



Cooperation between Norwegian and Russian Regulatory Authorities: NRPA and Rostekhnadzor

The Norwegian Radiation Protection Authority has been cooperating with the Federal Environmental, Industrial and Nuclear Supervision Service, Rostekhnadzor, on the upgrading of the regulatory framework for the safe decommissioning and disposal of Radioisotope Thermoelectric Generators (RTGs). Cooperation between Norwegian and Russian regulatory authorities has resulted in the development of Russian regulations on emergency response requirements for the transport of large radioactive sources. As a continuation of this project, a Methodological Guide was developed and an Educational seminar and a Joint emergency drill have been arranged in St. Petersburg, Russia.



Meeting on radiation safety in RTG decommissioning between Russian and Norwegian experts, 6-10 June 2011, St. Petersburg, Russia. Photo: NRPA.

Background

Technical cooperation and the exchange of information on safe use of nuclear energy between the Norwegian Radiation Protection Authority (NRPA) and the Federal Environmental, Industrial and Nuclear Supervision Service (Rostekhnadzor) are based on the Bilateral Agreement signed in Moscow on October 20th, 1997. Under the Agreement the Norwegian side undertook the commitment to give financial, technical and other support for the cooperation project for safe decommissioning and disposal of radioisotope thermoelectric generators (RTGs) from lighthouses along the Russian Arctic coast. During decommissioning and transportation of RTGs Rostekhnadzor had concluded that there was a strong need for upgrading the existing

regulatory framework and capabilities in the area of radiation safety control and supervision and the regulatory project was actuated in addition to industrial projects. Based on acquired experience related to preparedness and response in case of radiological accidents during RTG decommissioning, NRPA initiated in 2006 a regulatory cooperation project "Upgrading the Rostekhnadzor capabilities in the area of radiation safety control and supervision during radioisotope thermoelectric generators decommissioning and transportation". Results from the second part of the cooperation project implemented in the period 2009-2011 are covered in this bulletin.



Elimination of radiation accident with RTG. Photo: Rostechnadzor

Project Details

The primary objective of this project was to improve the existing safety regulatory framework of the Russian Federation as regards safe decommissioning and disposal of RTG with the focus on the priorities below:

- Explanations on regulatory requirements and rules;
- Completion of the full-scale threat assessment base for the purposes of licensing;
- Enhancement of in-depth supervision over radiological safety and introduction of a new supervision approach as necessitated by reported RTG-related events;
- Supervision over emergency preparedness.
- Analysis of the accumulated experience in supervising safety during RTG decommissioning and in mitigating consequences of any incidents and accidents which may occur in the course of the ongoing RTG decommissioning in Russia;
- Carried out a risk assessment of removing radioactive heat source from RTG in a hot cell to place the former into transportation packages;
- Arranged and conducted an educational seminar and joint emergency drill;
- Developed a Methodological Guide on Development of Work Plan for Mitigation of Accident Consequences during Transportation of Radioactive Material Freight supplemented with an exemplary Plan of Measures.

Project activities

In the period 2009-2011, the following activities have been performed:



Training classes and special equipments for radiation monitoring and surveillance. Photo: NRPA.

Educational seminar

The educational seminar on radiation safety in RTG decommissioning was held 6-8 June 2011 on the base of “Central Institute for Qualification Improvement” in St.Petersburg, Russia.

The objective of the seminar was to:

- Provide more detailed information to operators, consignees, consignors, carriers and organizations rendering services on how to implement the Federal Standards and Rules related to preparedness and response in case of radiological accidents during RTG transportation;
- Application of regulations and guidance to safety supervision above RTG decommissioning activities in Russia.

Representatives from different regulatory authorities, research institutes, operators, transport organizations and others have shared their knowledge and experience. The wide range of presentations made at the workshop was divided into the following areas:

- General safety issues for RTG decommissioning;
- Safety during RTG transportation;
- Safety and emergency preparedness.

Strong discussions illustrated that Rostekhnadzor has a minor role in radiation and other accident consequence mitigation. At the workshop the question was raised how the role of the regulator can be modified and increased in case of radiation accidents / incidents.



The main conclusions from the seminar

The educational seminar has contributed to preservation and continuity of knowledge, providing for improvement at professional levels of specialists (inspectors) and acquisition and refreshment of theoretical knowledge and practical skills of inspectors on the basis of the actual and prospective needs of inspection activity in the area of RTG decommissioning.

The experiences from the educational seminar have been positive both for the Norwegian and the Russian side.

Joint emergency drill

The main objective of the joint emergency drill, which was held at the Emergency and Technical Centre of Rosatom 9-10 June 2011, was to improve the supervision over emergency preparedness in case of incidents and accidents which can occur during the ongoing RTG decommissioning in Russia. The focus was to get a clear understanding of the roles and tasks of bodies for state safety regulation in case of radiation accident and elimination of its consequences.

The following activities were taken under emergency training:

- Familiarization with techniques and tactics of actions taken by institutions, executive authorities (federal and subjects of the Russian Federation) in case of radiation accidents;
- Demonstration of real actions of the emergency team from Emergency and Technical Center of Rosatom when eliminating consequences of the radiation accident involving RTG;



Emergency rescue team of ETC in action: reconnaissance of the emergency area. Photo: NRPA.



Mobile remote control system taking control over radiation heat source RHS -90. Photo: NRPA.

- Familiarization with actions taken by Leningrad Office of North-Western Territorial Branch of RosRAO subsidiary emergency team with regard to damaged RTG-RHS in 2003;
- Video recordings of the exercise which shall be used for training purposes in methods and techniques targeted to mitigate any incidents and accidents that may arise from the ongoing RTG decommissioning in Russia.

The results and feedbacks have helped to:

- Exchange experience between the emergency drill participants;
- Improve general understanding of roles of organizations and procedures needed during an accident and especially, the Rostechnadzors role in radiation and other accident consequence mitigation.

The main conclusions from the emergency drill

The experience of accident mitigation gained during this joint emergency drill will be used to further improve future safety regulations and supervision and, thereby, reduce probability of future similar accidents. Outputs from the emergency drill can then be used in the training and qualification activities of the personnel, public information etc. Some experience from the drill program and associated discussion could provide basis for developing recommendations on modification of the role of the regulator and better interactions with other regulators like FMBA.



Regaining control over RHS-90 source, its placement in a shielded container for forward disposal. Photo: NRPA.