

# **Experience in Supervising Nuclear Material Accounting and Control, and Physical Protection at Facilities: View from Russia**


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- Legislation
  - Operation
  - Inspection
  - Sanctions

# Legislative basis for national regulation of safeguards and security

- *Federal Law on use of nuclear energy:*

assigns federal authorities that manage nuclear facilities to:

- i. operate SSAC at federal level (former MINATOM) and agency's level,
- ii. develop regulations in the areas of use of nuclear energy, incl. the areas of MPC&A, at the federal level,
- iii. Insure nuclear safety, physical protection and security,
- iv. take full responsibility of operating facility when facility management has lost authority to operate or license has been terminated;

# Legislative basis for national regulation of safeguards and security

- *Federal Law on use of nuclear energy:*

assigns a national regulatory body to:

- i. organize development, approve and enforce regulations in the areas of use of nuclear energy, incl. in the areas of MPC&A, at the federal level,
- ii. issue licenses to operate in the areas of use of nuclear energy,
- iii. oversight SSAC and PP operation,
- iv. carry out supervision of safety and security, conduct expertise and inspections,
- v. receive all information necessary to perform it's functions,
- vi. apply sanctions and penalties,
- vii. provide permits to top managers to operate nuclear facilities;

# Legislative basis for national regulation of safeguards and security

- *Federal Law on use of nuclear energy:*

assigns an operator to:

- i. operate nuclear facility safely and securely,
- ii. account and control NM,
- iii. apply and maintain PP system to meet PP objectives and requirements,
- iv. report to federal agencies on MPC&A status and anomalies detected,
- v. provide inspectors with full access to nuclear facilities and all relevant documentation,
- vi. fulfill license conditions,
- vii. qualify facility personnel;

# Objective of MPC&A regulation

- To form conditions through regulation that insure safety and security of population, nature, utility personnel from inadmissible radiation influence and prevention of unauthorized proliferation of use of nuclear materials

# Basic principles

- Independence of regulatory bodies from other federal executive bodies and organizations that deal with use of nuclear energy
- Delimitation of responsibilities of authorities in charge of regulation and management of NM or MPC&A
- Incorporation of regulatory bodies with organizations, executive agencies, competent authorities responsible for safety and security
- Sanctions, penalties can be applied directly to enterprise managers
- Regulatory activities can not limit or prevent from activities of organizations that operate with NM or MPC&A
- Types of activities, responsibilities, power, delimitation of duties are determined in the statutes of regulatory bodies

# Decree of the RF President

9 March 2004 No.314

## Ministry of Industry and Energy

- Federal Nuclear Regulatory Authority
- Federal Technical Regulatory and Metrology Authority
- Federal Technological Oversight Authority
- Federal Atomic Energy Agency
- Federal Agency of Industry
- Federal Agency on Construction
- Federal Agency on Energy



# Authorities

## Ministry of Industry and Energy

- Accomplishment of coordination and control of activities of subordinating organizations
- Legal regulation in the area of use of atomic energy
- Development of draft Laws, Acts and Directives of the RF President and the RF Government
- Approval of federal norms and rules
- Development of state policy in the use of atomic energy
- others

# Authorities

## Federal Nuclear Regulatory Authority

- Accomplishment of oversight and control of safety and security in use of nuclear energy including licensing and special functions in the area
- State supervision on safety, handling nuclear materials, radioactive substances and wastes, functioning state accounting and control systems and physical protection
- Arrangement of expertise of documents for assessing compliance with safety and security criteria
- Issue permissions for operators to work at nuclear sites
- Operation of system of nuclear facilities control in emergencies
- Control on international agreement accomplishment and participation in international cooperation in area of regulation of safety and security
- others

# Authorities

## Federal Atomic Energy Agency

- Provision of the state service and management of federal property in the area of use of atomic energy
- State customer of the state defense order
- Management of the State accounting and control systems
- Ensuring nuclear and radiation safety
- Arrangement of radioactive materials handling
- Coordination of work in designing, constructing, commissioning, operating, and decommissioning nuclear facilities
- Ensuring physical protection
- Signing agreements on transfer NM to use by entities
- Arrangement of nuclear export and import
- others

## ***HIERARCHY OF LEGAL AND REGULATORY DOCUMENTS IN THE AREA OF USE OF ATOMIC ENERGY***

- **Laws**
- **Normative acts, Resolutions, Orders of the President and the Government of the Russian Federation**
- **Federal norms and rules in area of use of an atomic energy**
- **Documents of regulatory authorities, federal executive bodies managing nuclear enterprises, including standards, norm and rules**
- **Documents of operating organizations and nuclear facilities**

## ***List of major documents regulating NMPC&A***

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- **Federal Law on use of atomic energy (*MC&A, PP*);**
- **Federal Law on radiation safety, 1995, (*MC&A, PP*);**
- **Federal Law on branch guards, 1999, (*PP*); ;**
- **Federal Law on protection against terrorism, 1998, (*PP*);**
- **Federal Law on interior forces of the Ministry of Internal Affairs, 1997, (*PP*);**
- **Federal Law on weapon, 1996, (*PP*);**
- **Code of the Russian Federation on the administrative liability, 2001, (*MC&A, PP*);**
- **Federal Law on technical regulation, 2002**

# ***List of major documents regulating NMPC&A***

*(continuation)*

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- **Concept of the State System of Nuclear Material Accounting and Control , October, 1996, (MC&A);**
- **Rules of Creating the State System of Nuclear Material Accounting and Control, July, 1998, (MC&A);**
- **Provisions for the State System of Nuclear Material Accounting and Control, December, 2000, (MC&A);**
- **Main Rules of Accounting and Control of NM (OPUK), 2001, (MC&A);**
- **Provisions for Oversight of the State System of Nuclear Material Accounting and Control, July, 2003, (MC&A);**

# ***List of major documents regulating NMPC&A***

*(continuation)*

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- **Provisions of the State system of prevention of nuclear terrorism , 1999, (*MC&A, PP*);**
- **Rules on physical protection of nuclear materials, nuclear installations and storage sites for nuclear materials, 1997, (*PP*);**
- **Main rules on safety during transportation of NM and their physical protection, 1983, (*PP*) ( under revision);**
- **Rules of physical protection of radiation sources, radioactive substances, radioactive wastes and their stores”, 2002 (*PP*);**

# Major Agencies in MPC&A areas

## MC&A

- Ministry of Industry and Energy
- Ministry of Defense
- Ministry of Transportation and communication
- Ministry of Education and Science
- Ministry of Economic Development and Trade
- RAS
- Kurchatov Institute
- JNRI

## PP

- Ministry of Industry and Energy
- Ministry of Defense
- Interior Ministry
- FSB



# Principles of MPC&A inspections

- verify MPC&A objectives
- meet MPC&A inspection objectives
- To detect anomalies, deficiencies in MPC&A systems that may lead to thefts, losses, accumulation of NM excess, illicit trafficking,
- To cooperate with facility management and not to interfere with production processes

# MPC&A objectives

## MC&A objectives

- Prevention of NM losses, unauthorized use and thefts
- Providing officials and federal agencies with of relevant information on NM
- Meeting intern. obligation of Russia in non-proliferation

## PP objectives

- Prevention of unauthorized access
- Timely discovery of unauthorized actions
- Delay in intrusion of adversary
- Suppression on unauthorized activities
- Detention of persons related to diversion or theft

# MPC&A Inspection Objectives

- **To check up execution of MPC&A regulations and standards related to safety and security;**
- **To verify fulfillment of licensing conditions;**
- **To check up special conditions connected to deviation from regulatory requirements;**
- **To check up personnel qualification;**
- **NM verification;**
- **NM measurement system and PP equipment functioning verification;**
- **MC&A information system verification;**

# ***TYPES OF INSPECTIONS***

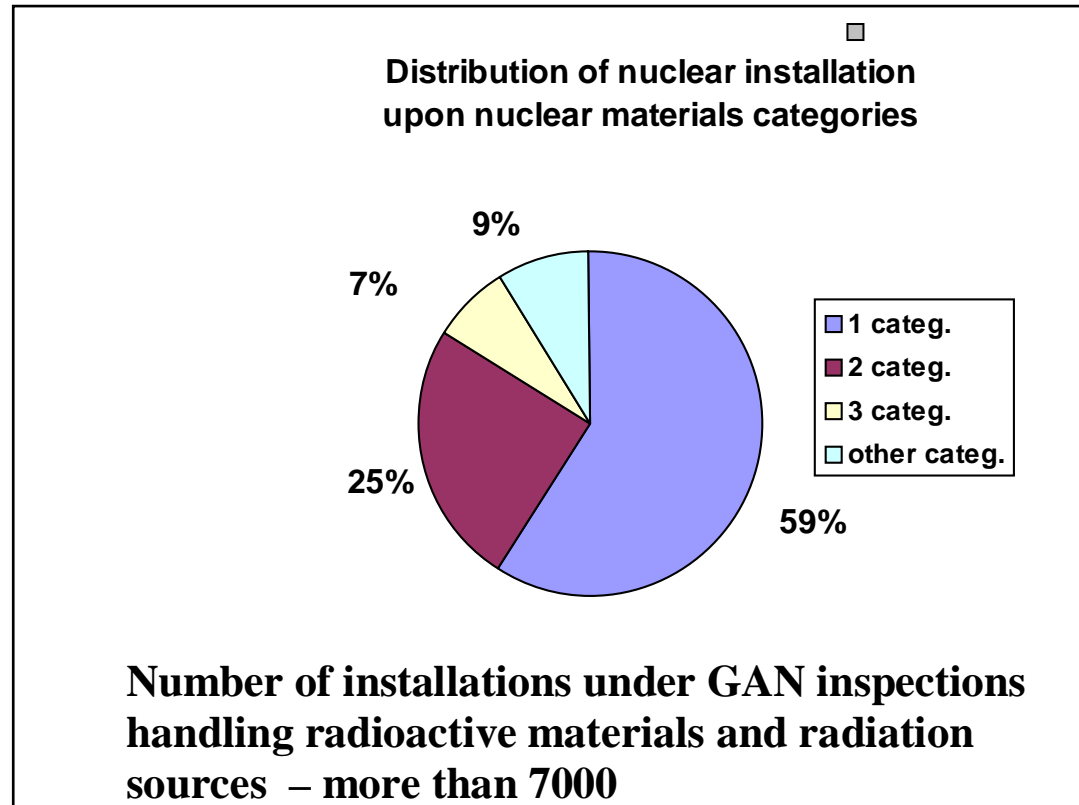
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- **Complex inspections (periodicity - 1 time per three years, duration - about 2 weeks);**
- **Target inspections (periodicity - 1 or 2 times a year, duration - about 2 weeks);**
- **Operative (periodicity - as required, duration - 1-3 days)**

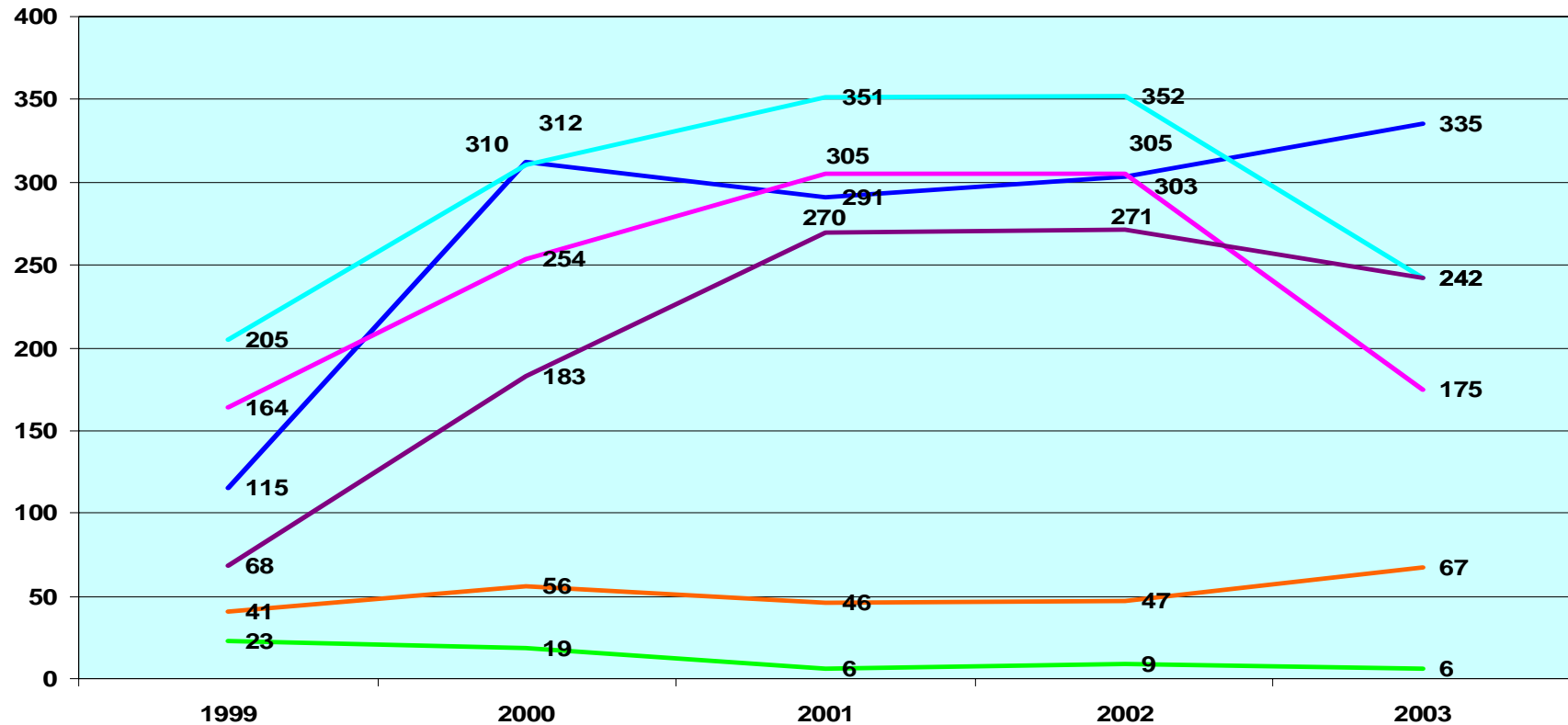
**Number of civilian nuclear sites - 59,**  
**of them subordinating to:**

<i>Minatom of Russia</i>	-	<b>38</b>
<i>Russian Agency for Shipbuilding.</i>	-	<b>4</b>
<i>Ministry of Transportation of Russia</i>	-	<b>6</b>
<i>Other agencies</i>	-	<b>11</b>

**Total number of nuclear facilities - 215**



# Inspection of NM Accountability and Control



**— Nos. of inspections**

**— Nos. of violations of license conditions**

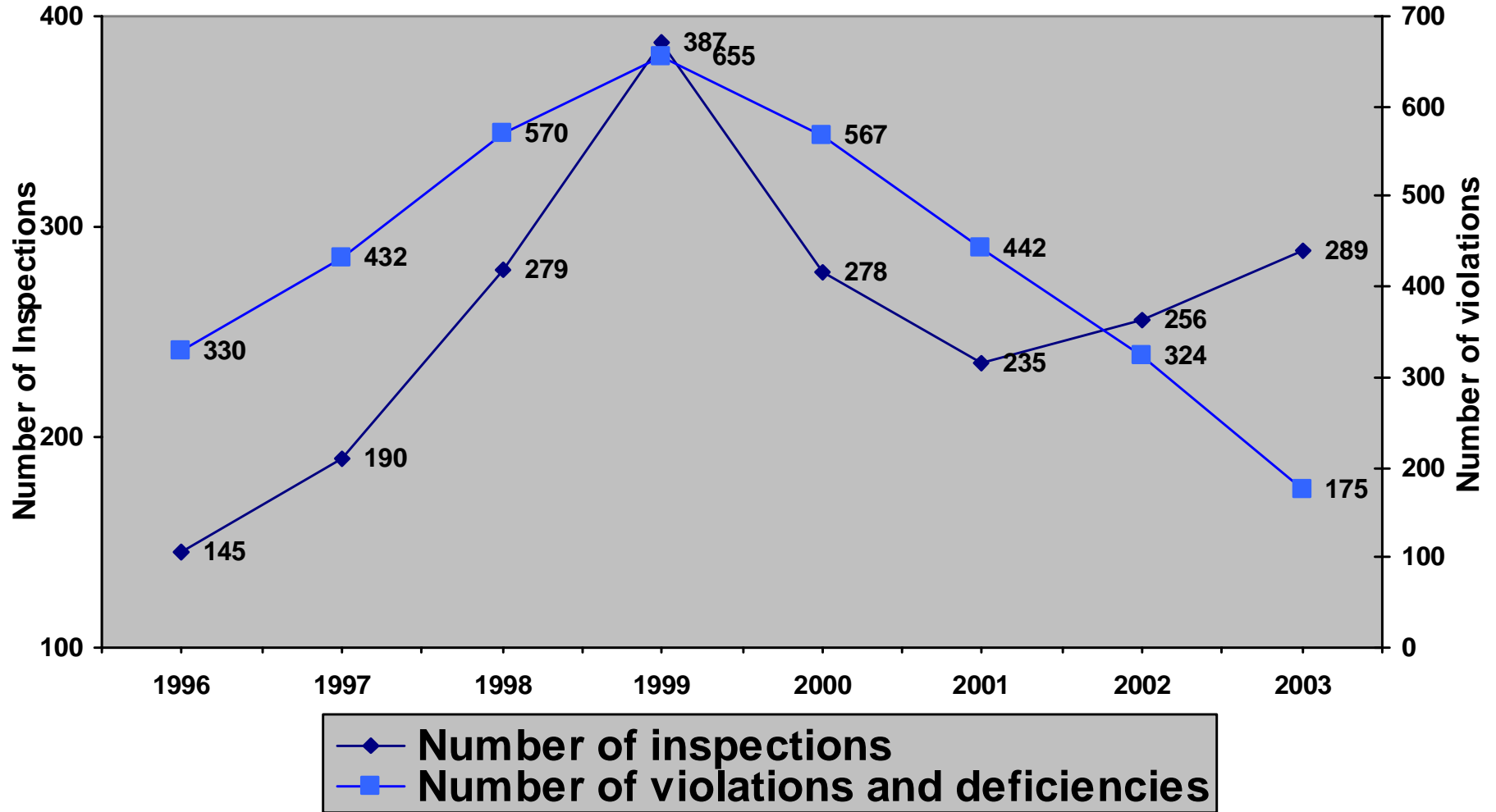
**— Nos. of prescriptions to operators**

**— Nos. of violations of reg. requirements**

**— Nos. of all types of violations**

**— Nos. of violations that were not removed**

# Inspections of Physical Protection



# Sanctions

- Termination of license,
- Shut down nuclear facility,
- Temporary suspension of license,
- Fining operator for violation of regulation,
- Termination of operator from facility operation,
- Submitting documents to the court,
- Submitting request to prosecutor for investigation,
- Prescription to eliminate violations



# Conclusion

- ◆ Inspection is one of assurances of effective MPC&A systems
- ◆ Use of technical means during inspection increases results objectiveness
- ◆ Assessment of MPC&A has to be made by an independent (regulatory) organization
- ◆ International cooperation is vital tool in improving MPC&A