FEDERAL ENVIRONMENTAL, INDUSTRIAL AND NUCLEAR SUPERVISION SERVICE OF RUSSIA

Synergy of National and International Regulatory Efforts to Enhance Global Nuclear Safety

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State Secretary – Deputy Chairman of Rostechnadzor

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Main objectives of safety regulation in atomic energy use

- Establishment and maintenance of conditions for comprehensive protection of the society and state from inadmissible radiation impact;

- Prevention of uncontrolled proliferation and use of nuclear material and radioactive substance.

Bodies for State Safety Regulation in Atomic Energy Use

Federal Environmental, Industrial and Nuclear Supervision Service (Rostechnadzor)

Technical aspects of nuclear and radiation safety and security

Ministry of the Russian Federation for Civil Defense, Emergencies and Elimination of Natural Disaster Consequences (EMERCOM of Russia)

Fire protection

Federal Medical and Biological Agency (FMBA) (subordinate to Ministry of Health and Social Development of Russia)

Safety of personnel

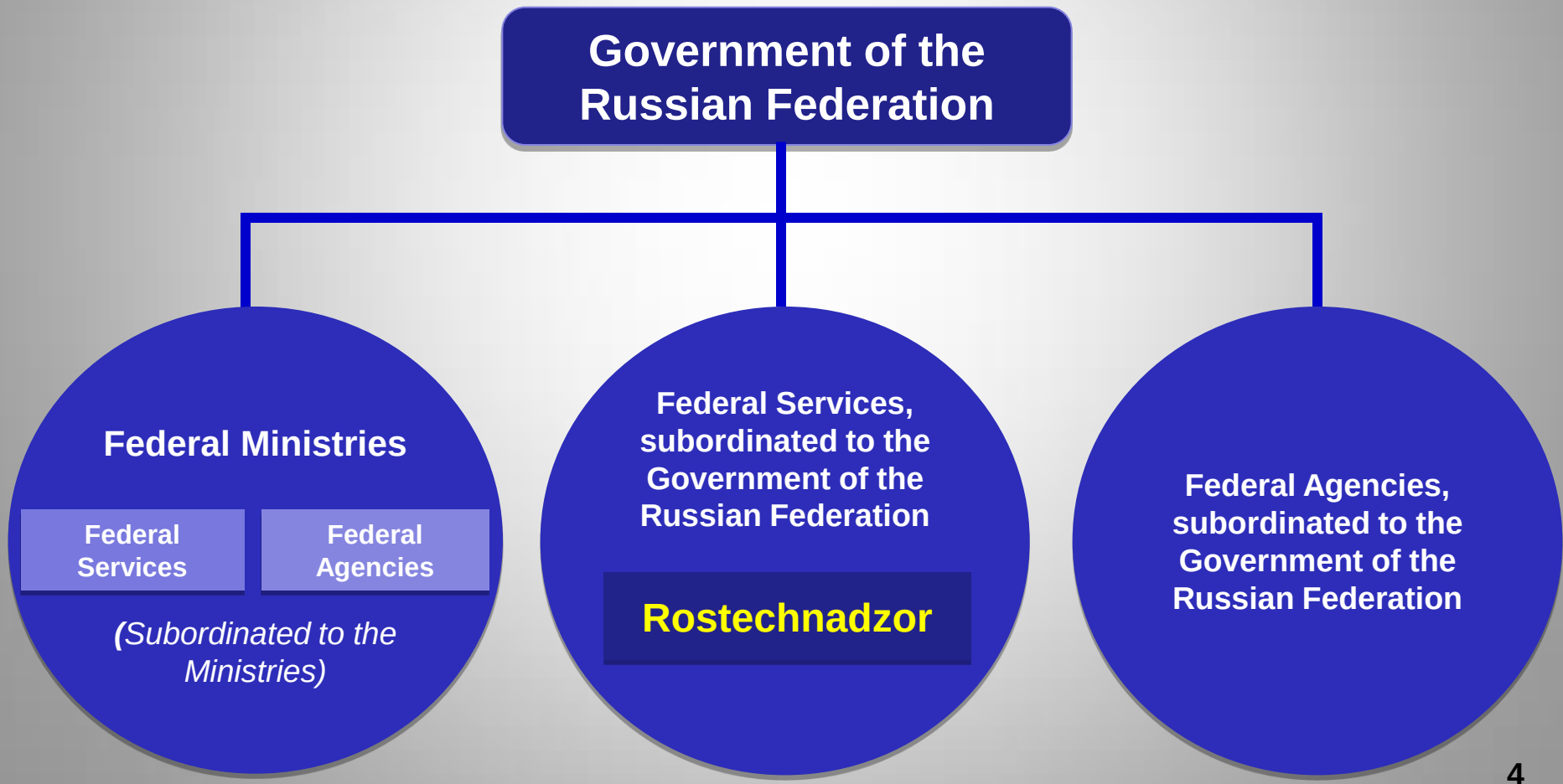
Ministry of Natural Resources and Environment of the Russian Federation and Federal Service for Supervision of Natural Resources (subordinated to the Ministry)

Environmental aspects

Federal Service for Supervision in the Sphere of Protection of Consumers Rights and Social Welfare (Rospotrebnadzor)

Safety of population

Structure of the executive authorities in the Russian Federation



Federal Environmental, Industrial and Nuclear Supervision Service of Russia

Deputy Chairman

- **Department for Nuclear Plants and Research Nuclear Installations**
- **Department for NFC Facilities, Nuclear Power Installations of Vessels and Radiation Hazardous Facilities**
- **Department for Special Safety**

INTERREGIONAL TERRITORIAL DEPARTMENTS FOR NUCLEAR AND RADIATION SAFETY AND SECURITY SUPERVISION (ITDs)

- **Central ITD**
  - **Inspection office at Bilibino NPP**
- **Volga ITD**
  - **Inspection office at Kalinin NPP**
  - **Inspection office at Balakovo NPP**
- **Urals ITD**
  - **Inspection office at Beloyarsk NPP**
- **North European ITD**
  - **Inspection Office at Kursk NPP**
  - **Inspection Office at Leningrad NPP**
  - **Inspection Office at Leningrad Phase II**
  - **Inspection Office at Baltic NPP**
  - **Inspection Office at Smolensk NPP**
- **Don ITD**
  - **Inspection Office at Kola NPP**
  - **Inspection Office at Rostov NPP**
  - **Inspection Office at Novovoronezh NPP**
  - **Inspection Office at Novovoronezh Phase II**
- **ITDs for Siberia and Far East**

33 operating NPP units
4 NPP units under preparation for decommissioning
8 NPP units under construction
904 manufacturing plants
540 facilities and organizations providing activities and services

32 nuclear fuel cycle plants (312 facilities):
15 production reactors, 30 nuclear material processing facilities
12 SNF storage facilities, 44 nuclear material storage facilities
190 solid RW storage facilities, 21 liquid RW storage facilities

75 research nuclear installations;
6,176 radiation-hazardous facilities of national economy

28 nuclear fleet facilities: 10 nuclear ice breakers,
5 nuclear service vessels, 2 nuclear material storage locations
2 RW storage locations
1 floating liquid RW processing plant
1 floating power unit (under construction), 6 prototype benches

Main Safety Regulatory Functions

- Development and enactment of safety regulations in the use of atomic energy
- Licensing of activities in the use of atomic energy
- Supervision of nuclear and radiation safety of nuclear installations, including supervision of nuclear materials accounting, control and physical protection
- Emergency preparedness and response

Development of safety regulations (national level)

Changes in the national nuclear legislation – Federal Law "On the Use of Atomic Energy":

- **Provision on safety guides which are developed, approved and put into effect by the bodies for state safety regulation in the use of atomic energy**

Improvement of regulatory basis taking account of international safety standards:

Revision of existing regulations :

- **General safety provisions of nuclear plants**
- **Siting of nuclear plants. Basic safety criteria and requirements**
- **Design standards of seismically robust nuclear plants**
- **Accounting of natural and man-induced external impacts**

Development of safety regulations (national level)

Development of new regulations (http://en.gosnadzor.ru/framework/nuclear/):

- "Requirements for emergency power supply systems of nuclear plants", 2012;
- "Requirements for layout and safe operation of lifting cranes of nuclear facilities", 2012;
- "Requirements for quality assurance programs of nuclear facilities", 2012;
- Basic rules of control and accounting of radioactive substances and radioactive waste in an organization", 2012;
- "Basic rules of nuclear material control and accounting", 2012;
- "Sample content of a personnel protection action plan in case of an accident at the nuclear plant", 2012;
- "Rules of layout and operation of reactivity control rod actuators", 2012.

New safety guides under drafting:

- Emergency I&C requirements;
- Recommendations for a regulatory guide for beyond design basis accidents, including severe accidents .

Development of safety regulations (international level)

- **Participation in the IAEA Safety Standards Commission, Safety Standards Committees;**

- **Involvement in the review process of the draft IAEA Safety Standards.**

Licensing of activities in the use of atomic energy (national level)

Changes in the national nuclear legislation – Federal Law "On the Use of Atomic Energy":

- **Unified licensing system in the field of the use of atomic energy**
- **Types of activities subject to licensing**
- **Organization and conduct of safety review by a regulator**
- **Periodic safety review (once per ten years)**

New "Provisions for Licensing in the Field of the Use of Atomic Energy";

"Policy Statement on Application of Probabilistic Safety Analysis And Risk Informed Methods For Nuclear Plants".

Licensing of activities in the use of atomic energy (international level)

- **Generic Reactor Safety Review by IAEA:**
  - **AES-2006 – completed in 2013**
  - **VVER-TOI – to be completed in July 2014**
- **Participation in Multinational Design Evaluation Programme (MDEP): PG, STC, issue specific WGs; creation of VVER Working Group in 2013 (chaired by Rostechnadzor)**

Supervision of nuclear and radiation safety of nuclear installations (national level)

- **Changes in the national nuclear legislation – Federal Law "On the Use of Atomic Energy":**

  New Article "Federal State Supervision in the Field of the Use of Atomic Energy" (frequency, duration of inspections, regime of the permanent state supervision at certain nuclear facilities)

- **Russian Government's resolution approved the "Provisions for the Regime of Permanent State Supervision at Nuclear Facilities". The list of facilities subject to the permanent supervision was approved.**
- **The above provides for the permanent stay of authorized officials of Rostechnadzor at the facilities and for conduct of safety supervision measures by these officials**
- **More than 9,000 inspections were conducted in frame of the permanent supervision regime at the facilities**

Supervision of nuclear and radiation safety of nuclear installations (international level)

- Join inspections of nuclear installations with French and Finnish regulators;

- “In field” exchange of practical experience contributes to improvement of national inspection activities.

Emergency preparedness and response (national level)

To improve effectiveness of Information-Analytical Center (IAC), the following was carried out in 2013:

- **modernization of IAC rooms, equipment and communications channels;**
- **installation of new software (domestic and imported) at IAC;**
- **development of high-speed computer codes for express assessments during exercises involving an accident release and spread of radionuclides in field;**
- **Rostechnadzor methodology of estimating the efficiency of Rosenergoatom emergency response exercise is implemented.**

Regular joint exercises with the Operator and TSO at Rostechnadzor's Information-Analytical Center (IAC)

Emergency preparedness and response (international level)

- Russian Federation is a Party to the Convention on Early Notification of a Nuclear Accident and the Convention on Assistance in Case of a Nuclear Accident or Radiological Emergency;
- WANO's Regional Crisis Center for plants with VVERs was set up at the Crisis Center of Rosenergoatom;
- Joint emergency exercises with the ASN;
- Participation to the IAEA Response and Assistance Network.

IAEA IRRS Missions – the instrument of peer review of the competence and effectiveness of national regulatory activities

IAEA IRRS Mission (November 16-27, 2009)

- The objective of IRRS mission was to assess the safety regulatory system for nuclear installations, research reactors, radioactive waste management systems, fuel cycle facilities, industrial and medical sources, relevant types of activities, and efficiency of Rostechnadzor regulatory functions.
- As a result, the IRRS experts noted 5 examples of good practices and issued 25 recommendations and 34 suggestions in areas that need further improvement.
- Based on IRRS results, IAEA issued report IAEA-NS-IRRS-2009/02.
- Rostechnadzor developed and fulfiled an action plan on implementation of IRRS recommendations and suggestions.

IAEA IRRS follow-up Mission (November 11-19, 2013)

- held on 11-19 November 2013 upon request of the Government of the Russian Federation;

- IRRS follow-up mission objective: the assessment of Rostechnadzor's implementation of recommendations and suggestions made by the 2009 IRRS mission and the assessment of 2 areas not covered by the 2009 mission (emergency preparedness and post-Fukushima measures).

IAEA IRRS follow-up Mission (November 11-19, 2013)

IAEA IRRS follow-up Mission (November 11-19, 2013)

- Following the results of the follow-up mission, the IRRS expert team pointed out that 10 of 25 recommendations resulted from the 2009 IRRS mission were completed, 8 – were closed based on assurance that the goal will be reached, and 7 remained outstanding
- 15 of 34 suggestions were completed, 7 were closed based on assurance that the goal will be reached, 12 remained outstanding
- Following the results of assessment of additional modules uncovered by the 2009 IRRS mission, the IRRS experts gave 2 recommendations and 7 suggestions
- 5 good practices were pointed out

International Cooperation of Rostechnadzor

Bilateral Cooperation

Multilateral Cooperation

The use of the best regulatory practices in order to reach the convergence of regulatory approaches and to strengthen the effectiveness of regulatory activities

International Cooperation of Rostechnadzor (Bilateral)

Mature nuclear countries:

- Experience exchange

Nuclear newcomers:

- Experience transfer

International Cooperation of Rostechnadzor (Multilateral)

- IAEA (GNSSN, RCF, Forum TSO)
- OECD/NEA (CNRA and MDEP)
- VVER Regulators' Forum

International Atomic Energy Agency

Implementation of IAEA Action Plan on Nuclear Safety in Russia

International organizations

IAEA Secretariat

IAEA Action Plan on Nuclear Safety

Main goal –
enhancing global nuclear safety system

IAEA Member States

1)Development of IAEA Comprehensive Fukushima Report (WG on Safety Assessment)
2)International Experts' Meetings
3)WG on Effectiveness and Transparency (under Convention on Nuclear Safety)

Russia

national level → **Action Program to implement Action Plan** ← international level

Ministry for Foreign Affairs of Russia

Rostechnadzor

State Corporation Rosatom

EMERCOM of Russia

Federal Medical and Biological Agency

Global atomic energy development

Particular attention of public to global nuclear safety

Openness and transparency in regulatory activities