

ANALYSIS OF THE EXISTING CHEMICALS MANAGEMENT SYSTEM IN THE RUSSIAN FEDERATION

THE PROJECT “Awareness raising and CAPACITY BUILDING on
chemicals control in NW RUSSIA”
BACCON Rus 1

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Analysis of the existing situation:

**Part A: Legislation related to classification of hazardous substances and
communication hazard information in supply chain**

**Part B: Environmental legislation related to providing information on
quantities of hazardous substances used or released into
environment**

Part C: Institutional set-up in chemicals management

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A Legislation related to classification of hazardous substances and communication hazard information in supply chain

A.I Introduction

The analysis is elaborated in scope of the project “AWARENESS RAISING AND CAPACITY BUILDING ON CHEMICALS CONTROL IN NW RUSSIA” (so called BACCON Rus), which is a co-operation project between Russia, Nordic Council of Ministers, Sweden & Finland and funded by Finnish Ministry of Environment, Swedish Environmental Protection Agency, Nordic Council of Ministers.

The conclusions presented in this report are expressions of the authors’ opinions and do not necessarily reflect the views of the Nordic Council of Ministers, Finland or Sweden.

The task of analysis is to provide information on existing chemicals management system in Russian Federation and describe the following issues:

1. Hazardous chemicals information from producers to users: standards, requirements, formats
2. Safety requirements during chemicals use: where a company is getting information/knowledge on safety measures to apply during use of chemicals? Are there standards for every branch? How they are updated?

The analysis is based on

- handbook: O.L. Dubovnik. Ecological legislation in questions and answers. Prospect, Moscow 2004; 299 p. /in Russian/
- review of Russian environmental legislation by consultants V.F. Budarin and A.A. Sedova on registration of hazardous substances (“Обзор российского законодательства по опасным веществам и процедуре сбора информации, отчетности по сбросу загрязняющих веществ в водные объекты”);
- Comparative analysis Russian and international law on chemicals safety (substances, chemicals production and mixtures), TACIS project, FGUP “STANDARTINFORM” / previously VNIKI
- Input by Anna Makarova (Moscow, ROSTEHREGULIROVANIJE, FGUP “STANDARTINFORM” / previously VNIKI)
- Information received during project visits to Russia until December 2005.

Before further going into details there is need to be aware of some issues:

- there is no common framework act on handling of hazardous chemicals, although draft act has been elaborated and presented to Government of Russian Federation in the beginning of December 2005 (draft in Russian is available: <http://www.chimcert.ru/file/tr.pdf>; see also Chapter AVIII); implementation of the act is foreseen within 15 years from adoption (considering 4-step approval starting from Government of Russian Federation to the President, date of adoption is unpredictable);
- adoption of Federal Act “On Technical Regulation” shall require revision of current system, e.g. present system is at large extent regulated by national standards (GOST), which should be replaced by technical regulations (TR-s) approved by Government of Russian Federation;
- Russian terminology is differing from the EU one, which may create some confusion, e.g. starting from word “substance”, which in Russia mostly means “chemicals”; next issue is term “hazardous”, which in direct meaning is used rarely, but in most cases term “polluting” is used (this explains why chemical issues are regulated by environmental legislation at large extent).

A.II Legal background on providing information for safe handling of chemicals

Currently the Russian chemicals legislation is in changing process. The framework for this legal development is laid down in strategic document «**The foundations of the state policy for ensuring chemical and biological safety of the Russian Federation for the period up to 2010 and longer terms**», approved by President of Russian Federation V.V. Putin on December 4, 2003. no Pr-2194.

The Foundations determine objectives, fundamental principles, priorities, tasks and measures of state support in ensuring chemical and biological safety of the person, society and the state as well as mechanisms and stages of implementation of the state policy in this field.

According to the Foundations, necessity to increase level of chemical and biological safety is explained by the following factors:

- increasing amount of dangerous facilities, where technological resources are close to the limit or depleted completely;
- presence of toxic industrial waste storages, polluted territories and water areas as a result of industrial activities, including elimination of chemical weapons, as well as natural basins with pathogenic micro organisms alongside with absence in most regions of special enterprises for recovery of dangerous chemical and biological materials;
- decrease in general proficiency level of technical and maintenance personnel, loosening of procedures on physical protection, storage, handling and recovery of dangerous materials at the dangerous facilities;
- lack of compliance with technical specifications and technological regulations in manufacturing of specialized equipment, technical appliances, and rules and conditions, as provided in project and assembly documentation for reconstruction of dangerous facilities;
- intensification of terrorist activity aimed at dangerous facilities;
- increasing probability of ecological disasters related to large-scale usage of environmentally dangerous technologies without providing due chemical and biological safety in industry, agriculture, power sector, transportation and residential/public utility sector;
- ineffective government management and regulation in providing security of population, industrial/social infrastructure and ecological system under conditions of increased threats of technogenic, natural and terrorist nature;
- weakening of state functions of supervision and technical regulation in the sector of securing chemical and biological safety, including privatization process (change of owner) at the dangerous facilities;
- provisions of international treaties and agreements of which the Russian Federation is a part of, in securing chemical and biological safety.

Foundation of the state policy for ensuring chemical and biological safety is based on improving and strengthening of institution of chemical and biological safety, improving functions of the state regulation for the purpose of gradual reduction of various adverse factors affecting chemical and biological safety. Aforementioned tasks may be solved by establishing of state system of ensuring chemical and biological safety of the Russian Federation (as a subsystem of comprehensive state system of early warning and emergency management), providing classification, forecasting, prevention and elimination of chemical and biological threats; management of emergencies resulting from chemical and biological factors.

One of the major tasks in improvement of legislation framework is **harmonization of legislation framework of the Russian Federation in ensuring chemical and biological**

safety with provisions of international law, international treaties and agreements, of which the Russian Federation is a part of, in ensuring chemical and biological safety.

[See full text of the informal translation of Foundation in English in the Appendix]

Up to now, safe handling system of chemical products in Russia is governed by several laws and regulations that determine:

- Approaches to hazard classification of chemical products
- Registration of various types of chemical products
- Rules of communicating hazard information to authorities and population
- Rules related to availability of hazard information (safety labeling and safety data sheets)
- Maximum concentration limit values in environment and health standards
- Limited distribution in the territory of Russian Federation of certain groups of substances and/or basic chemical products

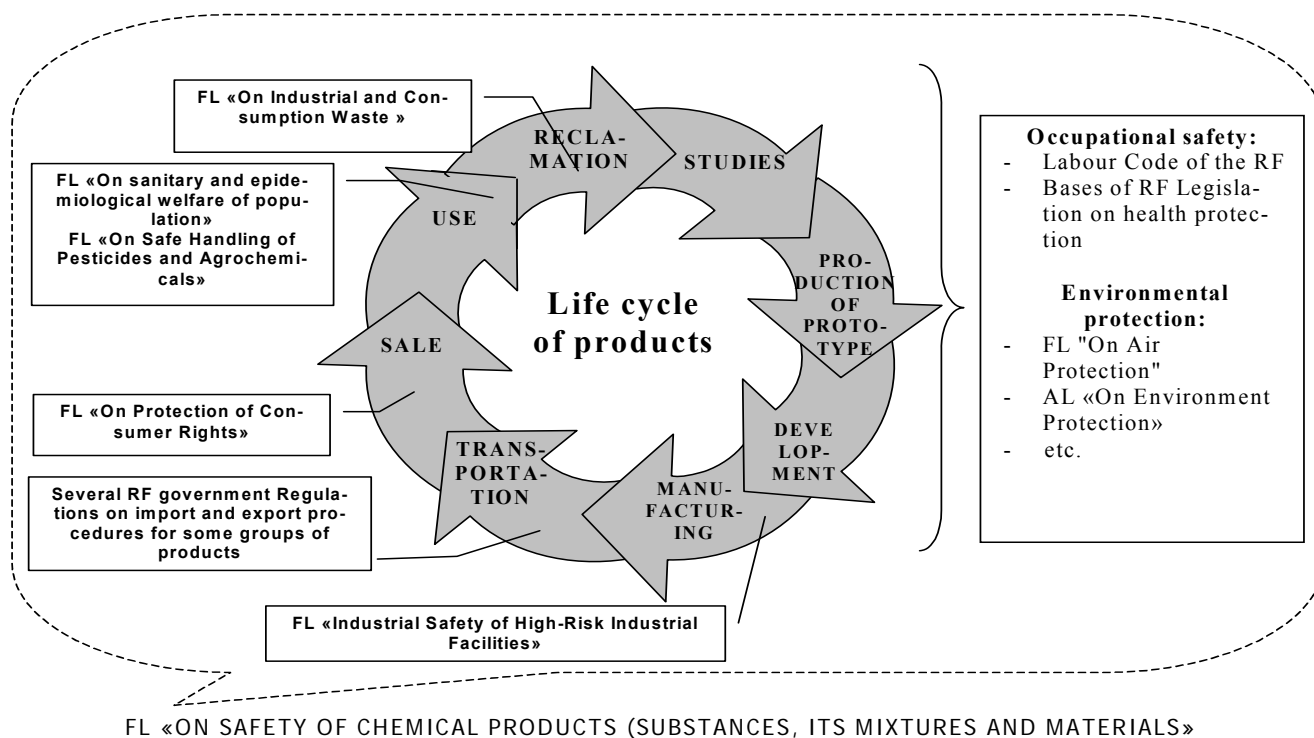
Laws defining the general system are:

- **Federal Law of July 21, 1997 No. 116-FZ «Industrial Safety of High-Risk Industrial Facilities»** is only higher-level legal act dedicated solely to chemical safety issues declaration and appraisal of industrial safety at industrial enterprises handling hazardous chemical substances (manufacturing, storage, use and transportation) starting from certain amounts
- **Federal Law of January 10, 2002 No. 7-FZ «On Environmental Protection»** stipulating protection of environment in manufacturing and use of chemicals as pollutants - limits and regulations of allowable emissions and discharge of chemicals, maximum concentration limit values, environment pollution fee.
- **Federal law of March 30, 1999 No. 52-FZ «On sanitary and epidemiological welfare of population»** deals with state registration of potentially hazardous chemical and biological substances, setting requirements on specific products, radioactive substances, industrial and household waste as well as specific types of products imported in the Russian Federation potentially hazardous for human health.
- **Labour Code of the Russian Federation of December 30, 2001 No 197-FZ** stipulating restrictions on industrial use of hazardous or dangerous substances, materials, products having no developed methods and metrological control procedures, and with respect to which toxicological (sanitary and hygienic, medical biological) tests were not performed; occupational safety rules in using new substances etc.
- **Federal law on protection of consumer rights of February 7, 1992 No. 2300-1** stipulates requirement on safety of consumer goods and services to human life and health, property and natural environment in case of normal handling.
- **Federal Law of July 19, 1997. no. 109-F3 «On Safe Handling of Pesticides and Agrochemicals»**

General legal framework could be presented by Scheme 1. In future all these issues should be covered by a single framework act on chemical safety (being elaborated).

Scheme 1. Framework of Russian legislation on chemical safety (provided by Anna Makarova, FGUP “Standartinform”)

In general, classification of chemicals is accomplished according to Scheme No. 2, i.e. there is no common classification system and criteria in Russia.



In case of dangerous or high-risk industrial facilities classification criteria by hazard categories are following (as set by Federal law of July 21, 1997. no. 116-FZ «Industrial Safety of High-Risk Industrial Facilities»): High-risk industrial facilities are facilities using for production, processing, formation, storage, transportation, removal or any other use of the following hazardous substances:

Flammable gases – gases that become flammable under normal atmospheric pressure and in mixture with air. Boiling temperature at normal atmospheric pressure is 20⁰C or lower;

Oxidizing substances – substances supporting burning, inducing inflammation / promoting inflammation of other substances resulting from redox exothermic reaction;

Flammable substances - liquids, gases, dusts, capable of self-ignition, as well as igniting from a fire source, capable to burn independently after its removal;

Explosive substances – substances, which under certain outside influence are capable of instant self-propagated chemical transformation accompanied with emission of heat and formation of gases;

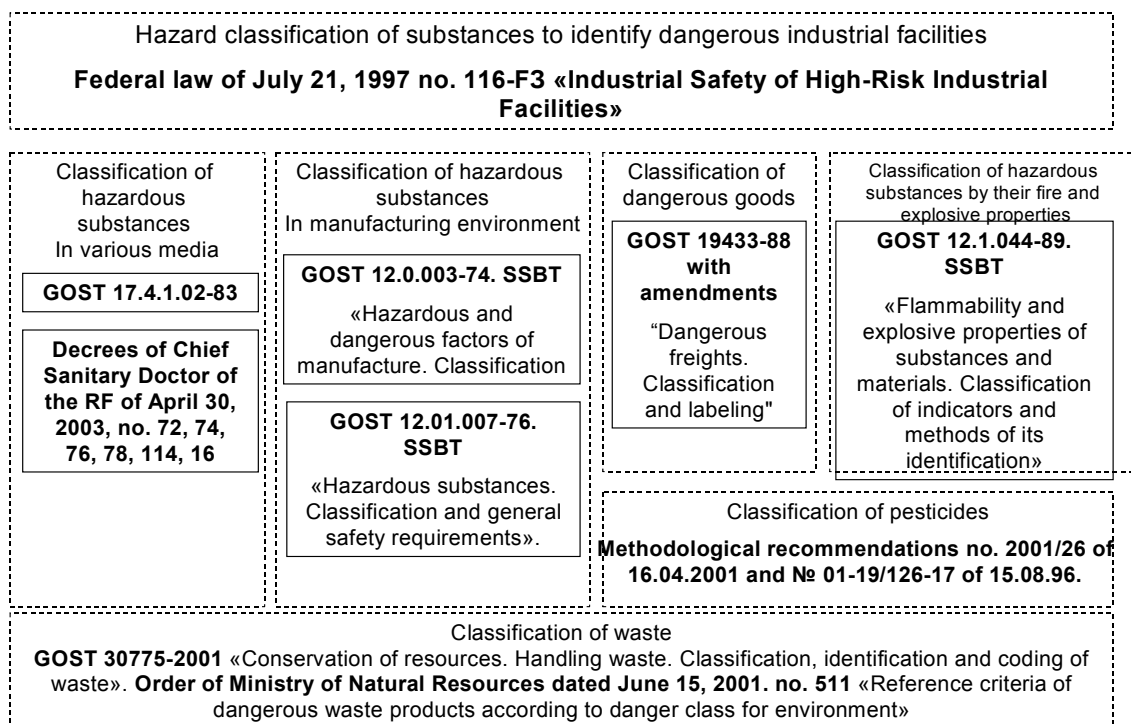
Toxic substances – substances causing death of living organisms and having following characteristics: LD₅₀oral from 15 mg/kg to 200 mg/kg inclusive; LD₅₀skin from 50 mg/kg up to 400 mg/kg inclusive; LC₅₀ inhalation from 0,5 mg/l to 2 mg/l inclusive;

Highly toxic substances – substances causing death of living organisms and having following characteristics: LD₅₀oral max. 15 mg/kg; LD₅₀skin max. 50 mg/kg; LC₅₀inhalation max. 0,5 mg/l;

Substances dangerous for aquatic environment – substances having the following indicators of toxicity in aquatic environment: LC₅₀ max 10 mg/l (fish, 96 h); EC₅₀ max. 10 mg/l (daphnia, 48 h); EC₅₀ max. 10 mg/l (algae, 72 h)

Scheme 2. Classification of dangerous properties of chemicals (provided by Anna Makarova, FGUP “Standartinform”)

CLASSIFICATION OF DANGEROUS PROPERTIES OF CHEMICAL PRODUCTS



In case of toxicological and hygienic assessment according to GOST 12.01.007-76 by public health authorities substances are classified into four categories, mostly considering acute health impacts.

Comparison of different Russian classification criteria with EU and international GHS system is provided in Table for acute toxicity in case of oral administration (provided by Anna Makarova, FGUP “STANDARTINFORM”).

**Table. Comparative toxicity classification of substances by LD₅₀
(rats, mg/kg) when administered orally**

N o	Document, organization	TOXICITY CLASS				
		1	2	3	4	5
1	GOST 12.1.007-76	< 15	15 – 150	151 – 5000	> 5000	-
2	Federal Law no. 116-? ? dated 21.06.97	≤ 15	15 - 200	-	-	-
3	GOST 17.4.1.02-83	<200	200...1000	>1000	-	-
4	Methodological recommendations no. 01- 19/126-17	< 100	100-1000	1001-10000	>10000	-
5	Methodological recommendations no. 2001/26	< 50	51-200	201-1000	>1000	-
6	EC	< 25	25 – 200	201-1000	-	-
7	GHS. In this classification maximum concentration limit values are given for each class	5	50	300	2000	It is expected that substances falling into category 5 have LD ₅₀ 2000- 5000 mg/kg 1]

[1\]](#) Footnote for GHS classification:

Other substance classification criteria for class 5: information on considerable effect on humans, death rate when tested for category 4 under any exposure, considerable clinical signs in category 4, indications in other examinations.

A.III How classification works in Russia?

Classification is performed based on:

- evaluation of hazards of a chemical and assigning danger class for substances and specific types of products, resulting from its possible exposure to human health and environment;
- establishing of health-related and other standards for contents of substances and components of products in environment, including sanitary-epidemiological regulations on certain products, maximum concentration limit values of pollutants in different environmental compartments (air, water, soil), maximum allowed emissions of pollutants;
- elaboration of technical documentation like list of precautionary and protective measures, instructions of safe use, conditions of reclamation, disposal of waste and certain types of products to prevent its adverse effect on human health and environment.

Evaluation of hazards means expert assessment (incl. review of inventory of hazardous components) and laboratory tests both substances and products. Applicant (e.g. importer) provides all technical documents, including certificates, etc. from producer. The scope of tests is dependant on potential hazard class. If the product contains substances of I or II hazard class, also chronic toxicity studies are conducted in addition to chemical-hygienic tests. Common testing principles are enforced through national standards (GOST).

Discussions with Russian experts allowed concluding on following main differences among EU and Russian classification systems for substances are:

- Russian system relies on experts' knowledge to interpret test results in institutions performing evaluation of hazards, no legally binding common classification criteria similar to EU Classification and Labelling Guide exists, i.e. it is possible that the same substance evaluated by different institutions has different hazard classes assigned;
- List of necessary tests depending on type of substance and its danger class is identified only for pesticides, there is no unified approach for testing of other substances.
- Tests performed in hazard assessment are not necessarily following OECD methods.

Considering institutional set up of hazard assessment, it has not been possible to get precise overview which institutions are exactly contributing to the evaluation of substances/products and working out required technical documentation to use a substance/product.

In case of products it seems that use permit is given by combined procedure of assessment and registration by issuing hygienic certificate (but it seems not to be case with substances – see Chapter A.VI. for substance registration).

According to Federal Law of March 30, 1999. No. 52-F3 «On sanitary and epidemiological welfare of population» national registration is mandatory for:

- chemical substances potentially hazardous for human health¹;
- specific types of products posing a potential hazard for human health;
- specific types of products imported in the territory of the Russian Federation for the first time.

The types of products for which registration is obligatory, is further specified by Government Regulation of April 4, 2001 N. 262 “On state registration for specific types of products posing potential threat for human health, as well as specific types of products imported in the territory of Russian Federation for the first time”:

1. Materials, equipment, appliances and other technical facilities for purification of water, intended for use in water supply systems for industrial and household needs
2. Disinfecting, disinsection and deratization chemicals used in household, medical treatment and prophylactic institutions and other facilities to ensure safety and health of people
3. Household chemicals

The exact list of products is specified in the Regulation.

Product assessment-registration system does not have common structure and common practices in Russian Federation. National Public Health Protection Service is responsible for the procedure. Below is given description how product assessment-registration system works in St.Petersburg.

St.Petersburg region as federal subject performs registration of products through their Territorial Unit of Federal service on supervision of consumer rights and public welfare (ROSPOTREBNADZOR). All chemical products must have sanitary-technical assessment of production, use and disposal stage. Based on this assessment, a substructure under Territorial Unit of ROSTEHPOTREBNADZOR issues hygienic certificate for a product.

¹ However it is regarded, that all substances are potentially dangerous, thus all substances on the market have to be registered in this register

There are up to 20 accredited laboratories only in St. Petersburg conducting the tests (trusted by ROSPOTREBNADZOR, also the Service has own laboratory base giving more like “express” assessments and institutes are conducting more in-depth investigations, if required by Territorial unit). Additionally, ca 60 laboratories have accreditation to conduct workplace measurements. Basis for accreditation is ISO 17025 standard. It has been said that GLP principles are in implementation phase and OECD test methods are followed.

Only possibility to avoid testing of the product is to assign hazard category of the most hazardous component, but it also means obligation to implement all safety measures foreseen for this hazard category. According to the discussions with Russian experts, risk based approach is implemented while elaborating testing plan for a product – thoroughness of testing depends on its components – are their properties known and what are their hazards. In toxicological assessment following sequence of actions is used:

- a) Literature search: hygienic norms, data on homologous rows of organic substances, norms of other countries, toxicological parameters, predicted or calculated concentrations
- b) Further assessment necessity depends on purpose of the assessment, i.e. if assessment is done for mixture with known ingredients with known toxicity, and for establishing new purpose of use for a already assessed mixture – no tests are carried out.
- c) If there is suspicion that mixture contains not unknown components or additive / synergetic toxicological effects could be presumed – tests are conducted to obtain data

The stage of testing is relatively simple and takes into account economic feasibility (including amount of product produced): certain limit tests are carried out, e.g. test on integrated toxicity with *daphnia* (measures survival).

Further, if there is suspicion that special health effects can occur (carcinogens, etc.), product has large production volume, etc., further specific test are carried out, e.g. Ames test on mutagenicity, test on carcinogenic properties, etc.

Usually producers choose components for their products so, that expensive testing programmes are not needed.

Assessment of product is based on Technical Conditions (TU) of the product (composed by producer). While setting up testing plan conditions of use are estimated. If release to environment is occurring, also environmental assessment is conducted, but the primary goal of assessment is human health, environmental assessment is more theoretical.

Testing includes studies on certain properties, e.g. for synthetic washing agents tests as stability/biodegradability, foam forming are performed beside toxicological assessment.

A.IV Hazard communication

Currently, specific institutions are responsible for elaboration of technical documents for safe use of substances. It is said that producer or importer can supply its product to professional user only together of this technical documentation.

Professional user must implement technical measures foreseen in technical documentation before starting using the document. Also documentation similar to safety data sheets is used.

Consumers are informed on hazards by product labels in textual forms and instructions for safe use of the consumer product. Detailed requirements for household chemicals are set in

the Resolution of RF Government Nr. 55 (19.01.1998) on „Rules for retail trade of specific types of goods” / Постановление правительства РФ от 19 января 1998г № 55 «Правила продажи отдельных видов товаров».

A.IV.1 Labelling

Uniform requirements for labelling do not exist. Following standards are in use for different product categories:

- ⇒ GOST 19433-88 «Dangerous goods. Classification and marking»;
- ⇒ GOST 14192-96 «Marking of cargoes»;
- ⇒ GOST 9980.4-2002 «Paint material. Marking»;
- ⇒ GOST 1510-84 «Petroleum and petroleum products. Marking, packing, transportation and storage»;
- ⇒ GOST 3885-73 «Reagents and super pure substances. Regulations of acceptance, sampling, packing, marking, transportation and storage»;
- ⇒ GOST 14189-81 «Pesticides. Rules, for acceptance, method of sampling, packing, marking, handling and storage»;
- ⇒ GOST 14839.20-77 «Commercial explosives. Packing, marking, transportation and storage»

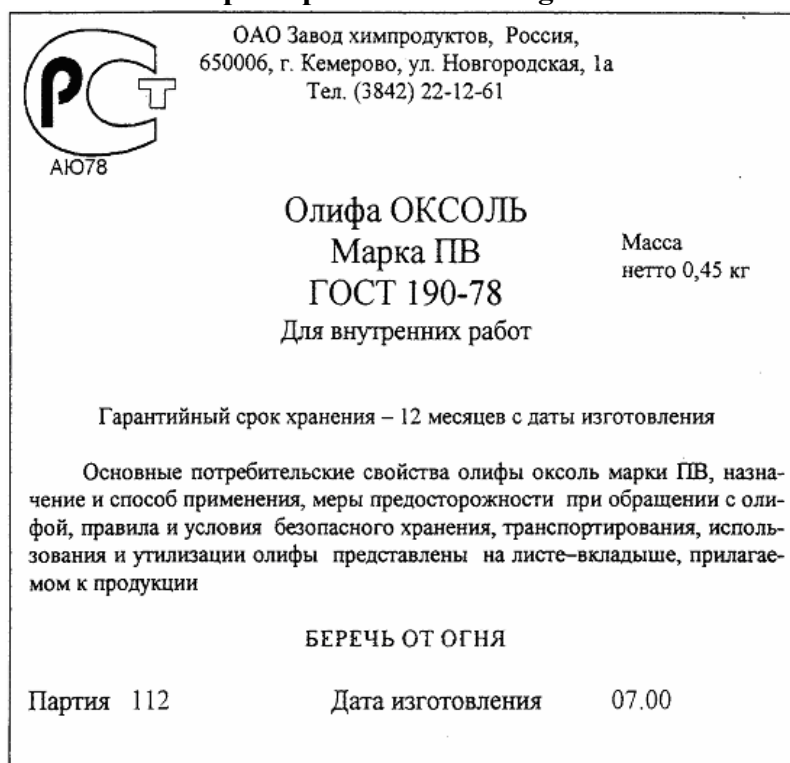
As described in the previous chapter, there are general rules also for retail trade. Example of Russian product label for a paint product according to GOST 9980.4-2002 is given in Scheme 2. In scheme 3 is presented labelling example of transport container for paint and varnish product according to requirements GOST 19433-88 and GOST 14192-96.

According to planned legislation development (see Chapter A.VIII), technical regulations foresee following components of information on hazard label:

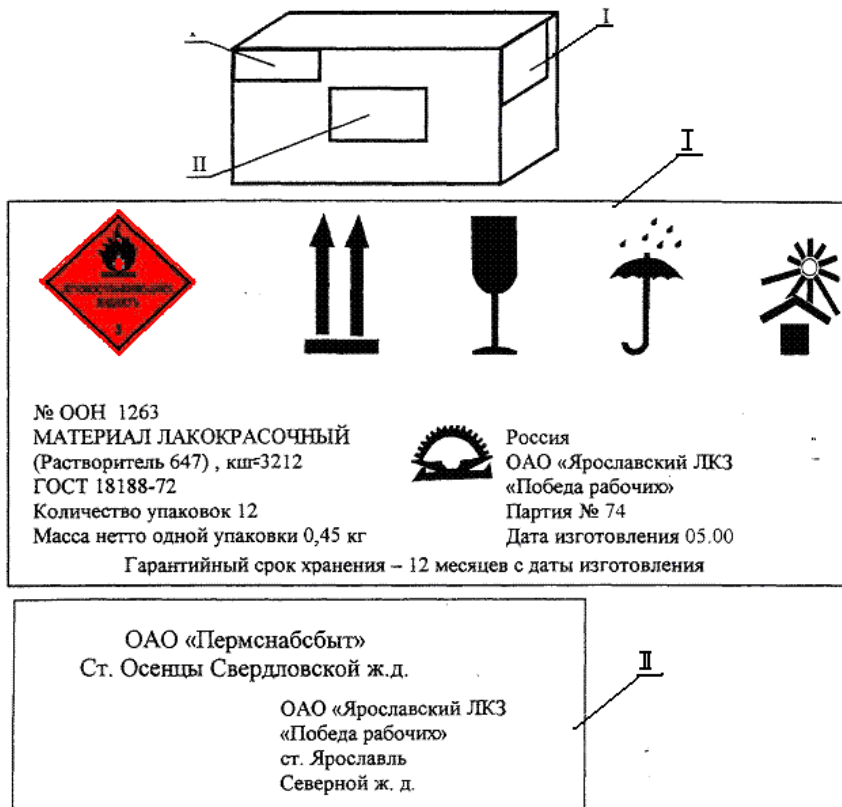
- ⇒ Identification data of chemicals + Data on components;
- ⇒ Data on company (person) – manufacturer and supplier;
- ⇒ The description of danger (symbols/pictograms, signal words, hazard statements);
- ⇒ Precautionary information
- ⇒ Measures of first aid;
- ⇒ Identification number of the batch of a product;
- ⇒ Notification that more detailed information on safe handling of chemical products is contained in safety data sheet.

Currently some producers are using EU product labelling pictograms in parallel with Russian labelling. Also in case of imported products from EU the original labelling is kept together with Russian one, but the outcome may be strongly misleading.

Scheme 2. Label of a paint product according to GOST 9980.4-2002



Scheme 3. Example of transport cartoon labelling for a paint product.



A.IV.2 Safety data sheets

Safety data sheets have been developed in Russia since 1994:

- ⇒ 1994 – in Russian to implement the SDS harmonized with requirements ISO, EC, ILO.
- ⇒ 1995 – Adoption of standard of Common wealth of Independent States on SDS: GOST 30333-95 «Substance (Material) Safety Passport. Basic principles. Information on material safety at manufacturing, utilization, storage, transportation and disposal handling»;
- ⇒ 2003 – starting development the of Special Technical Regulations «Dangerous Chemicals: Information Requirements on Dangerous Properties and Measures on Ensure Safe Circulation»

Safety Data Sheets according to GOST 30333-95 consist of the title page with a stamp and the signature and of 16 sections containing details on dangers of a chemical and on measures providing its safe handling (correspond to requirements ISO 11014.01, exact content is different from current EU system):

1. The name and components of substance or preparation
2. The information on the manufacturer or the supplier
3. Possible hazards and condition of their occurrence
4. Measures of first aid
5. Measures of protection from explosions and fires
6. Rules of the handling and storage
7. Measures on prevention and liquidations of extreme situations
8. Requirements on a labor safety and measures on a safety of user
9. Physical and chemical properties
10. Stability and chemical activity
11. Toxicity
12. Environmental impact
13. Recycling and-or liquidation (removal) of waste
14. Safety requirement at transportation
15. The international and national legislations
16. The additional information

GOST 30333 require that SDS is presented to examination and registration to the Information and Analytical Center «Safety of Substances and Materials». By now more than 13 500 Russian SDS are registered. The legal status of described system and actual use in practise is still unclear - according to received information SDS is not used as a hazard communication tool, but just producer should have it to fulfil legal requirements, and if user want to have it, the SDS is sold to user. It has been told that some SDS are 30-40 pages in length.

Further, while registering a SDS, the Information and Analytical Center may give recommendations to improve the content of SDS, but producer is not obliged to follow them. It has lead to situation that registry contains several totally different SDS for the same product manufactured by different producers.

A.V Registration of substances

In Russian Federation all chemical substances must be registered to be on the market. The registration is required by main legal act in the field of environmental protection - Federal Act of Russian Federation "On Protection of Environment" (10.01.2002, No. 7-FZ):

"§ 47. Requirements of environmental protection in production, handling and disposal of potentially hazardous chemical substances, including radioactive substances, other substances and micro-organisms

1. Production and handling of potentially hazardous chemical substances is allowed on territory of Russian Federation only after conducting necessary toxico-hygienical and toxicological investigations of these substances, establishing handling requirements, norms of environmental protection and performing national registration of the substances according to procedures set in legislation of Russian Federation."

In Russian legislation following registries directly or indirectly related to registration of potentially hazardous chemicals (also as possible pollutants) are foreseen:

- o National registry of pesticides and agrochemicals; the registration is performed on the basis of results of registration tests and expert assessment and is given for 10 years, or for 2 years if further investigations are necessary to clarify potential hazards to human health and environment. Legal result of the registration procedure is certificate of registration and recording the chemical into national catalogue of pesticides and agrochemicals. The system is based on Articles 1 and 2 of Federal Act "On safe handling of pesticides and agrochemicals.
- o National registry of potentially hazardous chemical and biological substances². The basis of the current system is laid down by Governmental Regulation of Russian Federation No. 869 from 12.11.1992 (amended in 05.04.1999 by Regulation No. 374). In the registry are data on nomenclature, production process, use, use purposes, properties, biological impact and fate of a chemical in environment. The registration is based on the results of toxico-hygienical and ecotoxicological investigations. The hygienic regulations and norms concerning human health relevant for a substance are elaborated by expert institutions and organisations accredited by Ministry of Health of Russian Federation, institutions elaborating norms related to protection of environment are accredited by Ministry of Natural Resources of Russian Federation. The Registry has exclusive right to distribute data and materials on production and use of potentially hazardous chemical and biological substances on the territory of Russian Federation to the relevant authorities. Substances having military importance are registered in a framework of national system on accounting and control of extremely hazardous substances. The register includes also CAS Nr; however, as well as research of the BACCON Rus project team, as well as interviews with the Russian experts reveal that some CAS Nr can be assigned wrongly.
- o National registration of human and veterinary medicinal products is obligatory for production, sale and use on territory of Russian Federation (based on Article 19 of Federal Act "On Medicinal Products" from 22.06.1998).

² **Russian Registry of Potentially Hazardous Chemical and Biological Substances** is located at: Vadkovsky per. 18/20, 127994, Moscow; tel.: (095) 973-30-21, Tel/fax.: (095) 973-26-57.

- National registry on hazardous industrial sites is containing information on activities of these sites, including reasons why they are considered hazardous and list of necessary and existing licenses for certain activities. The registry is kept by Federal Service for Environmental, Technological and Nuclear Supervision (previously National Technical Inspectorate, GosGorTehNadzor). The sites obliged to register have to make registration within 30 days starting their activities by presenting declaration. The re-registration is accomplished each 5 years. Access to the registry information is limited and according to certain procedures. The basis of the system are laid down by Federal Act “On Industrial Safety of Hazardous production Sites” from 20.06.1997, Annex 2 of the Act is giving amounts of hazardous chemicals triggering sending in the declaration. The registration procedures are in Governmental Regulation from 24.11.1998.
- National registry on waste disposal facilities and federal classification catalogue of wastes (based on Article 20 in Federal Act No 89 “On industrial and municipal waste” from 24.06.1998, changed in 29.12.2000).

Last two registries are more relevant for environmental permitting or licensing.

Besides national substance registry, there are product registries – the registry is kept in relation to approval of classification and safety measures by Territorial units of ROSPOTREBNADZOR (see Chapter A. IV).

On the regional level there can be also some differences, for example, the register of dangerous installations in St.Petersburg. This is system of information monitoring on handling of potentially dangerous chemicals and biological substances maintained by Regional Toxicological Information Centre "TOXI" in co-operation with Territorial Unit of Consumers Rights Protection in St. Petersburg (earlier so called Sanepidnadzor). Everyone using chemicals above certain thresholds has to register hazardous substances in use, including their content in products since 1992 (main purpose –risk and emergency management, i.e. comparable with EU SEVESO Directive, but also to estimate total coefficient of potential human health impact and size of resulting sanitary zone; it may happen that calculated sanitary zone (by accredited institutions) is larger than could be provided by surroundings – enterprise has to implement measures to reduce the impacts by applying certain measures). There are more than 600 enterprises in this register.

These enterprises should have ecological passport (permitting system on emissions to air, water, waste management), if necessary also passport of working place where carcinogenic substances are used, and radiation passport.

The data on use were gathered into database, but due to technical reasons in recent years there are only “data on paper” available.

Summary of specific features of Russian substance registration model is following:

- Registration is performed with already available data, performing new tests prior registration is not required, i.e. in lot of cases data sets for substance properties are not complete;
- Most often the substance or product is registered for a certain term. Upon expiry of certification term registration procedure is repeated.
- If test results indicate and product assessment indicates high risks, temporary registration for two years is given, manufacturing or use of the substance is not prohibited;

- Changes in a substance data set are not communicated to the users of the registry data (it is not electronically accessible for users).

In case chemicals are imported to Russia, evidence of registration in Registries shall be presented to customs. Special form is used for transportation of hazardous chemicals (OBUH). Although there should not be any unregistered chemicals and products at Russian market, they are observed.

A.VI Summary on classification and hazard communication

Main conclusions while comparing Russian and EU classification and hazard communication systems are following:

- In both systems the goal is that chemicals with unknown properties are not put on the market. It seems that in both systems – EU and Russia- it has been achieved only for pesticides (plant protection products and some biocides) - through registration of approved products and market control activities.
- **In Russia registration is required also for potentially hazardous chemical substances since 1992.** The registry contains ca 1500 substances, but there still lot of substances which not registered on the market, **so the enforcement is not functioning.**
- The purpose of registration is to ensure that hazards of a substance have been evaluated through testing, health and environmental standards for a substance have been established and technical documentation on safe use has been elaborated. But actually only existing data are required, i.e. there are gaps of data in the substance registries.
- Besides substance registration there is also product registration system in Russia, but it does not have common practices all over the Federation's territory.
- **The control of correctness of labelling and other hazard communication instruments of products actually placed on the market seemingly is very weak. Besides, there are lot of illegal and counterfeit products on the market**
- **Tests on chemicals properties are performed in accredited laboratories (according to ISO 17025),** it is said that GLP principles are being introduced. Testing methods in use are said to be the same with OECD ones as Russia participates in international cooperation on assessment of chemicals' hazards since 1988. **There is a lot of information on chemicals properties available.**
- There is no common hazard classification system in Russia. There are 7 different national standards (GOSTs) regulating classification in different occasions for specific purposes. Classification endpoints and criteria are not common with EU/GHS system. Obviously, the current classification system will be changed due to **harmonisation with GHS, which also will require a lot of resources incl. capacity building.**
- Uniform requirements for product hazard labelling do not exist. Different standards are in use for different product categories, also a general rules for the retail trade. Main difference from EU/GHS label system – pictograms are not used. Some producers have put pictograms in parallel with Russian labelling (also original labelling is kept on imported products), but the result is not reliable and in some cases even in contradiction.
- Transport labelling has common features with international rules – pictograms and UN codes are in use.

- **Safety data sheets similar to EU ones are required** by national standards since 1994. But the legal status of such SDS and actual use in practise is still unclear - according to received information SDS is not used as a hazard communication tool, and if user wants to have it, the SDS is sold to user. It has been told that some SDS are 30-40 pages in length.
- SDS should be registered, but the registration is not guarantee that SDS contains correct information - registry contains several totally different SDS for the same product manufactured by different producers.

Although current Russian classification and hazard communication systems are not similar to international ones, there are ongoing activities to develop the systems and harmonise it with GHS.

Following legislation is in drafting process:

- Technical regulation on chemical products (presently the structure of legislation is being developed)
- Technical regulation on danger classification of chemical products (drafting proposals are submitted)
- Technical regulation on hazard communication (draft legislation is submitted to State Duma for approval).
- Technical regulation on safety of cleaning and auxiliary agents, containing surface-active substances (presently the structure of legislation is being developed)

At the same time work is going on with Standards development:

- The revision of GOST 30333 on Safety Data Sheet (in 2005)
- The development of GOST on Labelling (in 2005)

There are following main cooperation potentials between Russia and EU concerning classification and labelling:

- Assistance in legislation development to introduce GHS, including relevant changes in norm-creating documents (standards)
- Training of interested parties (mainly industry and authorities) on GHS.
- Conducting of pilot projects, which confirm that implementation of GHS is possible in terms of economic feasibility.

Russian authorities have shown interest to cooperate on testing issues, e.g. on necessary steps to achieve mutual recognition of test results between Russia and EU. If this area is considered as a cooperation priority, there is need for a project that investigates in- depth Russian testing system, including endpoints tested and relevant testing methods in use, reliability of quality assurance systems in place.

Building of the institutional set up, which in future is able to enforce the GHS system, is one of the important tasks to make the system work. Institutional set-up of control of chemicals management in Russia is given in Part C.

A.VII Future developments in chemicals safety legislation

A.VII.1 Special Technical Regulation on Chemicals Safety

Draft of Special Technical Regulation on Safety of Chemicals Production, Storage, Transport, Sale, Use and Disposal was presented to the Government of Russian Federation in the beginning of December 2005. Core of the regulation is enforcement of chemical safety management principles on the basis of EU relevant legislation. The draft is available in Russian language (<http://www.chimcert.ru/file/tr.pdf>), but this is not the final text submitted.

Main chapters of the Draft Technical Regulation are following:

Chapter 1. General Statements: gives objectives, scope, glossary and list of related legal acts.

Chapter 2. Classification of chemical products according to their properties: foresees harmonisation with international classification principles, classification is done by producer/importer (referred as “applicant”), results of classification are subject to expert assessment and controlled/approved by inter-agency commission. Data for classification are retrieved from test results of accredited laboratories, but also data from internationally recognised registries can be used. There is also possibility to use classification made outside Russian Federation – in case there is agreement between governments.

Chapter 3. Requirements for safe handling of chemical products: key-words for safe management are storage, packaging, and qualification of personell, transportation, sale, use and disposal. Both hazard labelling and safety data sheets are foreseen as tools for hazard communication.

Chapter 4. Registration of chemical products: registration is foreseen for potentially hazardous chemical products before they are marketed. Registration is done by inter-agency commission, there are representatives from federal organisations, responsible for:

- health and safety of working environment;
- rescue service;
- protection of environment;
- supervision of chemical industries;
- technical regulations.

Dossier of a chemical product is evaluated by accredited experts. Both substances and mixtures are subject to registration. In case mixture contains only potentially hazardous substances which are already registered, registration of the mixture is accomplished within 5 days.

Chapter 5. Marketing restrictions: not in draft available in Internet.

Chapter 6. Marketing rules for chemical products: not in draft available in Internet.

Chapter 7. Conformity assessment of chemical products: compulsory to year 2012, accomplished by 3rd-party declarations and certification programmes.

Chapter 8. Supervision: general principles of inspections/supervision elaborated, no institutional setup is given.

Chapter 9. Implementation schedule: foreseen in 4 stages, registration depending on production/marketing volume is taken as basis. By year 2012 registration of substances should involve substances with production volume > 1 tonnes per year (this date could be different in latest version – according to oral presentation this date could be 2020).

A.VIII Conclusions

- ⇒ Currently Russia is in process of developing new legislation for chemicals, the framework for current legal development is laid down in strategic document «**The foundations of the state policy for ensuring chemical and biological safety of the Russian Federation for the period up to 2010 and longer terms**», approved by President of Russian Federation V.V. Putin (4.XII. 2003. no Pr-2194).
- ⇒ One of the major tasks is harmonization with provisions of international law, international treaties and agreements, of which the Russian Federation is a part of. Therefore there is an interest about developments in the international arena (GHS). There is also noticeable interest about REACH due to similarity to the planned system of registration of chemicals.
- ⇒ The current Russian system of classification and labelling of chemicals differs a lot from the GHS concept, except the requirements for safety data sheets. The harmonisation especially in field of classification and labelling will require a lot of resources. Therefore exchange of know-how with other countries would be very important.
- ⇒ Russia has harmonised the requirements for testing with the international praxis, therefore the collected information about chemicals properties would be also very interesting for other countries.
- ⇒ The system of registration of biocides does not exist. Some similarities could be seen with the product registration system which covers also some types of biocides, however, the hazard and exposure assessment is much simpler.

B Environmental legislation related to providing information on quantities of hazardous substances used or released into environment

B.I Introduction

Terms of reference for environmental legislation analysis related to providing information on quantities of hazardous substances used or released into environment were following:

1. Control mechanisms on placing chemicals on Russian market.

1.1 What are requirements for placing chemicals on the market? Role of GOST standards?

1.2 List of prohibited/ restricted chemicals/ control mechanisms

2. Environmental permitting:

2.1. Environmental permits: who needs to apply?

- What is regulated within permit?
- How precise raw materials are described?
- How precise emissions are described? Which substances have to be addressed?

2.2. What other type of permits they have to start operation? What is regulated within permit? What information stays with authorities?

3. Environmental reporting:

3.1. Reporting to state authorities

- On what companies need to report / do they report only about emission or also raw materials use? How detailed?
- Do they report on production volumes and how precise?

3.2. Environmental tax calculation

- Based on measurements or calculations? On what calculations are based: on production volumes etc?
- On what substances you need to pay tax?
- Who decides on tax amount?

4. Institutional set up

- Which inspections are inspecting industrial companies? On what? What is recorded?"

The analysis is based on

- handbooks:

- O.L. Dubovnik. Ecological legislation in questions and answers. Prospect, Moscow 2004; 299 p. /in Russian/
- Ecological legislation in Russian Federation (Editors I.D. Sorokin, I.A. Serebritskii). Vol. I, Vol. II. St. Petersburg 2002.
- N.P. Tihomirov, I.M. Potravnii, T.M. Tihomirova. Methods of analysis and management of ecological-economical risks. Unity, Moscow 2003, Chapter 4.2 /in Russian/

- review of Russian environmental legislation by consultants V.F. Budarin and A.A. Sedova on reporting related to water (“Обзор российского законодательства по опасным веществам и процедуре сбора информации, отчетности по сбросу загрязняющих веществ в водные объекты”);
- information received during project visits to Russia and meetings.

B.II Sources of environmental information in Russian Federation

Official environmental information is generated from data received in form of different reports, which have certain common features:

- 1) reporting is based on requirements of legal acts and accomplished by procedures foreseen in those acts;
- 2) data presented in reports are received by different pre-agreed methods;
- 3) access to and further distribution of data is subject to specific regulations.

The main sources of information are:

- national statistical reports on official forms to National Statistical Committee and its regional sub-units;
- national cadastral registries: consolidated data on conditions of an environmental object and data on its users, distributed by strict juridical procedures;
- federal registries of potentially hazardous chemical and biological substances, which are located in structure of Ministry of Health of Russian Federation, and other registries;
- ecological passports of enterprises based on national standard from 15.10.1990 (GOST 17.0.0.04-90). Data in passports include short description of technological processes, mass balances, characteristics of raw materials, emissions, discharges and waste;
- declaration on industrial safety, foreseen by Federal Act “On Industrial Safety of Hazardous Production Sites”, and other declarations;
- annual national report on quality of natural environment;
- investigation reports and other data in governmental agencies and public authorities, generated as a result of their ecological activities.

Information flow on use and releases of a certain chemical substance in Russian Federation is presented in Chapter B. VII “Conclusions”.

B.III Control mechanisms on placing chemicals on the market

In Russian Federation all chemical substances must be registered to be on the market. See Chapter A.VI.

B.IV Environmental permitting in Russian Federation

In Russian language term “environmental permitting” is equal to “ecological licensing”. Following types of permits are existing:

- a) permits according to object of permitting, i.e. permits on natural resource use, investigation and environmental impacting, e.g pollution permits if negative impact is concerned;
- b) Permits according to type of activity or subject of permitting, including certain economic activities as a whole, or only some stages of it.

In 08.08.2001 Federal Act “On licensing of certain type of activities” was adopted. According to the Act activities like operation of chemical hazard installation, disposal of chemical weapons, production of disinfectants shall have appropriate licenses.

Classical “environmental permits” are foreseen by other Federal Acts regulating ecological issues.

In relation to release of hazardous substances to water environment following licenses should be considered:

- a) Activities on continental shelf /marine environment/: permit to dispose waste and other materials;
- b) Activities in Russian economic area /marine environment/: license on discharge of hazardous substances and disposal of wastes from ships, airplanes, etc.
- c) License on specific water use – involves several types of licenses including water intake from water object, discharge of wastewater.

The basis of licensing on specific water use are laid down in Water Codex of Russian Federation (adopted by Duma 18.10.1995, last amended 23.12.2003 by Federal Act No. 186-FZ).

§ 27 and 28 of the Codex foresee that any physical person using water for business activity or any juridical person shall have appropriate license before starting using water). § 48, 49 and 50 specify the general content of the license and general licensing procedures. All the issued licenses shall be registered.

§ 81 of Water Codex gives general framework for national control on water use and protection. Details of control shall be enforced by Governmental Regulation.

§ 106 foresees that discharge of wastewater containing substances for which no concentration limit values are set, is prohibited.

Chapter 12 of the Codex foresees implementation of economic instruments for regulation of water usage. § 125 sets fee for wastewater discharge. The details of fee calculation are presented in Federal Act No. 71-FZ “On fee for using water objects” from 06.05.1998 (regular changes occur).

Actually, as already seen from water permitting, in permitting system a set of different ecological instruments are involved. In case of ambient air, the main instruments are to establish norms on quality of air, on emissions, registration of pollutants and potentially hazardous substances, apply for emission permit, national records on negative impacts, monitoring of ambient air, inventory of emissions and sources of pollution, collecting pollution fees. The legal framework of ambient air protection is set by Federal Act No 96-FZ “On Ambient Air Protection” from 04.05.1999. Details of permitting are enforced by Governmental Regulation.

Norms of emissions are laid down for stationary source of air pollution taking into account technical characteristics of the installation and background concentrations of pollutants from other activities.

According to § 15 clause 7 of Act On Ambient Air Protection, emissions of substances which impact on human health and environment is unknown is prohibited.

While handling certain hazardous substances limits and bans are applied. Since 1.07.2000 it is prohibit creating new capacities on production of ozone depleting chemicals (ODP), their import and export is accomplished on the bases of quotas adopted according to Montreal Protocol (Governmental Regulation of Russian Federation). Production of ODP chemicals is only allowed if they are used exclusively as a raw material in synthesis of other chemical substances, and in other cases foreseen by Montreal Protocol.

B.V Legislation on environmental quality standards

In Russian Federation several types of environmental quality standards or concentration limit values (CLV, in Russian PDK) are used:

1. Ambient air protection:

- maximum short time CLV, or concentration in ambient air, averaged over period of 20-30 minutes (PDK_{mr}) ;
- daily average CLV (PDK_{ss})
- work zone CLV (PDK_{rz}).

2. Water objects:

CLVs are set according to the purpose of using a water object - different CLVs are for husbandry-drinking water (PDK_{hp}), cultural-recreational (PDK_{kr}) and for fishery water (legal basis is § 109 of Water Codex of Russian Federation, the topic is elaborated further in Chapter 5.1).

3. Soil:

While assigning CLVs for soil, the minimal result of 6 different type of hazard assessment is taken for limit value. The hazard assessments are:

- organoleptic: assessment of concentration triggering no sensible changes in quality of food of vegetable origin;
- general environmental health: assessment of concentration of toxic chemical in soil which results in reduction of number of micro-organisms not more than by 50 %, or in negative change of at least two parameters of biological activity of soil not more than by 25 %;
- toxicologic: assessment of maximum dose for human being not inducing negative effects in case of direct contact;
- phytoaccumulation, migration in water, migration in air: assessment of maximum concentration in soil which does not result concentrations higher than relevant CLVs in foodstuff, water and air.

In case CLVs are not established, for certain substances are set rough safe levels of contact (OBUV). For air OBUV is established for more than 400 chemicals, for water OBUV is assigned mostly for pesticides. These limit values are set both by results of analytical and experimental methods.

Further, taking into account CLVs, limits for economic activities considering emissions to air, wastewater discharge, waste disposal, etc. are set (see Chapter 4 on permitting). For air emissions each source have emission limit values for pollutants emitted (PDV). In certain cases PDVs are replaced by temporary allowed emissions (VSV) – if for economical and technological reasons actual emissions from and enterprise result in higher concentration levels than CLVs. For wastewater discharge limit values for discharged amounts of pollutants in a certain time period are set (PDS).

B.V.1 Details on water environmental quality standards

As CLVs are set according to the purpose of using a water object, following chapter is specifying the details of system of assigning CLVs.

For fishery water CLVs are elaborated by National Committee of Fishery of Russian Federation and approved by Ministry of Natural Resources. The system is working since 1993 and following legal acts apply:

B.V.1.1.1 Ordinance of National Committee of Fishery No. 12-04-11/454 “Procedures on elaboration and approval of concentration limit values and rough safe levels of contact in fishery water” from 14.08.1995.

Concentration limit value for fishery water is defined as experimentally derived maximum concentration of a pollutant in water object, which is not inducing consequences lowering the value of fishery water. (§ 2.3)

In case wastewater contains substances or products of transformation for which CLVs are not assigned, the discharge is prohibited (§ 3.1).

In this case the water user (applicant) is at own cost obliged to organise elaboration of norms for these substances and analytical methods with detection limit at the level of assigned CLVs. The timeline for elaborated is negotiated with Ministry of Natural Resources, (§ 3.2)

Ordinance of National Committee of Fishery No. 96 “On Fishery Norms” from 28.04.1999 foresees annual amendments to the lists of CLVs and OBUVs. The list is published as new edition of ***Ordinance of National Committee of Fishery No. 100 “List of CLVs and OBUVs for Fishery Water” from 28.06.1995***, where have been made changes on the basis of further investigations and excluded substances for which OBUV validity deadline was reached.

The above mentioned list consists of four tables:

- In table 1 are set general quality requirements for fishery water.
- In table 2 are listed CLVs for 1204 substances. In case for a substance CLV is assigned as ‘missing’ – discharge of the substance is prohibited. The table gives following data:
 - Chemical name of a substance, including synonyms
 - Trade name of chemical
 - Formula of a substance (structural and empirical)
 - In case of mixtures the components and their amount in mixture is indicated
 - Main use of a substance
 - Limiting parameter of a substance which was used for assignment of CLV (toxicological, sanitary, sanitary-toxicological, organoleptic, fishery)

- Value of CLV (or PDK)
 - Hazard class of a substance considering its toxicity, bioaccumulation capacity and persistence in water environment (Class 1 – extremely hazardous, Class 2 – highly hazardous, Class 3 – hazardous, Class 4 – moderately hazardous)
 - Information of analytical methods possible to use for effective control of a substance or component of mixture in water.
- In table 3 are listed regional CLVs
 - In table 4 are set OBUV; the period of validity of temporary norms is 2 years.

For husbandry-drinking water and for cultural-recreational water CLVs are elaborated and enforced by National Public Health Protection Service of Russian Federation.

General basis of the system are laid down by *Regulation of Government of Russian Federation No. 554 “On Confirmation of Status of National Public Health Protection Service of Russian Federation and Regulation on National Sanitary-Epidemiological Norms” from 24.07.2000 (amended by Regulation No. 51 from 06.02.2004)*.

The CLVs are listed in *Regulation of Head Health Officer of Russian Federation No. 78 “Enforcement of Hygienic Norms GN 2.1.5.1315-03” from 30.04.2003*. These norms are applied all over the territory of Russian Federation for water objects, both underground and surface water, which are used for centralised or uncentralised water supply for population, for recreational and cultural-domestic water use, and as drinking water and in hot water supply (1.3).

These norms are elaborated on the basis of experimental toxicity and hazardousness tests of substances, according to impact to sanitary regimen of water object, organoleptic investigations, also considering epidemiological data and international experiences. (1.4).

The norms themselves are presented in form of table. CLVs are established for 1356 substances, also indicating limiting parameter of a substance which was used for assignment of CLV (sanitary-toxicological, organoleptic, general sanitary) and hazard class (Class 1 – extremely hazardous, Class 2 – highly hazardous, Class 3 – hazardous, Class 4 – moderately hazardous).

Further, *Regulation of Head Health Officer of Russian Federation 30.04.2003 no. 74 on enforcing hygienic norms GN 2.1.5.1316-03 “Rough limit values of chemicals in water objects used as sources of husbandry and drinking water, and for cultural-recreational activities” since 15.06.2003*, sets rough limit values (ODU), or levels of substances considered safe. These values are used only in preventive sanitary control of enterprises in design and construction phase and are assigned for 3 years. Currently assigned for 442 chemicals, including dyes and other commercial industrial mixtures.

Both CLVs and ODUs could be used also as one of criteria for assessing safety of using sea water by population.

B.VI Framework of reporting on water usage and discharge

The basic requirements on using water ‘objects’ are set by Water Code of Russian federation [from 16.11.1995]. § 92 of the Code stipulate:

- inform relevant governmental bodies on each emergency case, which might have impacted water objects;
- collect information on intake and use of water, and on discharges of waste water including amounts of pollutants ... and report the information by set date to federal agency on water use and protection (*федеральный орган исполнительной власти в области управления использованием и охраной водного фонда*); on groundwater intake and pollution also to federal agency on ground use and protection (*федеральный орган исполнительной власти в области управления использованием и охраной недр*).

Annual report is composed according to guidelines of statistical reporting on water use (template No. 2) and presented to relevant agencies by 10th of January of next year. The initial reporting template origins from 1982, but it has been amended repeatedly. Reports are submitted to federal bodies of water use and protection since 1986 (on paper).

Water intake to be reported involves both intake from natural water objects as well as water received from other persons (e.g. municipal water companies).

Water discharge to be reported involves besides amount of discharge into natural environment and to municipal sewerly also any other amounts of water “outflows”, e.g. giving purified water or wastewater to other persons for use.

The same template is used also for reporting on amounts of polluting substances into water objects. The most common pollutant parameters to be reported are biological oxygen demand (BOD), oil products, suspended solids, dry residue, total nitrogen, ammonia nitrogen, fats, fatty oils, xanthogenes, nitrites, nitrates, organic sulphur compounds, pesticides, surfactants, sulphates, aromatic hydrocarbons, phenols, fluorides, flotating agents, total phosphorous, chlorides, cyanides, chemical oxygen demand (COD); by individual compounds or their ions - aluminium, aniline, acetone, boron, *benzene*, beryllium, vanadium, bismuth, hydrazine, hydroquinone, *dichlorethane*, iron, **cadmium**, potassium, calcium, cobalt, silicium, caprolactam, urea, lignine (sulphate), lignine (hydrolysis), ammonia lignosulphate, magnesium, manganese, *copper*, methanol, *methylene chloride*, molybdenium, *arsenic*, ethanolamide, sodium, *nickel*, tin, rodanide, **mercury**, **lead**, silver, hydrogen disulphide, carbon disulphide, styrene, stibium, turpentine, *tetraethyl lead*, tannine, *toluene*, *carbon tetrachloride*, acetic acid, formaldehyde, furfurol, *chlorobenzene*, **chloroform**, *chromium*, *chromium(VI)*, *zinc*, zirconium, ethylene glycol.³

The federal bodies receiving the reports are keeping cadastral register on water usage and waste water discharge by branches of economic activities, by river and sea basins, for groundwater by hydrogeological regions, and by administrative units.

Since 1991 the data are processed by certain electronic database (программно-информационный комплекс «ПИК ГВК»). The database is a developing system – from time to time new functions have been added. Currently the main sub-units of the database system are: module on legal acts and limit values, input, control and correction of statistical base data, maintenance service of statistical base data sets, processing of data and generation of annual and long-period reports.

³ Compounds in **bold** are substances from Appendix 3 of HELCOM Recommendation 19/5, i.e. substances with immediate priority action; compounds in *italic* are substances from Appendix 2 of HELCOM Recommendation 19/5

The data and reports are automatically exchangeable between Federal Agency of Water Resources and its Territorial units, e.g. Neva Ladoga River basin management board (question remains on the real performance of this system)

B.VI.1 Data-collection practice at enterprise level

For collecting information on water use and discharge, including amounts of polluting substances, and also for monitoring on water quality, each enterprise is obliged to present the report on water use is subject to a programme of ecological control of production process (*программа ведения производственного экологического контроля*).

The programme involves following elements:

- control of compliance with assigned emission limit values (ELVs) and environmental quality standards (EQSs);
- control of efficiency of wastewater treatment plants and any other installations having influence on discharge nature;
- ability to present adequate information to enable implementation of appropriate emergency procedures in case of accidents;
- duly submission of information required for statistical and cadastral registry reporting, and by national ecological monitoring system.

In ecological control of production process, following parameters are controlled:

- generation, composition and properties of wastewater in different stages of technological scheme and treatment, and compliance with technological norms;
- amounts, composition and properties of wastewater discharged into water bodies, and compliance with set discharge norms;
- amounts, composition and properties of water taken from water sources;
- quality of water in impacted water bodies (i.e. from water is taken or where waste water is discharged), and compliance with environmental quality standards.

To ensure common methodological approach while conducting laboratory analysis, each water user has to get approval from federal agencies to analytical programme of monitoring of discharge points and quality of water bodies involved in ecological control of production process. The analytical programme determines sampling points, frequency of sampling, parameters to be controlled, sampling and analytical methods, details of reporting to federal agencies (reports are submitted once in three months).

Sampling frequency and frequency of analysis of certain parameters should guarantee reliable and representative data. As a rule, composition of wastewater is monitored in three months; possible impact of discharge to water body is monitored monthly. Parameters to be controlled involve pollutants considered priority for the enterprise concerned and also taking into account environmental situation of a water body (usually up to 20...25 parameters).

While setting parameters to be controlled following methodological guidance documents and national standards are considered:

- RD 52.18.310-92. Methodological guidance. Environmental protection. Hydrosphere. "Organisation and implementation of monitoring programmes on pollution of surface waters in network of Russian Hydrometeorological Service" (*ПД*)

52.18.310-92 Методические указания. Охрана природы. Гидросфера. «Организация и проведение режимных наблюдений за загрязнением поверхностных вод на сети Росгидромета»)

- RD 52.44.2-94. Environmental protection. Integrated monitoring of environmental media of industrial regions under intensive anthropogenic pressure. (РД 52.44.2.-94. Охрана природы. Комплексное обследование загрязнения природных сред промышленных районов с интенсивной антропогенной нагрузкой)
- GOST 17.1.3.13-86. Environmental protection. Hydrosphere. General requirements to protect surface waters from pollution. (ГОСТ 17.1.3.13-86. Охрана природы. Гидросфера. Общие требования к охране поверхностных вод от загрязнений)
- GOST 17.1.3.05-82. Environmental protection. Hydrosphere. General requirements to protect surface waters from pollution with oil and oil products. (ГОСТ 17.1.3.05-82 Охрана природы. Гидросфера. Общие требования к охране поверхностных вод от загрязнения нефтью и нефтепродуктами)
- GOST 17.1.3.08-82. Environmental protection. Hydrosphere. Procedures to control quality of water in surface waters. (ГОСТ 17.1.3.08-82 Охрана природы. Гидросфера. Правила контроля качества воды водоемов и водотоков)
- GOST R ISO/IEC 17025-2000. General requirements to competence of testing and calibration laboratories. (ГОСТ Р ИСО/МЭК 17025-2000. Общие требования к компетентности испытательных и калибровочных лабораторий)
- Catalogue of possible pollutants in wastewater of agricultural and industrial enterprises
- etc.

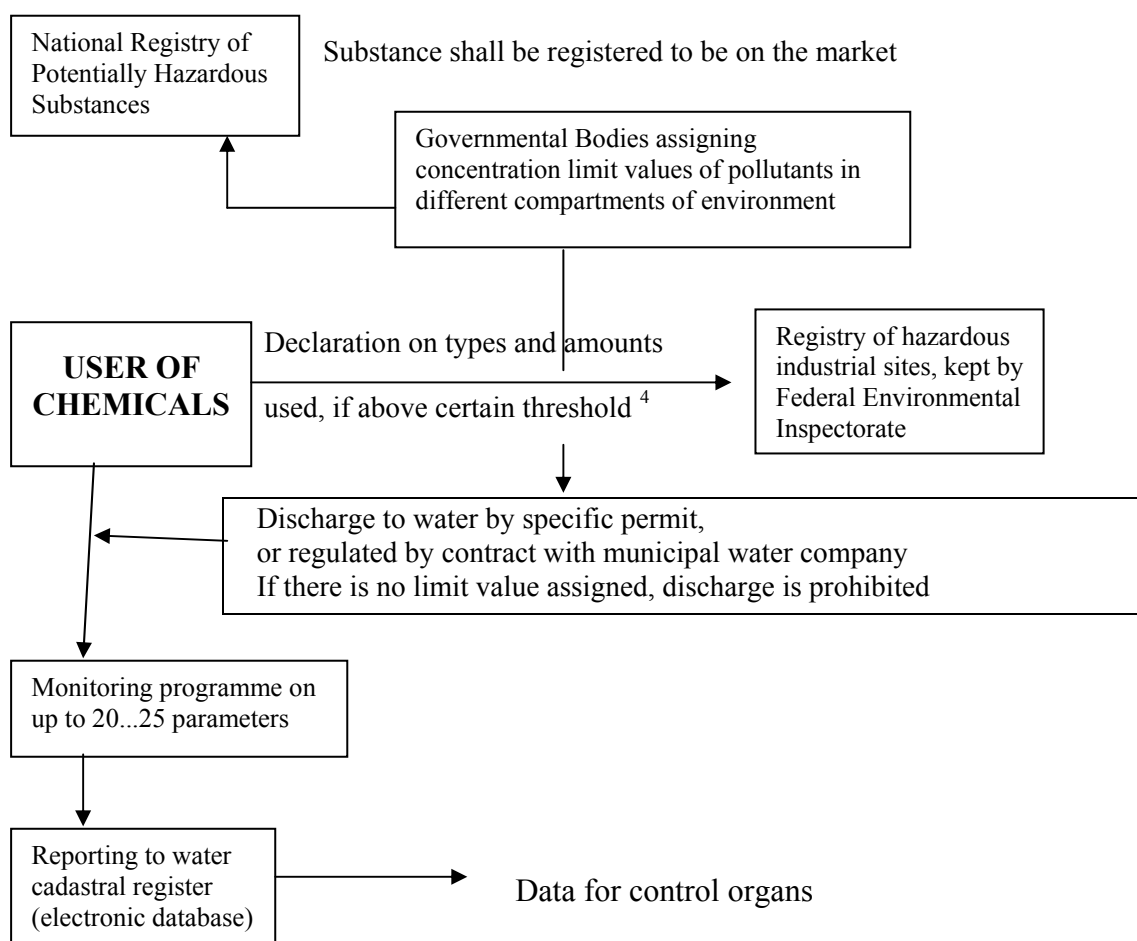
Also sampling is regulated by set of methodological guidance documents and national standards, including also international standard ISO-5667 “Quality of water. Sampling.”

Analysis is made by laboratories having licence on specific methodologies. Laboratories could be owned by the enterprise itself, or analysis is ordered from ‘third party’ laboratories. Also automated analytical systems and devices could be used.

All the analytical methods used in environmental control and monitoring must be in national registry and listed in relevant guidance documents (РД 52.18.595-96 from 1996).

B.VII Conclusions

Taking into account analysis of legal system on protection of environment, following flow-chart on control of potentially hazardous substances could be drawn (industrial enterprise having wastewater discharge used as an example).



Main problems related to the system:

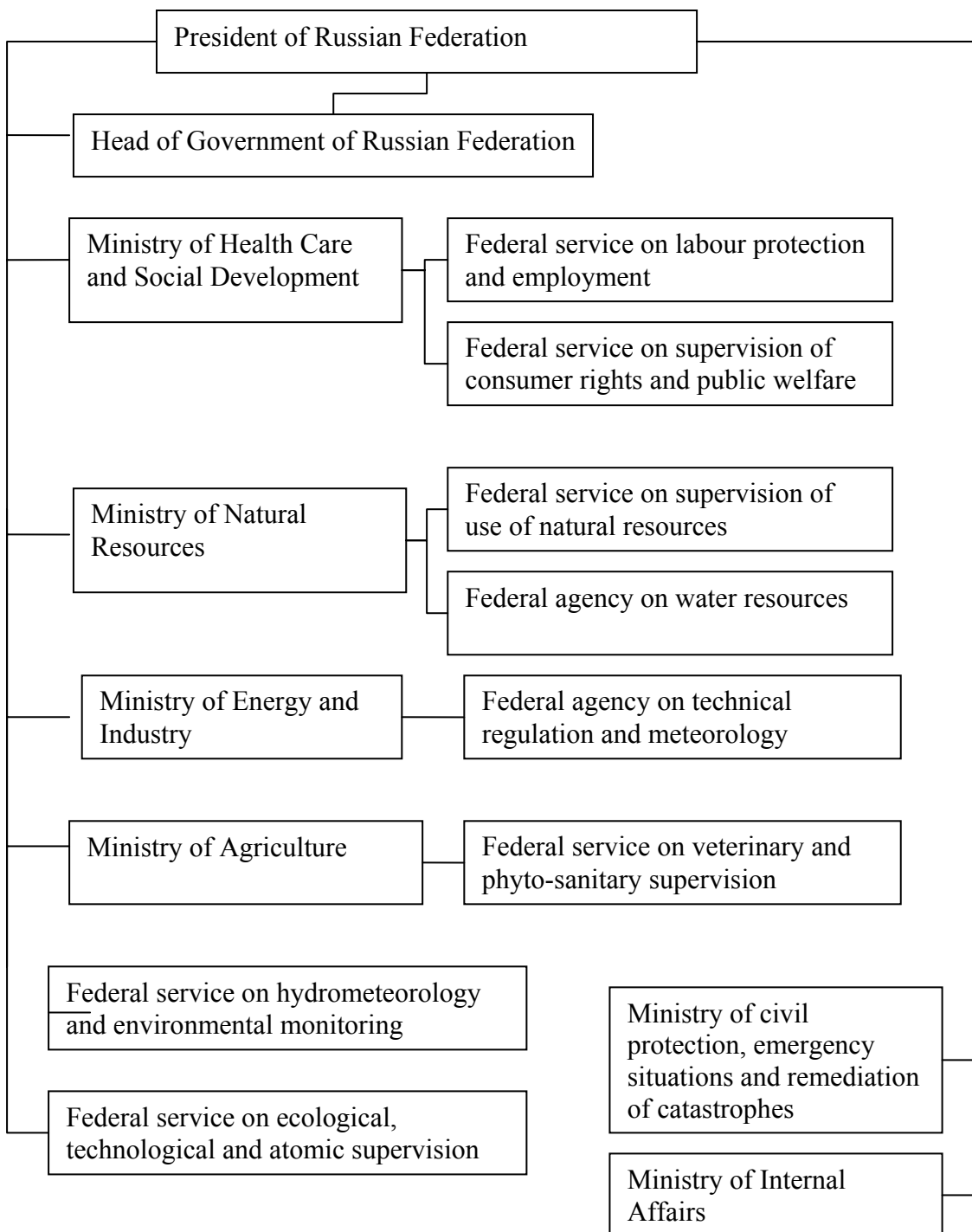
- limited number of substances in the registry (~1500), which obviously does not include all substances actually in use
- concentration limit values are assigned for ~1'300 substances
- the system of permitting industrial enterprises for the pollution discharges including considering concentration limit values and pressure to the water body have a lot of similarities with EU system
- monitoring targeted to the end of pipe analytical control, which includes mainly known pollutants
- fragmented flow of information among authorities.

⁴ In St. Petersburg approximately 750 industrial enterprises from 16'000 (if understood correctly); declaration is filled in after starting activities

C Institutional set up regarding chemicals management

The information is based on

- <http://government.gov.ru>
- interviews with representatives from FGUP “STANDARTINFORM” by ROSTEHREGULIROVANIJE,
- research during project visits to Russia until December 2005.



There have been many changes and re-arrangements in institutional set-up and in responsibilities of institutions since 2000, and the changes are still occurring. More explanation on functions related to chemicals management:

Ministry of Energy and Industry of Russian Federation

(Russian abbreviation: MINPROMENERGO (МИНПРОМЭНЕРГО))

- Development of industrial policy
- Elaboration of norms, standards, requirements for industrial activities

Federal agency on technical regulation and metrology (Russian abbreviation: ROSTEHREGULIROVANIJE (РОСТЕХРЕГУЛИРОВАНИЕ))

- Elaboration of standards
- Conformity assessment of goods
- Control of quality of goods in shops
- Registration of safety data sheets (by FGUP “STANDARTINFORM”⁵)
- Elaboration for standards and regulations The Russian Federal State Unitary Enterprise, FGUP, Main centre for Standardization, Metrology and Conformity Assessment in Chemicals Industry (by FGUP „ЦЕНТРОХИМСЕРТ” /ФГУП „ЦЕНТРОХИМСЕРТ”)

Ministry of Healthcare and Social Development of Russian Federation

(Russian abbreviation: MINZDRAV (МИНЗДРАВ))

- Sanitary-epidemiological welfare
- Occupational health and safety
- Protection of consumer rights

Federal service on labour protection and employment

- Supervision of workers protection (working places)

Federal service on supervision of consumer rights and public welfare

(includes Public Health Protection system, Russian abbreviation ROSPOTREBNADZOR (РОСПОТРЕБНАДЗОР), previous SANEPIDNADZOR (САНЭПИДНАДЗОР)):

- Hygienic assessment and registration of products
- Environmental monitoring (related to public health)
- Elaboration of standards .e.g. concentration limit values
- Biocides control
- Registration of substances (sub-structure: Russian registry of Potentially Hazardous chemical and biological substances)

Ministry of Natural Resources of Russian Federation

(Russian abbreviation: MINPRIRODI (МИНПРИРОДЫ))

- Management and protection of water bodies
- Environmental protection and ecological safety
- Management of air protection

⁵ The Russian Federal State Unitary Enterprise, FGUP, “Russian Scientific-and-Engineering Center of Information on Standardization, Metrology and Conformity Assessment” (“Standartinform”/СТАНДАРТИНФОРМ)

- Management of municipal and industrial waste (disposal, recycling, licenses, cadastre etc)

Federal service on supervision of use of natural resources

- Environmental impact assessment

Federal agency on water resources (including territorial units such as Neva Ladoga River Management Board)

(includes drainage basin based supervision system, for north eastern regional administrative unit abbreviation “Neva-Ladoga” is used)

- Control and monitoring of water pollution (outside the industrial sites), establishment of water quality standards
- Permits for hidrotechnical installations

Ministry of Agriculture

(Russian abbreviation: MINSELHOZ (МИНСЕЛЬХОЗ))

- State agricultural policy including plant protection and veterinary issues

Federal service on veterinary and phyto-sanitary supervision

- Registration of plant protection products
- Supervision of use of plant protection products and other agrochemicals

Ministry of civil protection, emergency situations and remediation of catastrophes

- Emergency situations

Ministry of Internal Affairs

- Handling of explosive, toxic, flammable substances
- Transportation of dangerous goods (explosive, toxic, flammable substances)

Federal service on ecological, technological and atomic supervision including Territorial Units (www.safety.ru) (Russian abbreviation: ROSTEHNADZOR (РОСТЕХНАДЗОР))

- Development of legislation related to technological impact
- Industrial control including industrial supervision from building, operating, closing, certification of equipment, permits for use of substances et enterprises, risk control over industrial accidents, occupational health, **environmental pollution** (emissions to air, water)
- Considered as a key actor in supervision and control of industrial activities, including safe handling of chemicals)
- Also atomic and technical control
- Transportation dangerous goods from dangerous objects

Federal service on hydrometeorology and environmental monitoring

(Russian abbreviation: GIDROMET (ГИДРОМЕТ))

- Environmental monitoring

C.I Questions regarding institutional set up on chemicals management

Currently the main driving force in the development of chemicals policy in Russian Federation has the Ministry of Energy and Industry and subordinated structures to it.

Historically very strong position has been also at Ministry of Health and its sub-structures, the current developments are unclear.

Formally none institution is assigned responsible for implementation of GHS in Russia. Nevertheless, the GHS is taken into account in the current legislative development.

Currently the environmental sector has very little relation to the chemicals legislation, as well as little participation in the law development. This is different from the current trends in the EU, where the environmental sector has very strong interest in the current chemicals debate.

The responsibility for the industrial pollution control (including the legislative initiative) lies with ROSSTEHNADZOR (Federal service on ecological, technological and atomic supervision), directly under the President. The question is, how much the new agency will initiate and steer the legislation development in the pollution control, as well as represent the interests of the environmental protection. Currently the priority is the rehabilitation of the national economy, which does not make good conditions for the development of the environmental sector. The responsibilities in the environmental and nature protection field are still in the sorting stage.

The institutional set up in the chemicals control is focussed on implementation of the pre-marketing instruments (registration, authorisation etc). There is a very small number of inspectors which control the compliance with the marketing and packaging requirements under “ROSTEHREGULIROVANIJE”. The responsibility of the “ROSPOTREBNADZOR” with regard to control of retailed trade was not properly clarified due to contradictory information.

Due to historical reasons, the statutes describing responsibilities of the authorities are diffuse; often they rather describe potential activity fields, but do not provide clear distribution of tasks. Main information source are interviews with representatives from the relevant authorities. Again, also this information is often unambiguous.

With regard to the legislation development, the question of the development of proper enforcement system is often not addressed.

Appendix. Unofficial translation of the Foundations of the state policy for ensuring chemical and biological safety of the Russian Federation

APPROVED
President
of the Russian Federation
V. Putin
December 4, 2003
Pr-2194

**THE FOUNDATIONS OF THE STATE POLICY FOR ENSURING CHEMICAL AND
BIOLOGICAL SAFETY OF THE RUSSIAN FEDERATION
FOR THE PERIOD UP TO 2010 AND LONGER TERMS**

I. General provisions

1. The present Foundations determine objectives, fundamental principles, priorities, tasks and measures of state support in ensuring chemical and biological safety of the person, society and the state (hereafter referred to as “chemical and biological safety”), as well as mechanisms and stages of implementation of the state policy in this field.
2. Legal grounds for the present Foundations are Constitution of the Russian Federation, federal laws and other legislation, as well as international treaties and agreements, which the Russian Federation is a part of in sphere of providing chemical and biological safety.
3. Provision of chemical and biological safety is one of the cornerstones in strengthening of national security of the Russian Federation.
4. General supervision of compliance with present Foundations shall be carried out by President of the Russian Federation.

II. Major factors determining state policy in implementation of chemical and biological safety

5. Increasing negative effect of chemical and biological factors upon population, industrial and social infrastructure and ecological system, increased risk of emergencies (including possible outbreaks of terrorism) at potentially dangerous chemical and biological facilities of various organizational/legal structure and property forms (hereafter referred to as “dangerous facilities”) remains an increasing threat to human life, national security and socio-economical development of the Russian Federation.
6. Necessity to increase level of chemical and biological safety is explained by the following factors:
 - ⇒ increasing amount of dangerous facilities, where technological resources are close to the limit or depleted completely;
 - ⇒ presence of toxic industrial waste storages, polluted territories (water areas) in the course of industrial activities of enterprises and manufacturing organizations (including elimination of chemical weapons), as well as natural basins with pathogenic microorganisms alongside with absence in most regions of special enterprises for recycling (recovery) of dangerous chemical and biological materials;
 - ⇒ decrease in general proficiency level of technical and maintenance personnel, loosening of procedures on physical protection, storage, handling and recovery of dangerous materials at the dangerous facilities;

- ⇒ lack of compliance with technical specifications and technological regulations in manufacturing of specialized equipment, technical appliances (facilities), and rules and conditions, as provided in project and assembly documentation for construction (renovation) of dangerous facilities;
- ⇒ intensification of terrorist activity aimed at dangerous facilities;
- ⇒ increasing probability of ecological disasters related to large-scale usage of environmentally dangerous technologies without providing due chemical and biological safety in industry, agriculture, power sector, transportation and residential/public utility sector;
- ⇒ ineffective government management and regulation in providing security of population, industrial/social infrastructure and ecological system under conditions of increased threats of technogenic, natural and terrorist nature;
- ⇒ weakening of state functions of supervision and technical regulation in the sector of securing chemical and biological safety, including privatization process (change of owner) at the dangerous facilities;
- ⇒ provisions of international treaties and agreements of which the Russian Federation is a part of, in securing chemical and biological safety.

III. Tasks, major principles and priorities of state policy in ensuring chemical and biological safety

7. Objective of the state policy in ensuring chemical and biological safety shall be gradual reduction in exposure of population, industrial and social infrastructure to dangerous chemical and biological factors to acceptable minimum risk levels.

Foundation of the state policy for ensuring chemical and biological safety is based on improving and strengthening of institution of chemical and biological safety, improving functions of the state regulation for the purpose of gradual reduction of various adverse factors affecting chemical and biological safety.

Aforementioned tasks may be solved by establishing of state system of ensuring chemical and biological safety of the Russian Federation (as a subsystem of comprehensive state system of early warning and emergency management), providing classification, forecasting, prevention and elimination of chemical and biological threats; management of emergencies resulting from chemical and biological factors.

8. Basic principles of state policy in providing chemical and biological safety are as follows:

- ⇒ priority in ensuring protection of human life and health in the territory of the Russian Federation;
- ⇒ compliance with legislation of the Russian Federation, as well as obligations arising from international treaties and agreements in ensuring chemical and biological safety, compliance with sanitary/hygienic and sanitary/epidemiological rules and regulations, including safety standards;
- ⇒ priority in ensuring security of critically important chemical and biological facilities within industrial and social infrastructure;
- ⇒ rational combination of interests and reciprocal responsibility of a person, society and state;
- ⇒ coordination of state system objective for ensuring chemical and biological safety with needs and economic opportunities of the country;
- ⇒ availability of information in sphere of ensuring chemical and biological safety for population of the Russian Federation.

9. Priorities of state policy in ensuring chemical and biological safety are as follows:

- ⇒ improvement of state regulation and legislative framework; development of industrial police, fundamental and applied science; technology and equipment; prevention of emergencies and liquidation of consequences; anti-terrorist activity; education and further training of personnel.

IV. Fundamental tasks of the state policy of ensuring chemical and biological safety

10. Major tasks in improvement of the state regulation are:

- ⇒ development of state management methods, coordination and supervision, including use of legislative identification of authority and responsibilities of federal bodies of the state, government authorities of subjects of the Russian Federation, local authorities, supervising authorities at the dangerous facilities and organizations using these facilities, as well as development of mechanisms of their interaction;
- ⇒ identification of necessary scopes and sources of funding (as provided in state budget and other sources), its allocation (funding) for the purpose of implementation of programs and activity plans to ensure chemical and biological safety;
- ⇒ development of methods for providing government funding guaranteed by the state, and social protection of various groups of citizens exposed to dangerous chemical and biological factors, as well as residents of protected activity zones, implemented at the chemical weapons storage and elimination sites, as well as other dangerous facilities;
- ⇒ increasing effectiveness of state regulation of anti-terrorist activity, providing for protection of dangerous facilities, public gathering sites and other potential targets for terrorist activities;
- ⇒ development of public administration at the federal, regional, territorial, sectoral and local levels (including levels of particular facility) in sector of establishing and improving of system for development, manufacturing, stockpiling and renovation of protective equipment for dangerous chemical and biological factors, to ensure safety of population, industrial and maintenance personnel of the dangerous facilities, rescue and emergency services personnel, special anti-terrorist units as well as other units involved in emergency management;
- ⇒ ensuring potential of the Russian Federation to counteract development, purchase, manufacturing and stockpiling of chemical and biological weapons by other states, including maintaining adequate level of safety equipment for chemical and biological weapons, as well as anti-terrorist and military potential to restrict usage of this weapon;
- ⇒ development of international cooperation including improvement of international cooperation and enforcement mechanisms for international treaties and agreements, which Russian Federation is a part of, concerning provision of chemical and biological safety.

11. Major tasks in improvement of legislation framework are:

- ⇒ drafting of federal laws and legislation for subjects of the Russian Federation, other legislation governing chemical and biological safety, stipulating activity and responsibilities of state authorities of the Russian Federation, local authorities, supervising authorities at the dangerous facilities, control and surveillance authorities, physical persons and legal entities;
- ⇒ harmonization of legislation framework of the Russian Federation in ensuring chemical and biological safety with provisions of international law, international treaties and agreements, of which the Russian Federation is a part of, in ensuring chemical and biological safety;
- ⇒ elaboration and introduction of technical regulations for various types of industrial activity, ensuring compliance with chemical and biological safety rules, as well as general and specific technical regulations related to security and physical protection of dangerous facilities, introduction of certification system for occupational safety procedures at the aforementioned facilities;

- ⇒ increasing personal and corporate responsibility for non-compliance with regulations of stock-taking, storage, handling and transportation of test or collection strain samples or highly dangerous infections, toxic or poisonous substances and chemical compounds, other dangerous materials used in agriculture, health care and other sectors of national economy, as well as negligence towards its timely disposal (recycling);
- ⇒ provide possibility of enforced observation or mandatory quarantine for persons, which contracted diseases resulting from remaining in high risk zone of infectious disease, or other persons who were previously present in this zone.

12. Major tasks in improving industrial policy are:

- ⇒ implementation of a complex of measures to ensure development of systems, instruments and technical diagnostics methods for facilities and equipment, including methods of technical diagnostics of facilities and equipment with expired service life period, that are still in operation at the dangerous facilities, in handling and transportation of dangerous materials; ensure control of routine maintenance and major renovations and repairs of premises at the dangerous facilities;
- ⇒ establish database on reliability of operation at the dangerous facilities and technical equipment, assessment of effectiveness of existing safety regulations and other safety rules, which are being introduced at the dangerous facilities;
- ⇒ improving systems and methods of control, management, including automatic emergency and fault protection of technological processes, ensuring effective operation of emergency and dispatch services at the enterprises;
- ⇒ development and introduction of safety systems for all modes of transportation used in carrying of dangerous chemical and biological goods, ensuring continuous monitoring of its condition and location, optimization of transportation system for this type of goods;
- ⇒ implementation of a complex of engineering measures to decrease risk of exposure to dangerous chemical and biological factors by population, industrial and social infrastructure and ecological system in the course of design works, construction, operation and decommissioning of dangerous facilities;
- ⇒ introduction of mandatory licensing of activity (except for military units of Ministry of Interior Affairs of the Russian Federation) at the dangerous facilities, including ensuring physical protection and security of dangerous facilities;
- ⇒ establishment and development (including mobilization readiness) of scientific and industrial foundation, specialized in manufacturing of domestic systems (equipment) of material/technical and other support of chemical and biological safety;
- ⇒ development and introduction of local technologies aimed at substitution of imported technologies, materials, parts and other types of products;
- ⇒ introduction of modern methods (including express methods) and equipment for outfitting of control and surveillance authorities with testing and control equipment to ensure proper contents of toxic materials, pathogenic microorganisms and ecological pathogens in the environment, food products and pharmaceuticals;
- ⇒ introduction of mandatory licensing of operations (services) on disinfection, disinsection and deratization activities;
- ⇒ development and introduction of instruments, methods and mechanisms for information protection to ensure chemical and biological safety.

13. Basic tasks in development of fundamental and applied science, technologies and machinery to ensure chemical and biological safety are as follows:

- ⇒ elaboration of methods and instruments of timely identification of threat, danger assessment and drafting of proposals to ensure chemical and biological safety and emergency management;

- ⇒ elaboration and introduction of information and forecasting-analytical systems, including geo-information expert systems, development of complex studies in the field of mathematical modeling to reveal basic principles in ensuring chemical and biological safety, drafting of possible scenarios for further development of situation and support in adopting of appropriate decisions;
- ⇒ elaboration of cost-effective technologies for dangerous facilities, exclusion or maximum reduction of usage of toxic and pathogenic microorganisms in technological cycle, and minimizing its exposure to population, industrial and social infrastructure and ecological system;
- ⇒ development and introduction of individual and collective protection systems to eliminate exposure to dangerous chemical and biological factors, design and manufacturing of special equipment for protection and medical treatment;
- ⇒ development of environmentally safe recovery technologies for dangerous chemical and biological, industrial and household waste, rehabilitation of territories (water basins), which undergone technogenic (anthropogenic) pollution, as well as improvement of appropriate technologies for elimination of stockpiles of chemical weapons, decreasing activity of natural basins of pathogenic microorganisms.

14. Major tasks in prevention and emergency management, resulting from toxic effects of chemical and biological factors are as follows:

- ⇒ improvement of early warning and public notification systems, as well as employee notification systems on emergencies at the dangerous facilities;
- ⇒ improvement of public awareness and training system for taking actions in chemical and biological emergencies;
- ⇒ development of unified and comprehensive methodologies of chemical and biological threat assessment for dangerous facilities for federal executive authorities, and authorities of subjects of the Russian Federation, including assessment of chemical and biological situation resulting from emergency;
- ⇒ improvement of methods and instruments for prevention and management of emergencies (including early stages) at the dangerous facilities, in centers and zones of pollution (damage), including situations resulted from transportation of dangerous goods;
- ⇒ development of environment monitoring systems in locations of dangerous facilities to ensure assessment and timely forecasting of possible pollution (damage) zones in emergencies, its coordination with dispatch services on duty, local warning systems and task forces at the facility level, as well as local and territorial levels;
- ⇒ elaboration of social tension monitoring systems in locations of dangerous facilities;
- ⇒ implementation of measures on elimination of toxic materials and pathogenic microorganisms;
- ⇒ upgrading and development of medical clinical facilities, renovation of equipment at the analytical laboratories to ensure development and application of up-to-date medical technologies for prevention, diagnostics, treatment and rehabilitation of population in dangerous chemical and biological exposure;
- ⇒ providing safety of food and medical products, manufactured using genetically modified materials, ensuring safety of biological system to avoid intrusion of hostile biological organisms, forecasting of genetic aspects of biological safety; establishing of state control system, supervising the turnover of genetically modified materials;
- ⇒ improvement of national calendar of prophylactic vaccines and epidemiological vaccines;
- ⇒ establishing of emergency stockpiles system of domestic chemical and biological protection equipment, as well as raw materials and parts, necessary for it design and manufacture; supply of healthcare facilities with immune-biological and diagnostic preparations, antidotes including other modern pharmaceuticals;

- ⇒ introduction of amendments into documents stipulating regulations on stocking and maintaining of mobilization reserve of civil defense in terms of expanding powers for subjects of the Russian Federation, enterprises and organizations (without regard to organizational or legal structure, or form of property) on independent purchase and supply, storage and use of domestic equipment protecting from dangerous chemical and biological exposure, as well as provision of population with portable individual protection equipment for breathing to decrease risk of chemical and biological damage in technogenic accidents, natural disasters and terrorist activities;
- ⇒ realization of a complex of actions to decrease amount of sources of chemical and biological hazard, as well as scopes of potential contamination centers;
- ⇒ organization of supply and provision of population with individual protection equipment, chemical and biological control instruments, medications, medical preparations, vaccines, antidotes and individual packages of chemical protection.

15. Main tasks in provision of anti-terrorist activities are as follows:

- ⇒ improvement of legal basis and instruments for establishing of anti-terrorist units related to chemical and biological safety;
- ⇒ improvement of physical protection and security of dangerous facilities and materials in accordance with national regulations and international rules;
- ⇒ drafting of legislation stipulating duties and responsibilities of federal bodies of state authority, authorities of subjects of the Russian Federation, local authorities, management of dangerous facilities, organizations operating aforementioned facilities having various organizational structure and forms of property to ensure public protection and social infrastructure against terrorist activities, including limited access of physical persons and means of transportation to restricted zones surrounding dangerous facilities, on establishing scope of these zones in accordance with potential threats of using portable long-range weapons, on ensuring where necessary free visual observation of perimeter at protection zones and access roots to these zones;
- ⇒ strengthening of administrative and civil responsibility of officials, introduction of criminal liability for negligence in drafting and acting as necessary to prevent terrorist activities and acts of sabotage using dangerous chemical and biological substances (materials) with respect to dangerous facilities ;
- ⇒ drafting of automated systems of identification and forecasting of emergencies related to chemical and biological hazards, including threats of sanitary and epidemiological nature at the dangerous facilities and other locations of potential terrorist activities using toxic substances and pathogenic microorganisms, as well as fast response systems to these activities;
- ⇒ drafting of integrated automated database to ensure chemical and biological safety, including specialized database on transnational terrorist threats of chemical and biological nature with limited access and in compliance with confidentiality requirements;
- ⇒ development and introduction of domestic hardware for automated control systems for operation of dangerous facilities, excluding unauthorized access to information resources used at these facilities;
- ⇒ identification of threats and sources of terrorist activities related to chemical and biological safety; provision of remote monitoring of dangerous facilities (using both fixed and mobile equipment), including locations of mass concentration and movement of public and transportation, i.e. customs transfer points at the state border of the Russian Federation;
- ⇒ provision of information safety monitoring at critically important facilities, as well as safety of information and telecommunication infrastructure ensuring operation of dangerous facilities.

16. Main tasks in training and professional development of personnel are as follows:

- ⇒ improvement of training, refresher training and certification systems for highly-qualified personnel (including management) on complex protection from dangerous chemical and biological exposure, including preventive toxicology based on existing educational institutions using contracts with concerned organizations and enterprises;
- ⇒ development of primary training system for maintenance personnel at the dangerous facilities in provision of anti-terrorist and anti-sabotage security of aforementioned facilities;
- ⇒ organization of general culture of chemical and biological safety among citizens of the Russian Federation, including awareness of population on dangerous facilities, possible terrorist actions and protection methods to avoid exposure of hazardous chemical and biological effects, and management of emergencies;
- ⇒ improvement of effectiveness of centralized and local mass media; introduction of online training system using Internet (“Basics of vital safety” program) into educational practice of medium and higher educational institutions.

V. Main activities of state support in ensuring chemical and biological safety

17. Complex of state support activities in ensuring chemical and biological safety includes:

- ⇒ identification of state authorities at federal and regional levels in charge of coordination of activities of related federal executive authorities and executive authorities of subjects of the Russian Federation to ensure chemical and biological safety;
- ⇒ development and enforcement of federal and regional targeted programs (subprograms) and plans in ensuring chemical and biological safety;
- ⇒ planning of necessary budget allocation at all levels, as well as using financial resources of owners (balance owners) at the dangerous facilities for the purpose of implementation of state policy to ensure chemical and biological safety;
- ⇒ provision of rational combination of state regulation and market mechanisms, direct and indirect stimulation of activities aimed at decreasing threats for operation of dangerous facilities, including targeted budget subventions, subsidies, crediting, tax exemptions, benefits and other preferred conditions;
- ⇒ inclusion of expenses in cost price of manufactured products (work, services) of potentially dangerous enterprises (organizations, institutions) in terms of chemical and biological safety, aimed at increasing of chemical and biological safety;
- ⇒ using of targeted mechanisms of depreciation funds to ensure chemical and biological safety at the dangerous facilities, including methods of accelerated automation of basic assets of these facilities;
- ⇒ elaboration of mechanisms aimed at attraction of non-government financial, material and other resources to comply with innovation and investment objectives in terms of chemical and biological safety;
- ⇒ improvement of legislation of the Russian Federation with respect to increase of responsibilities of owners (balance holders) at the dangerous facilities for lack of activities to prevent emergencies and alleviate resulting damage;
- ⇒ development and implementation of a set of organizational, legal, economic and other measures to withdrawal (relocation) from densely populated areas of the Russian Federation or restructuring (winding up) of dangerous facilities, the operation of which poses persistent threat in terms of chemical and biological safety;
- ⇒ improvement of relations in terms of land legislation by drafting mechanisms for appraisal and determination of fees for territories of protected zones, located around dangerous facilities in correlation with cadastral value of the aforementioned areas;
- ⇒ protection of proprietary interests of the state, investors, owners (balance holders) of dangerous facilities and other parties of innovation-investment process in terms of ensuring

- chemical and biological safety by providing and exchange of liabilities on increase of chemical and biological safety;
- ⇒ rationalization of risks insurance system including elaboration and introduction of optimization mechanism for insurance premiums considering violation of regulations on chemical and biological safety;
 - ⇒ improvement of government system of public health monitoring to the benefit of population residing in protected areas of facilities used for storage and elimination of chemical weapons among other dangerous facilities.

VI. Basic mechanisms and stages in implementation of state policy for ensuring chemical and biological safety

18. Stage One (2003 to 2004). Activity plan in order to introduce the present Foundations shall be drafted beginning from 2004, including the following:

- ⇒ establishing of committee on chemical and biological safety of the Russian Federation for the purpose of implementation of government policy and coordination of activities in the aforementioned sphere;
- ⇒ identification of executive authorities at the federal, regional and municipal levels, responsible for implementation of the state policy for ensuring chemical and biological safety in the Russian Federation; responsibilities shall include establishing of protective facilities for population and protection of industrial and social infrastructure from dangerous effects related to chemical and biological hazards;
- ⇒ development in the framework of federal targeted program “Decreasing of risks and mitigation of emergency outcome of natural and technogenic nature in the Russian Federation” subprograms to ensure chemical and biological safety;
- ⇒ setting up of integrated research and industrial structures consolidating developers and manufacturers of public protection equipment and industrial/social infrastructure facilities to ensure protection from dangerous chemical and biological effects; this shall include in due order a status of federal science and high-technology centers; concentration of financial, material and other resources to implement objectives of the aforementioned bodies, and to support their unified scientific-technical policy in certain fields of activity;
- ⇒ drafting and approval of universal criteria and methodology to ensure identification and classification of danger levels for chemical and biological dangerous facilities, areas and natural phenomena;
- ⇒ inventory of dangerous facilities, including its assessment, revision of areas of protection activities, level of equipment readiness, as well as identification of needs to replace and refresh the stockpiles of domestic protective equipment from dangerous effects caused by chemical and biological factors; development of register of dangerous chemical and biological facilities in the Russian Federation, with highlighting of critically important facilities (included in the register of critically important facilities of the Russian Federation);
- ⇒ drafting and approval of federal plan for improvement of protection level of critically important facilities in the Russian Federation for the period of 2004 to 2008, including activities aimed at increasing safety of most important chemical and biological facilities, condition of which may cause catastrophic consequences, as well as most important activities to introduce safe and cost-effective technologies at the facilities having stockpiles of ammonia and chlorine;
- ⇒ ensuring necessary amount of funds for designing of technologies aimed at reducing negative effects of dangerous chemical and biological nature upon population, industrial and social infrastructure and ecological system, universal technologies for recovery of hazardous industrial and household waste, recycling of restricted and banned agrochemicals, other toxic substances and pathogenic microorganisms;

- ⇒ design and implementation of systems (instruments) and methods of national control and supervision for the purpose of chemical disarmament to ensure chemical and biological safety;
- ⇒ introduction of licensing of activities at the enterprises involved in design, construction, commissioning and operation of dangerous facilities ;
- ⇒ organization of professional training under government order on complex protection of population, manufacturers, social infrastructure and ecological system to eliminate dangerous chemical and biological effects.

19. Stage Two (2005 to 2007) shall include the following activities:

- ⇒ legislative support for mechanisms of ensuring protection of population, industrial and social infrastructure, including ecological system to eliminate dangerous chemical and biological effects, practicing of cooperation and defining responsibilities of federal executive authorities, executive authorities of subjects of the Russian Federation , local governments and management of dangerous facilities;
- ⇒ establishing of automated system of identification and prevention of threats related to chemical and biological safety (including threats of sanitary and epidemiological nature) at the dangerous facilities and locations of potential terrorist activities with use of toxic substances and pathogenic microorganisms;
- ⇒ implementation of pilot project of basic regional system of ensuring chemical and biological safety (within the scope of state system for ensuring chemical and biological safety of the Russian Federation);
- ⇒ establishing a system of state off-budget funds (on federal and regional levels) to ensure chemical and biological safety.

20. Stage Three (2008 to 2010) shall include the following activities:

- ⇒ drafting and introduction of technical regulations for various types of industrial activity, ensuring compliance with chemical and biological safety regulations, as well as general and specific regulations to ensure protection and physical security of dangerous facilities, introduction of certification system for occupational safety procedures at the aforementioned facilities;
- ⇒ ensure implementation of major scope of work on elimination of storages of technical waste, rehabilitation of territories (water basins), which undergone pollution in the course of economic activity, including rehabilitation of areas polluted with rocket fuels, and liquidation of natural basins of pathogenic microorganisms;
- ⇒ development and implementation of a complex of measures aimed at withdrawal (relocation) from densely populated areas of the Russian Federation or restructuring (winding up) of dangerous facilities, the operation of which poses persistent threat to chemical and biological safety;
- ⇒ drafting and implementation of complex activities to withdraw (liquidate) dangerous facilities , operation of which is causing ongoing threat to chemical and biological safety of population in Moscow, St-Petersburg, territorial and regional centers of subjects of the Russian Federation.

21. After 2010 finalizing of complex measures shall take place to ensure economical, scientific and technological readiness of the state to prevent threats of chemical and biological nature, management of emergencies and counteraction of terrorist activities in terms of chemical and biological safety.