

Key Radiation Protection Issues in Regulatory Supervision of Nuclear Legacies

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Norwegian Plan of Action - Top Priorities

A regional safety issue

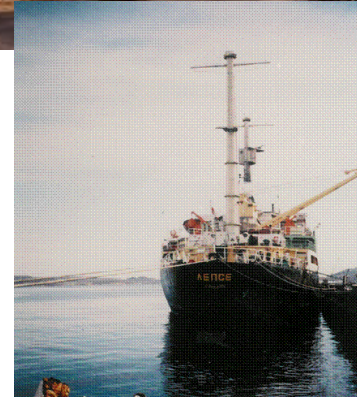
- Promote health and environmental safety in a vulnerable Arctic region
- Prevent accidents and contamination from nuclear facilities, radiation sources and radioactive waste
- Preparedness in the case of accidents and emergencies

A global security issue

- Prevent proliferation of nuclear materials and technology, radiation sources and radioactive waste

• *Safety Culture*

- **Cooperation with Russian regulatory authorities**



Regulatory Authorities in the Programme

Russian Authorities:

- Federal Medical-Biological Agency (FMBA)
Radiation safety (Civilian)
- Federal Environmental, Industrial and Nuclear Supervision Service of Russia (Rostekhnadzor)
Nuclear safety (Civilian)
- Directorate of State Supervision over Nuclear and Radiation Safety of the Ministry of Defense (DSS NRS) - *Nuclear and radiation safety (Military)*

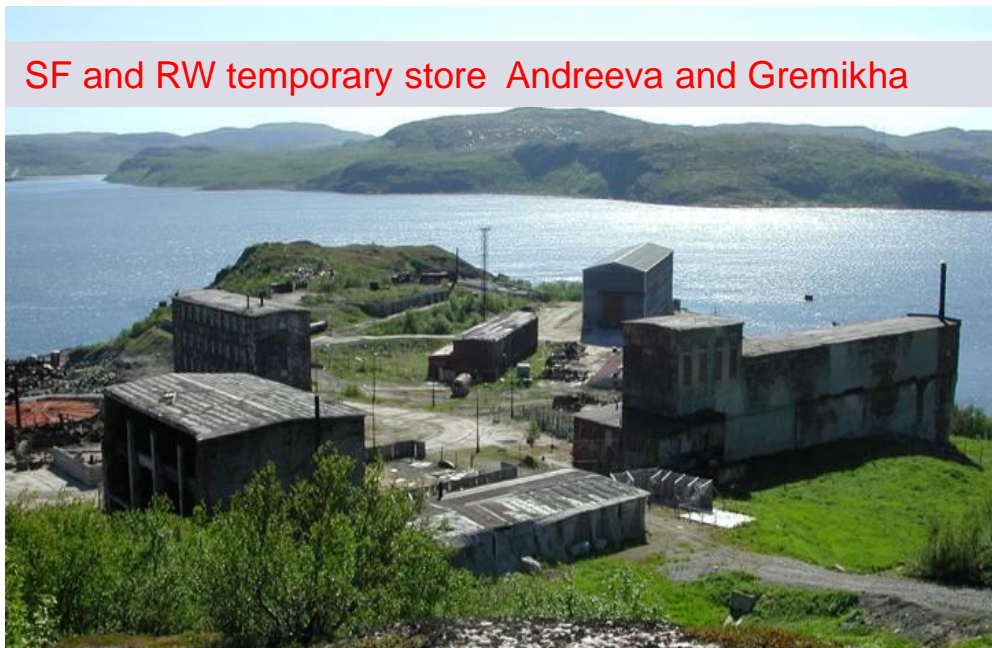
Authorities in Central Asia:

- Kazakhstan
- Kyrgyzstan
- Tajikistan
- Uzbekistan



Example Legacies Considered

SF and RW temporary store Andreeva and Gremikha



Decommissioning of RTGs in lighthouses



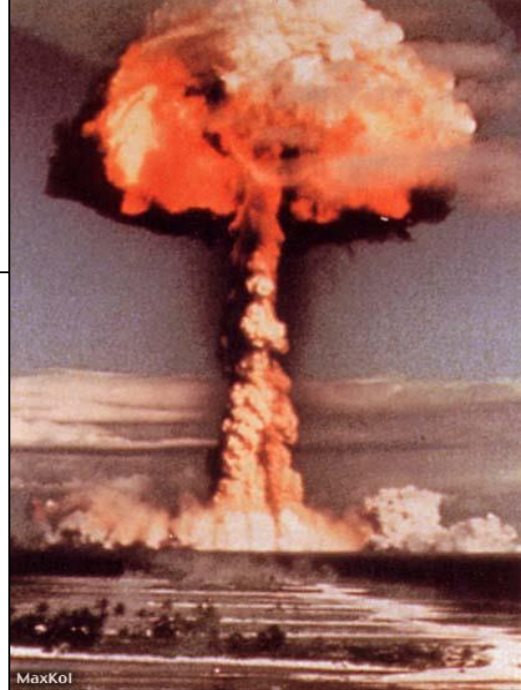
Nuclear submarine dismantling



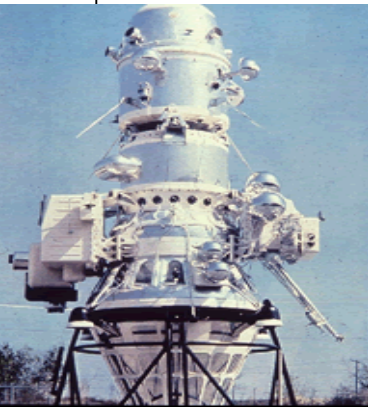
Uranium mine and mill tailings

Types of Nuclear Legacy

- Uranium mining and milling facilities
- Nuclear technology development centres
- Nuclear peaceful and weapons testing sites
- Nuclear weapons development centres
- Sites affected by major accidents
- Inadequate storage and disposal sites and facilities



MaxKol





Global Uranium Mining and Milling Waste



Places of Global Nuclear Tests

(UNSCEAR-2000)

Regulatory Support Projects

FMBA

- **Datamap** radioecological mapping of the site
- **Dosemap** radiation situation mapping of workplaces
- **WBM** enhanced internal dose assessment
- **PRM** monitoring performance reliability
- **Training** emergency response training in Andreeva and Gremikha
- **Drive** enhance visualisation for work planning

Rostekhnadzor

regulatory supervision of RTG removal

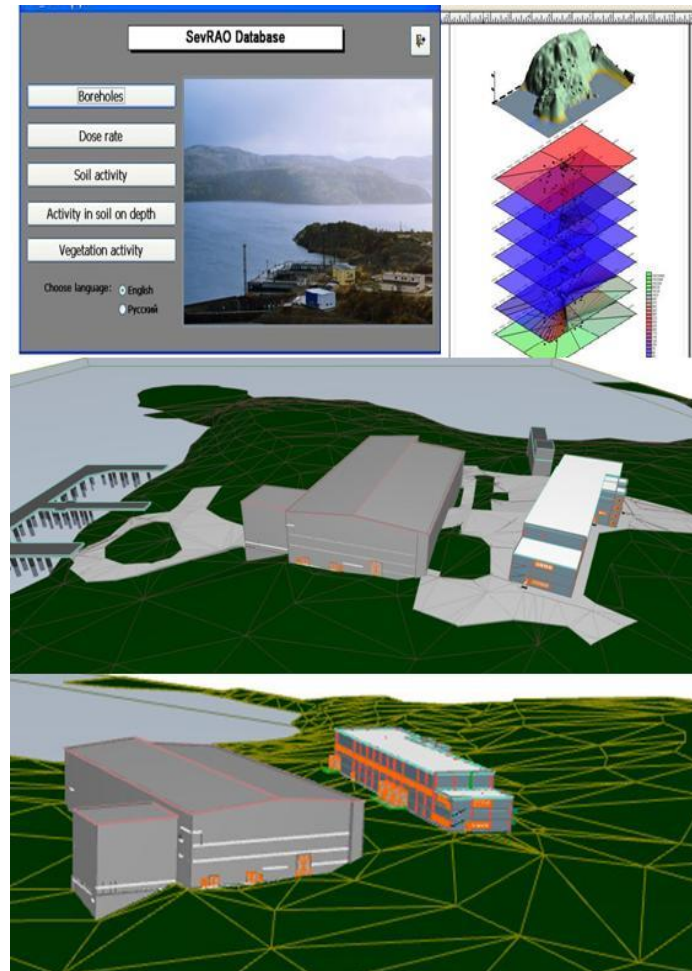
DSS NRS of MoD RF

supervision of safety during the transition from military to civilian control of legacy management

Datamap – Dosemap

- E-map of all radio-ecological data, GIS generation
- Mapping databases on the radiation situation in workshops and on individual doses to workers
- Software for visualization and automated data input

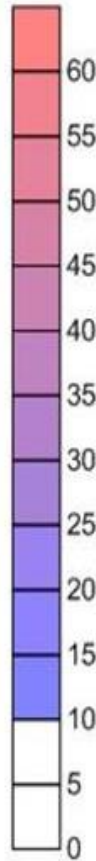
For practical use by SevRAO for activity/work planning and dose control and optimization!



Radiation Situation at Andreeva Bay (Datamap)



2002



2010

Managing the Nuclear Legacy

- A global issue being addressed through **international cooperation**
- Legacy management requires a **responsible approach** to environmental and human health protection, avoiding short term measures which create new legacies
- Significant part of legacy management is **radiation protection and nuclear safety**
- Strong independent regulatory supervision is crucial to delivery of **safety and confidence** in the whole process
- Western support needs to include a proportionate level of support to regulators, not just operators

Key Challenges for Regulators

- Experience from Northwest Russia and Central Asia

➤ **Optimization:**

Major feature of radiation protection, but includes economic and social factors. How to include them in its decision making process!

➤ **Balancing short and long term risks:**

to different groups of people on different spatial and temporal scales!

➤ **Uncertainties in risk and environmental assessments:**

Radioactive source terms, radionuclide migration, human behaviour, environmental change, other pollution risks!

➤ **Information exchange during emergencies**

➤ **Regulatory decision making:**

Development of consistent protection objectives and regulatory approaches for radioactive and other contaminants, for humans, environment and in special areas e.g. groundwater protection!

Russian and Norwegian Regulatory Coordination Group

To provide a forum for discussion of:

- developing regulatory framework in Russia:
 - areas of responsibility of each authority for different types of legacy, over different nuclear and radiation issues;
 - coordinating input to the process of development of new nuclear and radiation related regulatory requirements, and
 - providing a coordinated interface to other areas of regulation of safety, security, and human health and environmental protection.
- cross-cutting issues arising at specific legacy sites, and provide input to the broader strategic development of regulatory supervision.
- developing international recommendations and guidance, including interface with the IAEA's International Working Forum for Regulatory Supervision of Legacy Sites (RSLS)

<http://www-ns.iaea.org/projects/rsls>



Thank you for your attention!

Questions?

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