Technical Meeting for the International Working Forum on Regulatory Supervision of Legacy Sites, with initial focus on International and Regional Initiatives to Remediate Contaminated Sites in Central Asia
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Regulatory Framework for Managing Uranium Legacy Sites in Russian Federation

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Content

- Legislative Framework
- Licensing Procedure
- Supervision and Enforcement
- Review and Assessment
- Regulatory Challenges
Uranium Legacy Sites

There are several uranium production sites required remediation actions in the Russia:

- Decommissioned:
  - PO “Almaz” (Lermontov, KMV),
  - RU Novotroitskoe (Baley, Chita Reg.),
  - RU Stepnoe (Kalmykia Rep.),
  - pilot industrial test sites (Aldan, Yakutia).

- Operating: PPGHO, MSZ, CMZ, RU Malyshevs etc.
Uranium Legacy Sites

The following objects of PO “Almaz” uranium mining site are required remediation actions:

- **Mines 1 (Beshtau - 27 dumps, 2115 thous.m$^3$) and 2 (Byk – 12 dumps, 1800 thous.m$^3$);**

- **Tailing ponds (6 ponds - 1258 thous.m$^2$, 1 – decommissioned, 2 – under decommissioning);**

- **Buildings of hydrometallurgical plant (processing).**
Legislative Framework

Constitution

International Agreements
Federal Laws

Decrees of the President
Decrees of the Government

Technical Regulations

Federal Regulations in the
Field of Atomic Energy Use

Administrative Regulations

Guiding Documents

Safety Guides

National Standards, Local Standards,
Sets of Rules

Legal Acts (regulatory acts of the Russian Federation)

Regulatory documents

Voluntary documents


Federal Law “On the Radiation Safety of the Public” (№ 3-FZ of 09.01.1996)

Federal Law “On the Special Ecological Programs for Rehabilitation of Territories Contaminated with Radionuclides” (№ 92-FZ of 10.07.2001)

some others.
Legislative Framework

The following Federal Laws are under development:

Federal Law “On Radioactive Waste Management” (final draft)

Federal Law “On Decommissioning of Nuclear Facilities”

some others.
The Federal Law “On the Use of Nuclear Energy” established that:

- State regulatory authorities are responsible for regulation of nuclear, radiation, industrial and fire safety, independent from others (art. 24)

- State safety regulation includes: regulations development, licensing, supervision, review (art. 23)

- Defines the power of state regulatory authorities (enforcement, art. 25)
There are five Regulatory Authorities in the field of nuclear energy use in Russia:

- **Ministry of Natural Resources**
- **Rostechnadzor** (licensing, supervision, regulations development – technical aspects)
- **Federal Medical-Biological Agency** (supervision, regulations development – san.-hygienic aspects)
- **Rospotrebnadzor**
- **Ministry of Emergency Situations**
Regulatory Authorities (2/3)

According to the Decree of the RF President No780 dated 23.06.2010:

- Rostechnadzor is reported to the RF Government (prior - Ministry of Natural Resources)

- Rostechnadzor is responsible for development and implementation of the state policy and regulations in the field of nuclear energy use
The Governmental Order No 717 dated 13.09.2010 introduce the changes in to power of Rostechnadzor:

- Develop and implement of the state policy and regulations in the field of nuclear energy use
- Develop and approve the federal level regulations
- Establish the permissible limits for release and discharge of radionuclides to the environment
Legislative Framework

Some federal level regulations related to the site remediation issues:

- Radiation Safety Rules (NRB-99/2009)
- Sanitary Rules for Liquidation, Mothballing and Re-orientation of Radioactive Ores Mining and Milling Facilities (SP LKP-91) – under revision
- Transportation of Radioactive Materials. Safety Requirements (NP-053-04)
Legislative Framework
Legislative Framework

The safety guides under development are following:

- “Safety Assurance during Remediation of Uranium Mining and Milling Sites” (1)
- “Decommissioning (Closure) of Tailing Ponds” (2)
Legislative Framework

“Safety Assurance during Remediation of Uranium Mining and Milling Sites” is developing taking into consideration:

- **WS-G-3.1 Remediation Process for Areas Affected by Past Activities and Accidents, 2007**
- **WS-G-5.1 Release of Sites from Regulatory Control on Termination of Practices, 2006**
- **WS-G-1.2 Management of Radioactive Waste from the Mining and Milling of Ores, 2005**
It is proposed the following contents of the Safety Guide:

- **Objective and Scope**
- **Planning and Execution of Remediation**
- **Radiation Protection during Remediation**
- **Waste Management**
- **Radiation Monitoring of Environment**
- **Post-Remediation Management**
The Safety Guide “Decommissioning (Closure) of Tailing Ponds” has the following contents:

- **Objective and Scope**
- **General Provisions**
- **Safety Assurance at Pre-closure Stage**
- **Safety Assurance During Closure**
- **Monitoring of the Closed Tailings**
- **Contents of the Safety Justification Report**
The Administrative Regulation established the order of performance the state function on licensing the activities in nuclear energy use – proposed to add subsection on rehabilitation contaminated sites:

- Safety Justification Report
- Rehabilitation Program
- Radiation Protection Program
- Radiation Monitoring Program
- Quality Assurance Program
- Emergency Response Plan
- Physical Protection, Accounting and Control
- Confirmation of Possibility to Store/Dispose of RadWaste

- Stipulates that licensing of activities in the field of nuclear energy use shall be carried out by the Rostechnadzor.

- Defines the licensing procedure.

- Defines the list of activities in the field of nuclear energy use that require a license.
The activities in the field of nuclear energy use includes:

- Siting, construction, operation and decommissioning of nuclear installations, radiation sources and storage facilities.

- Handling of radioactive substances and nuclear materials (mining, fabrication, use, processing, transportation, and storage).

- Radioactive waste management (storage, treatment, transportation, and disposal).
Licensing Procedure

- Use of nuclear material and/or radioactive substances in R & D.

- Design of nuclear installations, radioactive sources, and storage facilities.

- Design and manufacture of equipment for nuclear installations, radioactive sources, and storage facilities.

- Review of design and safety documentation.
Licensing Procedure

Executive Order № 865 stipulates that licensing procedure shall incorporate the following steps:

- Preliminary review and check of the documents submitted by the applicant.
- Review of the safety related documentations submitted to the Rostechnadzor.
- Carry out an on-site inspection to verify the data contained in the submitted documents and possibility of applicant to perform the activity.
Licensing Procedure

- Making the decision regarding whether or not to issue a license.

- Issue a license with obligatory conditions enclosed.

- Change of the license conditions in case of reconstruction (modification) of the nuclear installation or significant change the conditions of nuclear activity performed.

- Suspend or terminate the license in case of serious violations of the legislation, nuclear regulations or license conditions.
Licensing Procedure

- Issue a license can be denied in the following cases:
  - when false or distorted information are found in the submitted documents;
  - negative expert review conclusions;
  - when declared activity are not in compliance with safety requirements.

- Abandonment of licensee or its reorganization leads to termination of the licenses issued.
The Administrative Regulation of Rostechnadzor was approved in October 2008 that established the order of performance the state function on licensing the activities in nuclear energy use.

Delineation of authorities among the Rostechnadzor Headquarters and its regional offices in issuing licenses for various types of activities in the field of nuclear energy use are defined in the Administrative Regulation.
## Licensing Procedure

<table>
<thead>
<tr>
<th>Facility type</th>
<th>Activity type</th>
<th>HQ</th>
<th>Reg.</th>
<th>Max. review time</th>
</tr>
</thead>
<tbody>
<tr>
<td>NI</td>
<td>Siting, construction, operation, decommission</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NI</td>
<td>Unit of NPP</td>
<td>Yes</td>
<td>No</td>
<td>12 Months</td>
</tr>
<tr>
<td>NI</td>
<td>Production reactor</td>
<td>Yes</td>
<td>No</td>
<td>12 Months</td>
</tr>
<tr>
<td>NI</td>
<td>Research reactor, critical facility</td>
<td>Yes</td>
<td>No</td>
<td>10 Months</td>
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<tr>
<td>NI</td>
<td>Subcritical facility</td>
<td>No</td>
<td>Yes</td>
<td>6 Months</td>
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<tr>
<td>NI</td>
<td>Nuclear facilities for mining, use, processing, fabrication of nucl. mat.</td>
<td>Yes</td>
<td>No</td>
<td>12 Months</td>
</tr>
</tbody>
</table>
Licensing Procedure

- The guiding document of Rostechnadzor was approved and put into force since August 1, 2008 – “Methodical instructions on developing the license conditions for activities in the field of nuclear energy use” (RD-03-31-2008).

- RD-03-31-2008 defines the general approach to developing the license conditions for activities in the field of nuclear energy use.

- Provisions of RD-03-31-2008 are obligatory for Rostechnadzor’s staff (HQ, regional) involving in licensing.
License conditions have the following three sections:

- “Scope of license” – type of activity/facility, specific nuclear or radioactive materials involved, etc.;
- “General requirements and conditions” – personnel, documentation, general safety requirements, etc.;
- “Specific requirements and conditions” – transition from one stage of work to another, specific safety requirements, etc.

If necessary, Rostechnadzor can define the justified time of fulfilment the requirements or conditions.
Executive Order № 865 stipulates that:

- **Rostechnadzor** shall carry out an on-site inspection to verify the data contained in the submitted documents and possibility of applicant to perform the activity.

- **Supervision of the licensee by carrying out the periodical inspections in order to ascertain compliance with the license conditions.**
Supervision and Enforcement

State supervision for safety in the field of nuclear energy use is carried out by the Rostechnadzor HQ and its regional offices and includes:

- receiving and analysis of information related to the safety provision by operators and organizations that perform work and provide services;

- carrying out of inspections and analysis of its results;

- enforcement by imposing a penalties established by the legislation of the Russian Federation in case of violation the safety requirements.
Supervision and Enforcement

Lermontov, 2007 - 

- JSC Dalur, 2010
Supervision and inspection activities of the Rostechnadzor are defined by the following main guiding documents:

- “Provision regarding the procedure for state safety supervision in the field of nuclear energy use” (RD-03-43-98);
- “Procedure for nuclear and radiation safety supervision of a nuclear fuel cycle facilities” (RD-05-19-99);
Supervision and Enforcement

- **RD-03-43-98** defines the main principles of state supervision for nuclear activities:

  - Rostechnadzor independence;
  - delineation of responsibilities;
  - openness of state supervision;
  - exclusion of undue restrictions;
  - coordination with other regulatory bodies;
  - differential approach to the scope and type depending on potential hazard, safety achieved.
Inspection Procedure

■ All inspections shall include the following stages:

➢ preparation to the inspection;
➢ arrangement and carry out of inspection;
➢ recording/reporting the results;
➢ control of prescriptions issued.

■ Duration of all type inspection should not exceed 20 calendar days.
Inspection Procedure

- **Working program of inspection shall includes:**
  - goals, list of questions concerned, information to be prepared by licensee.

- **Plan of inspection shall includes:**
  - dates of inspection, meetings, discussions;
  - names of inspectors and questions for them.
Inspection Procedure

While inspecting the inspectors shall arrange and carry out the following actions:

- meeting with the organization management;
- review of documentation (technical, administrative);
- visit a working premises, review a practice and safety measures;
- discussion with personnel on operational and safety issues;
- preparation of inspection report;
- discussion of the results with organization management.
Post-Inspection Measures

- The control shall be established for fulfilment of prescriptions issued:
  - receipt and review the information on prescriptions fulfilment (in due time);
  - check of prescriptions fulfilment during future or specially arranged inspections.

- All acts/prescriptions shall be recorded and stored at HQ or Regional offices.

- An appropriate sanctions can be applied if the prescriptions are not fulfilled in due time.
Rostechnadzor can apply different types of enforcement to the licensee and its officials:

- oral/written notification;
- written prescription;
- disqualification;
- administrative penalty/fine;
- temporary stop the operation/activity;
- temporary stop of the license;
- revoke of the license (permission).
Enforcement

The main principles of applying sanctions to the licensee and its officials:

- applying to the entities and officials responsible for safety provision;
- applying a sanction shall correspond to the significance of violation with respect to its influence to the safety;
- openness of sanction applying;
- not applying sanctions to the personnel, but to the management in charge;
- applying sanction to the operator does not exclude the penalty for service organizations.
According to Executive Order 865 the expert review of safety related documentation shall be performed every time when license is issuing or changes of license conditions are introducing.

The order of expert review performance is established by the Administrative Regulation:

- preparation of a Statement of Work;
- review of the safety related documentation;
- meetings with the applicant;
- development of the expert review report.
Review and Assessment
Review and Assessment

According to NP-058-04 requirements the safety assessment shall be performed for radioactive waste storage/disposal facilities.


- **This Guide has been developed on the results of the ISAM Project (IAEA) – Improvement Safety Assessment Methodology.**
Review and Assessment

Scientific and Engineering Center for Nuclear and Radiation Safety (Rostechnadzor) is responsible to carry out the safety assessments during expert review of applicant’s safety related documentation:

- **Tailing ponds of JSC MSZ** – 1 operating and 2 in post-closure stage (up to 10000 years);
- **Contamination of territory of the “Moscow Plant of Polymetals”** with radionuclides (depth 1-15m, $10^6$y);
- **Use the computer code AMBER.**
Regulatory Challenges

- **Improvement of the regulatory basis:**
  - safety criteria/requirements (FMBA/Rostechnadzor);
  - requirements to the content of safety justification documentation;
  - requirements to QA program/safety culture;
  - oversight procedures.

- **Improvement of the safety assessment:**
  - use of verified computer codes (AMBER/Ecolego);
  - personnel training (TSO/RA).
Regulatory Challenges

- **Training of the staff of Regulatory Bodies:**
  - exchange of the oversight experience;
  - training of the regional inspectors.

- **Improvement of cooperation between Regulatory Bodies:**
  - clear distribution of responsibilities;
  - close cooperation in the regulations development, inspections of the sites.
Thank you for your attention!

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