Workers, Public and Environment during Arrangement of Radioactive Waste Management in the Centre of Conditioning and Long-Term Storage at Saida Bay; and
- PRM: Radioecological Safety Improvement through Risk Monitoring of Performance Reliability Violation in the Course of the Spent Nuclear Fuel Management at Andreeva Bay Facility.

Progress of the existing projects during 2008/2009

The purpose of the annual regulatory cooperation meeting "NRPA-FMBA Regulatory Support Project on Radiation Protection at the SevRAO Facilities" was to present the status and review progress on current projects within the FMBA-NRPA cooperation for solving challenges in radiation protection regulation at SevRAO facilities.

From the presentation and discussion of the DOSEMAP project, recent developments with Database on Individual Occupational Doses and its mapping onto the site workshops and territory areas were demonstrated. Some examples of how dose assessments and dose reconstructions can be made, and how this Database can be used for prognosis of planned future work activities were

also provided. The possibility to carry out testing of the methodology and software using specific data on workers involved in radiation hazardous operations in future was discussed.

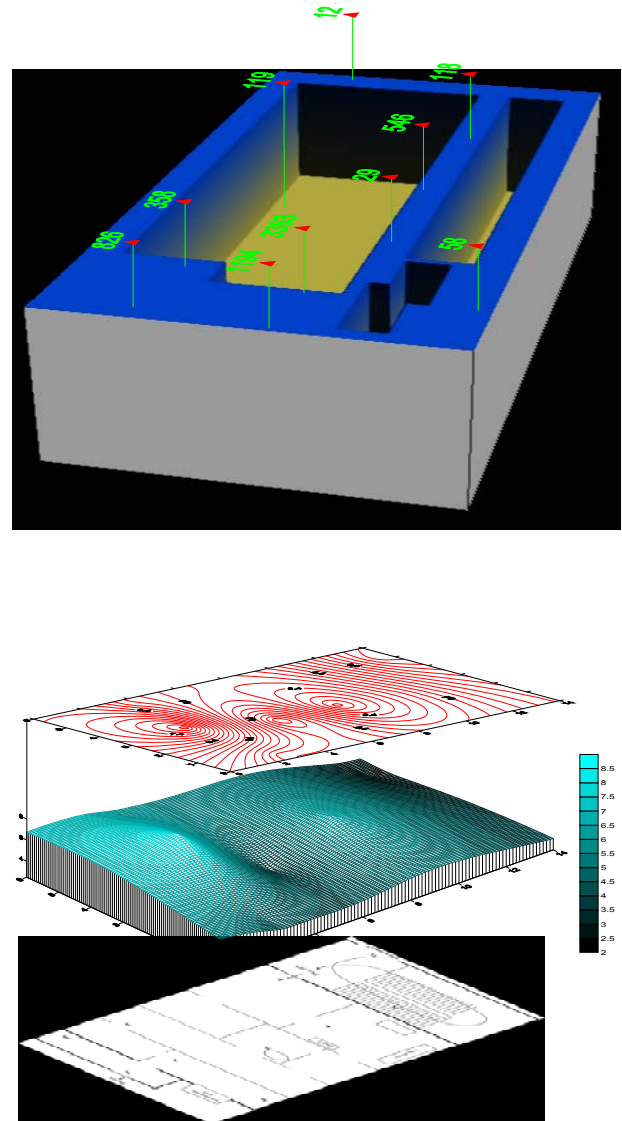


Fig.1. DOSEMAP Project: Radiation Situation in the Building 5 indicating dose rates (upper) and radiation dose rate contours(down).

Presentation of the DATAMAP project development were supported by illustrations of contamination maps and iso-contamination lines, types of calculations which can be made, for example, of the area and total contamination within selected areas.

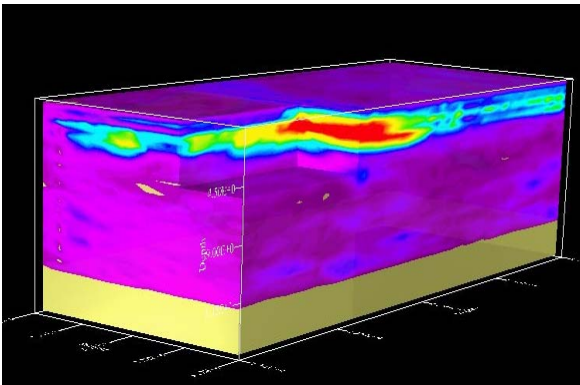
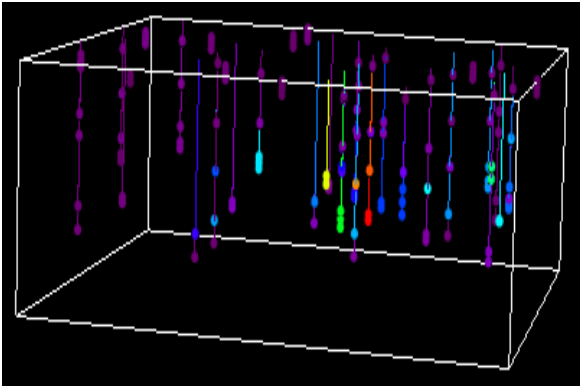


Fig.2. DATAMAP project: Soil Contamination Profile in Base Map and interpolated contamination levels

Discussion of the Emergency Training Project has concentrated upon the differences from previous training exercises the present project was focused on the inter-departmental interactions among organizations within the emergency response system the State Atomic Energy Corporation Rosatom, Russian Service on Emergency Situations, and within FMBA institutions. This project was considered very important because it demonstrated the role of FMBA in the Russian Emercom Service in radiation hygiene and medical response.



Fig.3. Emergency Training Project: Video Conference, Murmansk 19.07.2009



Fig.4. Decontamination team in Gremikha



Fig.5. Decontamination point at the hospital in Ostrovnoy

The Report concerning the Saida Waste Regulation Project presented progress with a threat assessment during the establishment of the system to manage RW produced at the SevRAO facility in Saida Bay. The work to date has identified a potential need for the Saida Waste Regulation Project to expand in order to consider safety of the entire site covering radiation and nuclear safety. Such an extension should include coordination with Rostechnadzor and the Ministry of Defence, Department for radiation and nuclear safety supervision.



Fig.6 Overview with the monitoring system at Saida

The fifth presentation included an overview of current issues related to the development of medical and technical requirements for the diagnostic system for registration of psychological and psycho-physiological information of individuals involved in SNF management. Discussions concerned questions related to how

the results of assessment can be applied to management of operations and legal aspects of the application of the results of assessments.

Future activities in the scope of regulatory cooperation

As a continuation of NRPA-FMBA regulatory cooperation, some priority areas for future activities were discussed:

- Testing of functionality and practical application of existing projects at the SevRAO facilities;
- Comparative analyses with equivalent French and UK systems for DOSEMAP and DATAMAP projects;
- Planning and coordination of future training exercises including more active NRPA participation;
- Developing a brochure describing 10 years of cooperation between the NRPA and Russian Federation regulatory authorities;
- Supporting the IAEA proposal for an International Working Forum on Regulatory Supervision of Legacy Sites.

Background for the research cooperation meeting

Like most forms of regulation, the development of regulatory supervision and systems for the remediation of nuclear legacy needs to be underpinned by robust scientific knowledge. The scientific programme should be directed at helping to resolve critical scientific issues which influence regulatory decisions affecting safety, to reduce uncertainties and increase confidence. The purpose of the research cooperation meeting “Discussion Ideas and Proposals for Research Work arising out of NRPA Cooperation Programmes with the Russian Federation” was to present and review proposals for scientific research projects submitted by Russian institutions for consideration by NRPA. The proposals covered three areas:

- Radioecology and environmental impact assessment;

- Emergency preparedness and response, including preparedness for malevolent actions; and
- Clinical effects and health risks.

Some proposals were concerned with dose reconstruction and evaluation of health risks from chronic exposure which is of global interest. Other proposals were more directly related to planning and supervision of remediation activities in the Russian Federation. Large source terms, such as spent fuel at the Sites of Temporary Storage, present major hazards. Another example is the contamination below ground at the sites in the Southern Urals which is of known concern but where the regulatory basis for their long term management is very limited. Research project outputs should therefore provide a direct link between scientific identification of the risks and the regulatory process for their control. One of the proposals during the meeting was to set up a working group with the relevant institutes, to further develop the research plan and to coordinate the research programme and its links to regulatory requirements.

At the end of the meeting NRPA and FMBA agreed to provide specific feedback to other participant organisations on the next steps. These may include involvement of other agencies and organizations, such as the European Union.



Fig. 7. Visit at the Saida storage facilities for reactor compartment