JOINT STOCK COMPANY

"STATE SCIENTIFIC CENTER – RESEARCH INSTITUTE OF ATOMIC REACTORS"

PUBLIC ANNUAL REPORT 2012

Dimitrovgrad
2013

UDC 629.039=20

JSC “SSC RIAR” Public Annual Report 2012. – Dimitrovgrad: JSC “SSC RIAR”, 2013. – 240 pages.

The Report covers the key financial, economical and production results of JSC “SSC RIAR” activities for the year of 2012 as well as the results of the sustainability-related activities. The Report also describes the management approaches allowing prominent results to be achieved as well as medium- and long-term plans which are prognosticative and may differ from actual ones. The Report has been issued on a voluntary basis and is addressed to a wide audience.

Contributors to drafting and issuing:
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1 INTRODUCTION

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1.1.

PREFACE

The present Report is the second integrated public report that covers financial and non-financial aspects of the Joint Stock Company "State Scientific Center – Research Institute of Atomic Reactors" (JSC "SSC RIAR") performance. The Report has been issued on a voluntary basis and is addressed to a wide audience.

INTERATIONAL AND RUSSIAN STANDARDS AND RECOMMENDATIONS APPLIED TO ISSUE THE REPORT:

- Global Reporting Initiative Guideline (GRI, version G 3.1);
- ROSATOM's policy in public reporting ;
- Standards in public annual reporting of ROSATOM's enterprises;
- ROSATOM's Code of Conducts No.39 approved by the Board of Directors on October 26, 2009.

The Report covers the key financial, economical and production results of JSC "SSC RIAR" activities for the year of 2012 as well as the results of the sustainability-related activities. The Report also describes the management approaches allowing prominent results to be achieved and efficiency to be improved in accordance with the ROSATOM's strategic objectives.

The Report contains medium- and long-term plans which are prognostic ative and may differ from actual ones since their implementation depends of the economical, political and legal factors being beyond the JSC "SSC RIAR" liabilities (world's economical and political situation, conditions of the market, changes in the tax, customs and environmental legislation, etc.).

Priority topics of the Report:

- development of JSC "SSC RIAR" research base to justify the new technological platform of nuclear engineering ;
- development at JSC "SSC RIAR" nuclear technologies for non-power markets.

The priority topics are covered in detail in Chapter 3 "RESULTS OF KEY ACTIVITIES" as well as in other Chapters of the Report containing specific aspects of the priority topics.

Based on the experience in issuing the Public Annual Report 2011, the quality of Public Annual Report 2012 has been significantly improved.

The Report quality has been improved by means of:

- analysis of the best Annual Reports of nuclear engineering enterprises;
- improvement of staff qualification engaged in public reporting;
- more information about the results of key activities and social politics;
- new Report design.

Comparative characteristics of Public Annual Reports

Criterion	Public Annual Report	
	2011	2012
Number of GRIs involved	10	23
Online version	No	Yes
English version	No	Yes

INTERACTION WITH INTERESTED PARTIES

According to the ROSATOM's Policy in the Public Reporting, the principle of interaction with the interested parties (stakeholders) was implemented when preparing the Report. "JSC SSC RIAR" has the following interested parties as a target audience

- ROSATOM;
- JSC "Science and Innovations";
- Partners (Customers, Suppliers, Subcontractors);
- Employees and Administration of JSC "SSC RIAR";
- Federal and regional authorities and local government authorities;
- Regulatory bodies;
- Public organizations;
- Educational organizations of different levels;
- Local population;
- Mass media.

Public hearings were held when preparing the Report. Chapter 5 "INTERACTION WITH INTERESTED PARTIES" covers in detail the interaction with interested parties and reporting materials.

LEVEL OF INFORMATION DISCLOSURE

The Report is prepared in accordance with the recommendations of the Sustainable Development Reporting Guideline: there is analysis of significant impacts in the context of the sustainable development; applied performance indicators correspond to version GRI G.31; information disclosure corresponds to level C.

The reliability of information published in the Report is confirmed by:

- Conclusion of audit commission;
- Audit of annual financial reports done by an independent auditing company;
- Decision of public hearings.

The Report is issued both in Russian and in English and can be found on JSC "SSC RIAR" web-site (http://www.niiar.ru).

STATEMENT ON LIABILITY LIMIT FOR PUBLISHING PROGNOSTICATIVE INFORMATION

Some information published in the JSC "SSC RIAR" Public Annual Report may contain prognosticative statements regarding future events or financial indices of the Institute.

The following verbiage is used for such prognosticative statements: to plan, to expect, to suppose, to assume, to estimate, to intend, will, possibly, probably, may etc. These statements are prognosticative and may significantly differ from the actual events or results.

JSC "SSC RIAR" does not intend to correct the above-said statements with the purpose to reflect events taken place after either such statements or unforeseen events and does not bear any responsibility to introduce such corrections.

There are many factors, including general economical conditions, competitive environment, activity-related risks, change of situation in the nuclear power engineering, which may cause a significant difference between the real events and prognosticative statements done by JSC "SSC RIAR".

It should not be relied on the prognosticative statements done in this Report regarding any agreement and related investment decision.

1.2.

APPEAL OF DIRECTORS

PERSHUKOV Vyacheslav A.

Deputy Director General,
Innovations Management Block,
ROSATOM

Dear RIAR employees!

JSC "SSC RIAR" was and remains one of the key ROSATOM's enterprises. The Institute's experimental base, being the largest in the branch, covers reactor material science, testing of materials and components of nuclear power facilities, radiochemistry and nuclear fuel cycle. In addition to services related to irradiation and post-irradiation examinations of materials, development and demonstration of fuel for advanced reactors, JSC "SSC RIAR" produces a wide range of radionuclides and ionizing sources.

RIAR is one of the largest contributors to the development of science at ROSATOM that is confirmed by solid investments into the development of its experimental base and construction of a new research reactor MBIR – a basis for the future International Center of Excellence. A poly-functional radiochemical complex to be constructed at the RIAR's site will start a completely new approach to handle radioactive substances, i.e. using of robots and remote control.

Federal Target Programs, ROSATOM's Projects and grants from the Ministry of Science and Education of the Russian Federation will require from the JSC "SSC RIAR" employees more efforts; however, it will open up new vistas, promising R&D directions and give basis for the development of both the Institute and branch in whole.

KONDRATIEV Nikolay A.

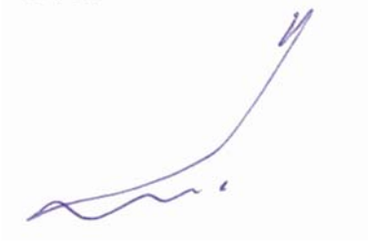
Director General of JSC "Science and Innovations", managing company of JSC "SSC RIAR"

Dear RIAR employees!

Established under the initiative of Academician Kurchatov I.V., RIAR has become an important part of the Russia's nuclear project. Nowadays, as well as over the time, RIAR is rightly seen as one of the most prominent and recognized research institutes of the Russia's nuclear power branch as well as the largest in Russia research and experimental center of the civil nuclear power engineering. The efforts made by the administration and employees to establish, preserve and develop the unique research infrastructure should not be left unmentioned. All above-mentioned allow RIAR to become a key participant in the nuclear-innovative cluster to be established in Ulyanovsk region. The RIAR's staff is its particular highlight and goodwill. It is pleasant to note the work ethic and professionalism of the personnel. No wonder that today RIAR is one of the best institutes of physics & power engineering block and in 2012 it was recognized the leader of ROSATOM's research entities.

Promising tasks that RIAR's employees face under the "BREAKTHROUGH" Project, ROSCOSMOS Projects and Federal Target Programs are aimed at the achievement of the Russia's technological leadership in the nuclear power engineering.

I am sure that next year the successful development of the Institute will go on and the tasks it faces will be effectively solved.



PAVLOV Sergey V.

Director of JSC "Science
and Innovations",
Manager of JSC "SSC RIAR"

Dear colleagues!

JSC "SSC RIAR" is the largest in Russia research experimental center of nuclear power engineering that renders services in irradiation and post-irradiation examinations, develops and demonstrates innovative technologies for advanced reactors fuel fabrication and radioactive waste disposal, produces a wide range of radionuclides and ionizing sources of scientific, industrial and medical purposes.

The unique multifield experimental capabilities allow RIAR to carry out scientific and production activities related to the priority trends of the ROSATOM's development. The key advantage of RIAR is its research and experimental base that comprises research reactors located on one site as well as laboratories for materials testing, radiochemistry and fuel cycle; radioactive waste treatment facilities and all necessary engineering infrastructure.

Today, we are entrusted to implement important Federal Projects that are the pledge of successful future of the Institute, nuclear power engineering and, therefore, Russia.

I am sure that we are best placed to build on the progress achieved and the most challenging tasks are within our depth.

1.3.

KEY RESULTS FOR THE REPORTING PERIOD

Key events regarding the core activities and those related to the sustainable development, %

Indicator	Value
Total revenue growth	42.9
Labor efficiency growth	40.4
Wage growth	22.5

Performance indicators for 2010-2012

Indicator	Year			Relation 2012/2011, %
	2010	2011	2012	
Sales proceeding, mln RUR	3 018.3	3 120.9	4 458.8	142.9
Net asset, mln RUR	3 057.0	3 995.7	6 482.6	162.2
Labor efficiency, thousand RUR/man	650	661	928	140.4
Including insource	552	549	683	124.4
Average headcount, persons	4 869	4 839	4 882	100.9
Average monthly salary, thousand RUR	15.1	18.7	22.9	122.5

1.4.

KEY RESULTS FOR THE REPORTING PERIOD

Key events regarding the core activities and those related to the sustainable development

APRIL

According to the estimation of performance indicators of ROSATOM's entities, JSC "SSC RIAR" is recognized the leader among the institutes carrying out research, development and engineering activities of civil purpose.

On April 12, 2012, high-ranking officials of the US Department of Energy, Heads of US National Laboratories and ROSATOM's representatives made a working visit to JSC "SSC RIAR". Dr. Peter B. Lyons – Assistant Secretary for Nuclear Energy – expressed his hope for Russia-USA agreements to be achieved allowing the US researchers to join the activities carried out at RIAR and to exchange R&D information in the interests of both countries.

The 1st International Workshop on Nuclear Technologies "Cheremshan Readings" was held in Dimitrovgrad. Students, post-graduates and young scientists participated in the Workshop. The Workshop organizers: ROSATOM, JSC "SSC RIAR", National Research Nuclear University "MEPhI" and its Dimitrovgrad branch.

MAY

On May 23-29, 2012, the XIV Russian Meeting "Research Reactors Safety" was held at RIAR. The meeting agenda covered a wide range of issues related to research reactors safety, safety provision for nuclear spent fuel handling, extension of the reactor lifetime and decommissioning.

JUNE

Representative of the Federal Council of the Federal Assembly of the Russian Federation made a visit to JSC "SSC RIAR". The committeemen of the Federal Council for Science, Education, Culture and Information Policy as well as the Federal Council for Social Policy came to Dimitrovgrad to see into a matter the establishment of the RIAR-based nuclear-innovative cluster in Ulyanovsk region.

JULY

The Dimitrovgrad Nuclear-Innovative Cluster Project became a winner of the local clusters development pilot projects contest arranged by the Ministry of Economic Development of the Russian Federation.

AUGUST

Mars rover "Curiosity" landed at the Red Planet. The rover was equipped with an APXS developed by the RIAR's scientists under the supervision of Mikhail A. Ryabinin, Head of Radio-chemical Laboratory, Radiochemicals Department.

On August 27, Dimitrovgrad hosted a joint IAEA-RIAR Training Workshop. The 5-day Workshop was devoted to various accidents that, if real, will require operative response operations of the shift personnel, proper operation of hospitals and timely population warning.

SEPTEMBER

Project "Upgrades of the Physical Protection of the JSC "SSC RIAR" Perimeter" was completed. The Project was implemented under the Agreement between the Governments of the Federal Republic of Germany and the Russian Federation on the Assistance for the Russian Federation in Elimination of Nuclear Chemical Weapons.

OCTOBER

JSC "SSC RIAR" Quality Management System was successfully certified to comply with the State Standard GOST RV 15.002-2003.

Sergey V. Pavlov was appointed Manager of JSC "SSC RIAR".

On October 15, 2012 the VII Russian Conference "Radiochemistry-2012" started. Organizers: the Russian Academy of Science, Russian Fund for Fundamental Research, Interdepartmental Council on Radiochemistry under the RAS Presidium and ROSATOM.

NOVEMBER

JSC "SSC RIAR" Quality Management System was certified to comply with ISO 9001:2008 and R ISO 9001-2008.

Certificate of Conformity was the result of the first stage of the QMS system implementation.

DECEMBER

The second line of the ^{99}Mo production facility was put into trial operation.

2 GENERAL

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2.1.

GENERAL INFORMATION ABOUT JSC "SSC RIAR"

Full name	
in Russian	Открытое акционерное общество «Государственный научный центр – Научно-исследовательский институт атомных реакторов»
in English	Joint Stock Company "State Scientific Center – Research Institute of Atomic Reactors"
Short name	
in Russian	ОАО «ГНЦ НИИАР»
In English	JSC "SSC RIAR"
Location and address	
433510, Dimitrovgrad-10, Ulyanovsk region, Russian Federation	
Contacts	
E-mail	niiar@niiar.ru
Web site	http://www.niiar.ru
Phone	+7 (84-235) 3-27-27
Fax	+7 (84-235) 3-58-59

BACKGROUND

The history of the Research Institute of Atomic Reactors dates back to March 1956 when according to the Decree of the Council of Ministers of the USSR it was determined to build a pilot plant in the Town of Melekess, Ulyanovsk region, to provide R&D support for the development of a wide range of nuclear reactors for nuclear power engineering. By the moment this Decree was issued, the development of a unique high flux research reactor with super high neutron flux density had already been completed. The work was performed under the scientific advising of Academician I.V. Kurchatov. Under his initiative, it was decided to locate at a new pilot plant a reactor with a large research complex to perform work in the field of reactor material science, solid state physics, nuclear physics, accumulation of transuranium elements and radiochemistry. In 1959, according to the Decree of the Council of Ministers of the USSR the Research Institute of Atomic Reactors was established at the base of research and test reactors, facilities and laboratories under construction.

Several reactor facilities of different types were constructed at the RIAR site:

- **SM** high flux vessel-type water-cooled reactor is the first reactor commissioned at RIAR in October 1961 and reconstructed in 1992 in compliance with safety requirements;
- **ARBUS** nuclear power facility with the organic coolant commissioned in 1963, renamed to AST-1 after reconstruction in 1978 and decommissioned later;
- **VK-50** reactor facility is a pilot boiling water-cooled power plant, the only facility of this type in Russia; first criticality was achieved in December 1964, power startup – in October 1965;
- **MIR** multi-loop material test reactor is a channel-type reactor, one of the largest research reactors in the world; first criticality was achieved in December 1966, power startup – in August 1967, it was reconstructed in 1976; it is designed to test new design fuel rods of promising power reactors;
- **BOR-60** fast sodium-cooled reactor is a unique multi-purpose facility designed to solve problems of fast neutron reactors and nuclear power facilities of other types, including those with fusion reactors; it was commissioned in December 1969;
- **RBT-6**, **RBT-10/1**, **RBT-10/2** pool-type research reactors of in-house design commissioned in 1975, 1983, 1984, respectively; RBT-10/1 was decommissioned later.

To perform engineering and scientific research on various problems of nuclear power engineering the RIAR has developed the following:

- the largest material testing complex for examination of nuclear reactor core components, irradiated material and nuclear fuel samples;
- radiochemical and chemical technology complexes to perform research activities in the field of nuclear fuel cycle;
- specialized complex for examination of properties of transuranium elements, radionuclides of high specific activity; development and production of ionizing radiation sources;
- radwaste reprocessing and disposal complex.

All of them have been successfully functioning.

In 1994, RIAR got a status of State Scientific Center, in 2008 it was re-organized and became Joint Stock Company "State Scientific Center – Research Institute of Atomic Reactors", a part of the ROSATOM State Nuclear Energy Corporation.

At present, RIAR is the major Russia's research center of which experimental capacities provide investigations in the following trends:

- physics, engineering, irradiation techniques and safety of nuclear reactors;
- reactor material science and methods for testing materials and components of nuclear power facilities;
- radiochemistry and fuel cycles of nuclear power engineering;
- radionuclide sources and radiochemicals.

REGISTRAR

According to the Resolution No.4 of the Board of Directors of JSC "SSC RIAR" as of December 30, 2008, Joint Stock Company "R.O.S.T. Registrar", being a professional participant of the securities market and carrying out its activities on the basis of License No. 10-000-1-00264 as of December 03, 2002 issued by the Federal Securities Commission of Russia, was approved as a registrar of JSC "SSC RIAR".

Registrar's requisites:
OGRN 1027739216757.
TIN 7726030449.

Short name:	JSC "R.O.S.T. Registrar".
Address:	18/13 Stromynka St., 107996, Moscow.
Tel/fax:	+7 (495) 771-73-36; +7 (495) 771-73-34.
E-mail:	rost@rrost.ru

The date from which the Registrar has maintained the register of issuer's inscribed stock: January 11, 2009.

AUDITOR

The general meeting of the JSC "SSC RIAR" shareholders approved "Financial and Accounting Consultants" Limited Liability Company as an auditor to carry out annual obligatory audit of JSC "SSC RIAR" for the reporting period. "Financial and Accounting Consultants" L.L.C. is a member of the self-regulated organization "Non-Commercial Partnership «Audit Chamber of Russia»".

Address:	44/1, Myasnitskaya St., Moscow, 101990, Russia.
Phone:	+7 (495) 737-53-53.
Fax:	+7 (495) 737-53-47.
E-mail:	fbk@fbk.ru
Web site:	www.fbk.ru

INFORMATION ABOUT STOCKHOLDERS

Stockholders	Legal/ correspondence address	Number of shares		Share in the charter capital, %	
		by December 31, 2011	by December 31, 2012	by December 31, 2011	by December 31, 2012
Joint Stock Company "Atomenergoprom"	24 Bolshaya Ordynka St., 119017, Moscow	2 278 845 584	4 408 245 584	84,1234	81,2201
Russian Federation represented by ROSATOM State Nuclear Energy Corporation	24 Bolshaya Ordynka St., 119017, Moscow	260 553 843	589 200 000	9,6183	10,8558
ROSATOM State Nuclear Energy Corporation	24 Bolshaya Ordynka St., 119017, Moscow	169 531 248	430 085 091	6,2582	7,9241

AUDITING COMMISSION

The auditing commission carries out its activities according to the Regulations on the Auditing Commission at JSC "SSC RIAR" approved by the resolution of the sole stockholder on September 04, 2009. It regulates the procedure for the election of the auditing commission, holding sessions and decision-making, carrying out audits and engagement of expert and consultants, as well as rights and obligations of the commission members.

The following auditing commission was selected at the annual general meeting of the JSC "SSC RIAR" stockholders (protocol No. 7 as of June 29, 2012):

- Evgeny Glinchak;
- Andrey Kladkov;
- Vladimir Shchennikov.

The members of the auditing commission of JSC "SSC RIAR" do not hold shares of the company and made no deals with them in the reporting period.

2.2.

PRODUCTS AND SERVICES

JSC "SSC RIAR" offers the following main products:

- services on performing R&D;
- production and selling of radioisotope products;
- generation, transportation and selling of energy resources in the regional market.

SERVICES ON PERFORMING R&D

The main commercial consumers of R&D are the ROSATOM enterprises – research and design organizations developing materials, fuel and nuclear facility components, the organization owners and the NPP maintenance contractors, as well as some industrial and scientific organizations of other industries and departments, such as:

- ROSATOM State Corporation;
- FSUE "FC NRS" as to the provision of nuclear and radiation safety, extension of reactor facility operation periods;
- JSC "TVEL";
- JSC "«Rosenergoatom» Concern";
- JSC "VNIINM";
- JSC "Afrikantov OKBM";
- JSC "NIKIET";
- JSC "OKB «GIDROPRESS»".

R&D services in the field of production and investigation of fuel and structural materials are also in demand of foreign customers from USA, Korea, Japan, China and France.

PRODUCTION AND SELLING OF RADIOISOTOPE PRODUCTS

The main consumers of radioisotope products include:

- manufacturers of medical radiopharmaceuticals and medical companies, manufacturers of medical equipment;
- education institutions, research institutes to perform examinations with the use of ionizing radiation, for example: National Research Nuclear University "MEPhI", JSC "NIITFA", RSC "Kurchatov Institute", JSC "SNIIP", etc;
- companies producing devices with the use of ionizing radiation (for example, density gages, moisture gages, etc.): JSC "NIITFA", JSC "SNIIP", JSC "EMI", etc.;
- joint enterprises:
  - JSC "Isotope Technologies";
  - Beijing CIAE-RIAR Radioisotope Technology Co., Ltd.

GENERATION, TRANSPORTATION AND SELLING OF ENERGY RESOURCES

The consumers of energy resources, besides the RIAR site, are different industrial companies, population and other consumers of the western part of Dimitrovgrad.

Electricity is supplied to the western part of Dimitrovgrad under the contract with "Dimitrovgrad Utility Company", Ltd.

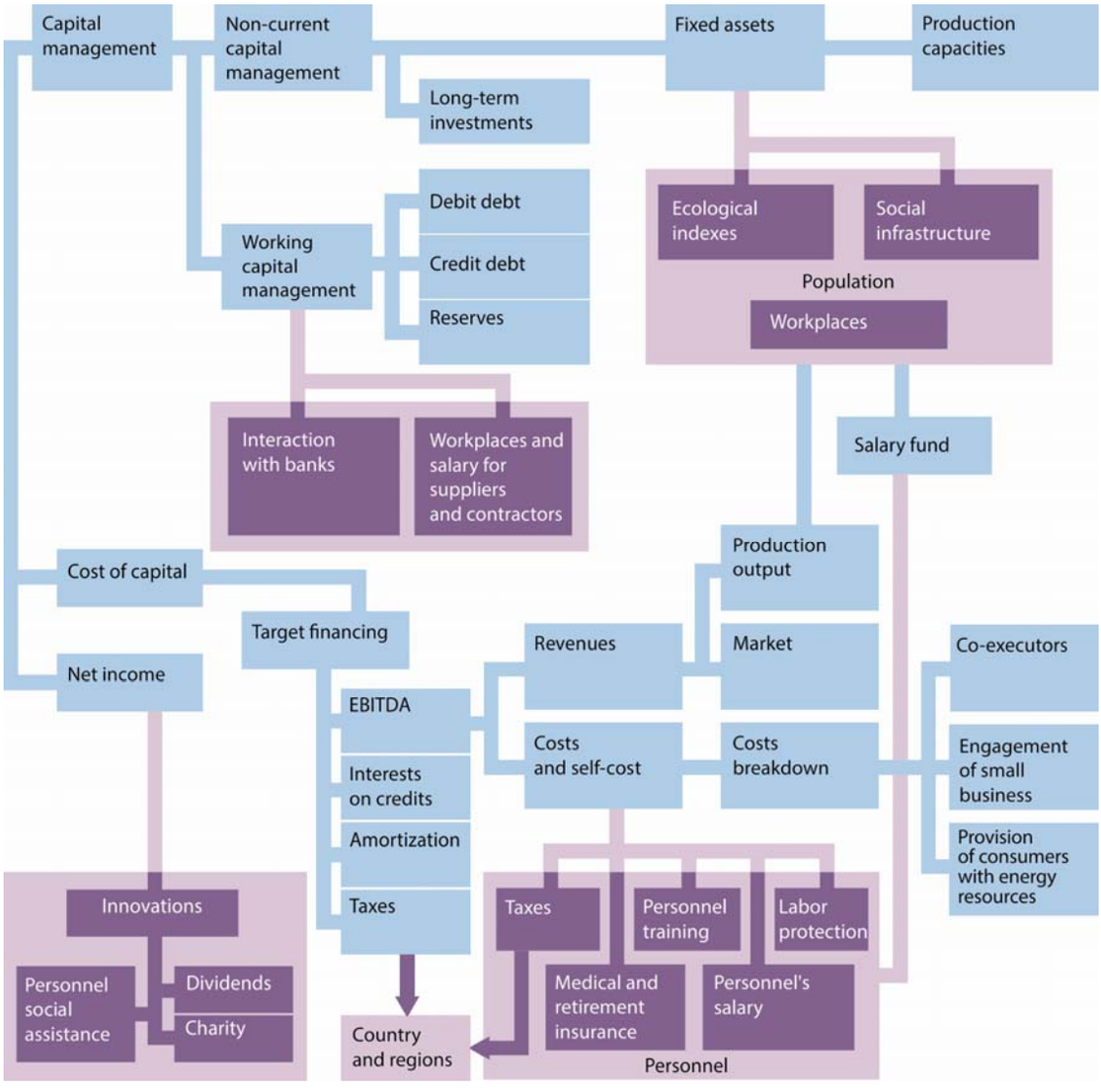
The companies, as well as housing and utilities sector of the western part of Dimitrovgrad, consume all the generated thermal power, 100 % of hot and cold water supply services and water discharge.

JSC "Ulyanovskenergo" is one of the main consumers of electricity.

Value creation system		Value proposal	Clients	
Model of cooperation with partners and suppliers	Value creation chains	Products, services, complex decisions	Promotion channels	Target group of clients
Suppliers of raw and other materials (divisions and companies of ROSATOM)	Developments and research activities		Distribution with involvement of ROSATOM (managing company as an agent)	Divisions and companies of ROSATOM
Other Russian and national suppliers of raw and other materials, equipment	Output of products	R&D services		
	Products supply and services rendering			Other Russian and foreign customers
Other Russian and national suppliers of raw and other materials, equipment	Development of tasks in implementation of joint R&D projects by Partners	Radionuclides production	Individual clients (direct channels)	
	Technology platform	Energy supply services		Utility companies
Partners in R&D development (joint projects)	Innovative technologies in the field of nuclear R&D		Conferences, exhibitions	
Infrastructure		FAs production	Mechanism of interaction with clients	
Engineering infrastructure	Real estate units	Services in social sphere	Direct contacts with partners	
Transport logistics	Information systems			

Financial model					
Costs breakdown		Revenue structure	Financial flows pattern		
Raw and other materials, components	Mastering and preparation of production, maintenance of equipment, engineering infrastructure	Incomings from realization of products, work, services	Incomings from realization of products, work, services to divisions and companies of ROSATOM	JSC "SSC RIAR"	Suppliers (divisions and companies of ROSATOM) of raw and other materials, equipment, services
Basic and extra salaries		Other incomings from business operations and investment activities	Target financing		
Logistics	Services of outside organizations		Incomings from realization of products, work, services to other Russian and foreign customers		Other suppliers of raw and materials, equipment, services

Business model of JSC "SSC RIAR"



Element in the value creation chain of JSC "SSC RIAR"

Element of influence on interested parties

Logical relations in the value creation chain

Channel of influence on interested parties

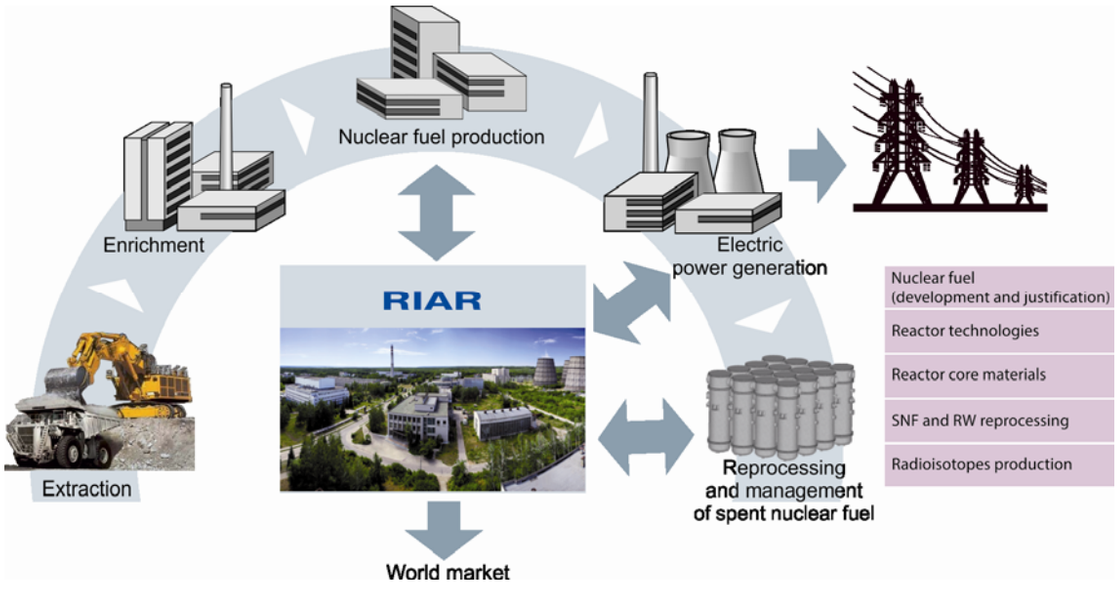
Business scheme of economical, ecological and social influence of JSC "SSC RIAR" on interested parties

2.3.

POSITION OF JSC "SSC RIAR" IN INDUSTRY

The historically developed structure of the Institute incorporating all necessary elements for doing research in the field of nuclear industry has established a base for continuous development. A key purpose of JSC "SSC RIAR" is to carry out R&D and technological work in the field of new technologies and materials for national nuclear power engineering and related industries with the use of in-reactor and out-of-reactor experimental base of the Institute.

Over the last decades, RIAR has achieved the international recognition and success in introduction of high technologies and products for nuclear, scientific and medical applications. The institute develops intensively as a center for reactor research and development of new materials and technologies for nuclear power engineering, including nuclear fuel cycle technologies. Production of radionuclide sources and preparations for medical and industrial purposes is also an important area of activities.



Position of JSC "SSC RIAR" in industry

2.4.

CORPORATE MANAGEMENT

KEY LOCAL REGULATIONS RELATED TO CORPORATE MANAGEMENT

Key local regulations related to corporate management include the following:

1. Charter of JSC "SSC RIAR".
2. Regulations on the JSC "SSC RIAR" Board of Directors.
3. Regulations on the JSC "SSC RIAR" Auditing Commission.
4. Regulations on obligatory information disclosure by JSC "SSC RIAR".

The Code of the Corporate Conduct or any other document of this type is not officially approved by the public, however, JSC "SSC RIAR" provides the stockholders with a possibility to take part in the company management and to get acquainted with the information on its activities in compliance with the Federal Law of the Russian Federation No. 208-FZ as of December 26,1995 "Concerning Joint Stock Companies", Federal Law of the Russian Federation No. 39-FZ as of April 22,1996 "Concerning Securities Market" and laws and regulations of the federal executive body on the securities market.

MANAGING BODIES

According to the Charter, JSC "SSC RIAR" managing bodies are as follows:

- General shareholders meeting;
- Board of Directors;
- Sole executive body.

According to the decision of the general shareholders meeting (protocol No. 5 as of December 01, 2011), the executive body authorities of the company are transferred to the managing company – Joint Stock Company "Science and Innovations".

Managing company JSC "Science and Innovations" was established to coordinate assets and research activities of the institutes incorporated in the Innovations Management Block of ROSATOM.

Requisites of the Company:

OGRN 1117746621211	
Director General:	Nikolay A. Kondratyev.
Legal/mail address:	8/1, Paveletskaya Nab., 115114, Moscow.
Phone:	+7 (499) 558-10-25.
Fax:	+7 (499) 558-10-26.
E-mail:	zaonii@rosatom.ru
Web-site:	http://niirosatom.ru

The auditing commission is a managing body for financial and operational activities of the company.

The general shareholders meeting is a supreme managing body of the company.

In the reporting period, no collective executive body was established at JSC "SSC RIAR".

BOARD OF DIRECTORS

The Board of Directors is a collective managing body assigned with the general management of the company's activities, definition of a development strategy, monitoring of financial and operational activities and sole executive body of the company. The Board of Directors takes the central place in the corporate management system.

The Board of Directors of JSC "SSC RIAR" works in compliance with its competence specified by the Federal Law of the Russian Federation No. 208-FZ as of December 26,1995 "Concerning Joint Stock Companies", the Charter of JSC "SSC RIAR" and the Regulations on the JSC "SSC RIAR" Board of Directors.

Members of the Board of Directors of JSC "SSC RIAR" do not own the company stocks and made no transactions with them in the reporting period.

The Board of Directors has no committees.

Nowadays the company pays no bonuses to the members of the Board of Directors.

MEMBERS OF BOARD OF DIRECTORS

The following Board of Directors elected by the special general shareholders meeting (protocol No.4 dated September 26, 2011) acted from September 26, 2011 to June 29, 2012:

- Nikolay V. Arkhangelsky;
- Valery N. Vanyukov;
- Sergey A. Pastukhov;
- Vyacheslav A. Pershukov;
- Vladimir M.Troyanov.

Vyacheslav A. Pershukov was elected the Chairman of the above-mentioned Board of Directors.

The following Board of Directors elected by the annual general shareholders meeting (protocol No.7 dated June 29, 2012) acted from June 29, 2012 to December 31, 2012:

- Nikolay V. Arkhangelsky;
- Nikolay A. Kondratiev;
- Sergey A. Pastukhov;
- Vyacheslav A. Pershukov;
- Vladimir M.Troyanov.

Vyacheslav A. Pershukov was elected the Chairman of the above-mentioned Board of Directors.

DATA ON BOARD OF DIRECTORS MEMBERS AT JSC "SSC RIAR"

Nikolay V. ARKHANGELSKY

Date of birth: November 22, 1945.

Education: high, 1970 – graduation from Moscow Engineering Physics Institute with a specialty "Nuclear Power Facilities".

Employment and positions over the last 5 years:

- Federal Nuclear Energy Agency: Feb. 2004 – June 2008 – Head of Department, Deputy Head of Office.
- JSC "Atomenergoprom": June 2008 – Feb. 2010 – Head of Department.
- ROSATOM: March 2010 – May 2011 – Advisor to Department; May 2011 – July 2011 – Advisor to Directorate for Research and Engineering; since Aug. 2011 up to now – Advisor to the Innovations Management Block.

Nikolay A. KONDRATIEV

Date of birth: October 19, 1960.

Education: high, 1982 – graduation from Tomsk Polytechnic Institute with a specialty "Engineering Electronics".

Employment and positions over the last 5 years:

- JSC "NK "Rosneft" – Research and Technology Center": Feb. 2006 - Oct. 2011 – Director General.
- ROSATOM: Aug. 2011 – Nov. 2011 – First Deputy Head of the Innovations Management Block.
- JSC "Science and Innovations": since Nov. 2011 up to now – Director General.

Sergey A. PASTUKHOV

Date of birth: April 28, 1959.

Education: high, 1982 – graduation from Moscow State University with a specialty "Physics".

Employment and positions over the last 5 years:

- GeoMin Management, LLC: Sep. 2007 – March 2008 – Director General.
- JSC "AO «Quorum»": Sep. 2008 – Feb. 2011 – Director General.
- ROSATOM: May 2011 – Nov. 2011 – Advisor to Directorate for Research and Engineering.
- JSC "Science and Innovations": since Nov. 2011 up to now – Deputy Director General, General Administration.

Vyacheslav A. PERSHUKOV

Date of birth: May 20, 1958.

Education: high, 1980 – graduation from Moscow State University with a specialty "Mechanics".

Employment and positions over the last 5 years:

- Representative office of "Alltech Investments Limited" in the Russian Federation: March 2006 – Jan. 2011 – Senior Project Manager of the Business Department.
- SN-Neftegas, LLC: April 2008 – Jan. 2011 – Director General.
- ROSATOM: Jan. 2011 – April 2011 – First Deputy Director of the Directorate for Research and Engineering; April 2011 – June 2011 – Deputy Director General – Director of the Directorate for Research and Engineering; since 06.2011 up to now – Deputy Director General – Director of the Innovations Management Block.

Vladimir M. TROYANOV

Date of birth: February 11, 1956.

Education: high, 1979 – graduation from Moscow Engineering Physics Institute with a specialty "Nuclear Power Plants and Facilities".

Employment and positions over the last 5 years:

- JSC "TVEL": 2004 – June 2009 – Executive Director.
- JSC "VNIINM": June 2009 – Jan. 2011 – First Deputy Director.
- JSC "SSC RIAR": Feb. 2011 – Dec. 2011 – Director.
- JSC "Science and Innovations": Dec. 2011 – Aug. 2012 – Director.
- Private company of ROSATOM "Innovation and Technology Center of the BREAKTHROUGH Project": since Aug. 2012 up to now – Chief Process Engineer.

TOP MANAGEMENT MOTIVATION

The motivation system for top management and other directors is based on the ROSATOM Unified Compensation System. The salary of directors consists of a fixed component and annual bonus the amount of which depends on the key performance indicators. The KPI system is directed on the increase of efficiency to achieve strategic objectives of the Institute by setting tasks to directors and employees and providing their interrelations with the company's purposes. KPI are developed based on a government policy in the field of the nuclear energy use, competitive conditions of the company operation, strategy and programs of development of JSC "SSC RIAR" and provide economic, ecological and social effectiveness.

DETERMINATION CRITERIA AND AMOUNT OF REMUNERATION OF SOLE EXECUTIVE BODY

According to the resolution of the general shareholders meeting (protocol No. 5 as of December 01, 2011), authorities of the executive body of the company are delegated to the managing company – Joint Stock Company "Science and Innovations". Determination criteria and amount of remuneration of the sole executive body are defined by the Agreement on the delegation of authorities of the sole executive body No. 20 as of December 02, 2012 according to which the company pays to the managing company the cost of services related to the execution of the functions of the sole executive body that makes up 3% of selling goods, performing work and rendering services by the company for the corresponding period.

PAYMENT OF DECLARED (ATTRIBUTED) DIVIDENDS TO SHARES OF JSC "SSC RIAR"

Dividends to the shares of JSC "SSC RIAR" were not attributed and paid in the reporting period.

KEY DECISIONS OF BOARD OF DIRECTORS IN 2012

In 2012, 29 meetings of the Board of Directors in the form of absentee voting were held where 60 questions were considered. During the meetings of the Board of Directors the decisions on key activities of JSC "SSC RIAR" were made:

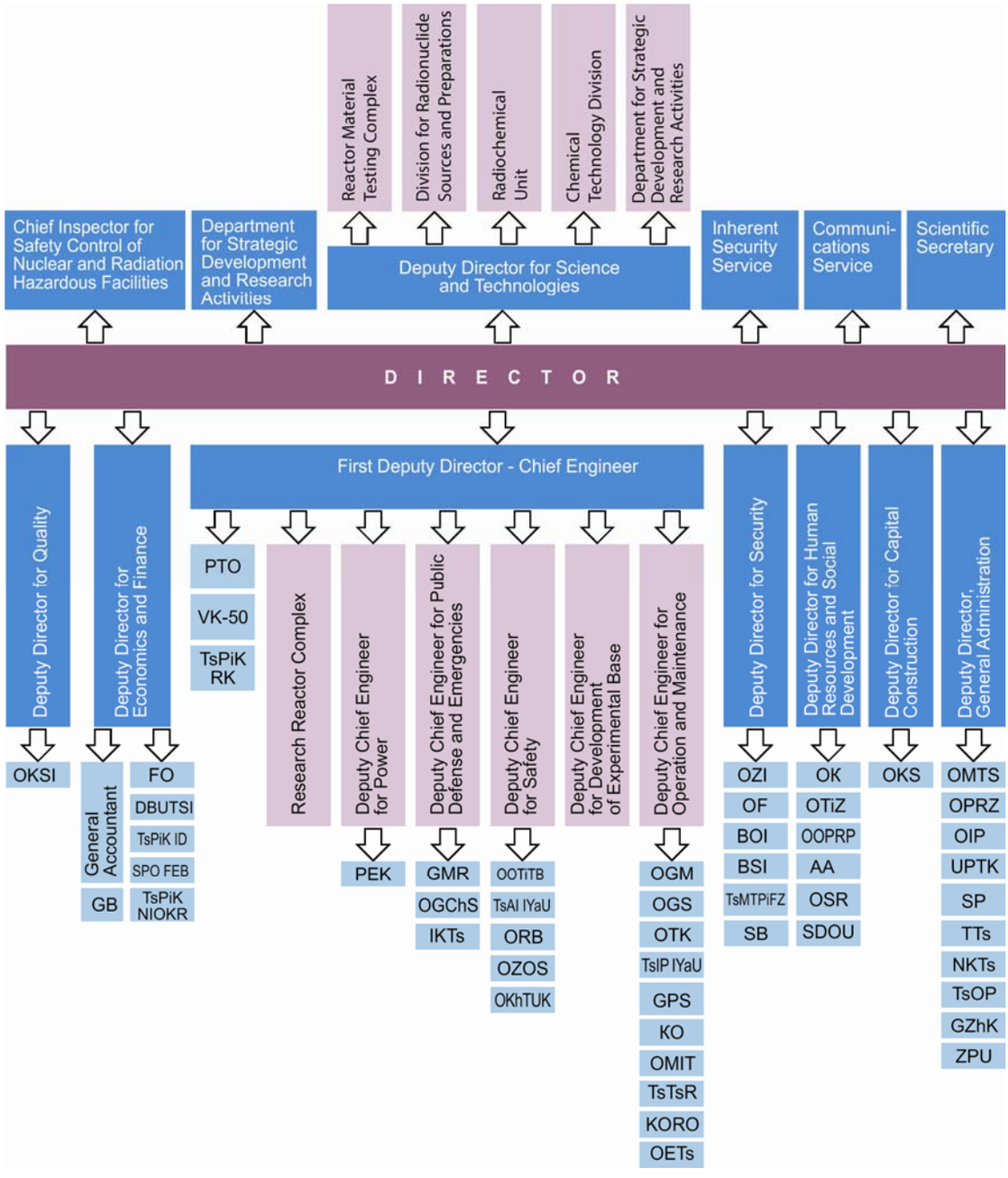
- the meeting of the Board of Directors preceding the annual general shareholders meeting of JSC "SSC RIAR" was held in accordance with the established procedure;
- the general shareholders meeting of JSC "SSC RIAR" was offered to increase the authorized capital of the company by placement of additional common registered stocks in the amount of 2 718 600 000 pcs.;
- the decision on participation of JSC "SSC RIAR" in "RIAR – GENERATION, Ltd." was made.

2.5.

ORGANIZATION STRUCTURE OF JSC "SSC RIAR"

Organization chart of JSC "SSC RIAR" was approved by the decision of the Board of Directors of JSC "SSC RIAR" (protocol No. 43 as of March 24, 2011) and carried into effect by the Decree of the Director of JSC "SSC RIAR" No. 243 as of March 25, 2011.

Full names of the Institute departments given in the organization chart are presented in Appendix 6.1.



Organization chart of JSC "SSC RIAR"

2.6.

JSC "SSC RIAR" STRATEGY AND ITS IMPLEMENTATION

On November 24, 2011 the ROSATOM management body approved The Strategy of ROSATOM Activities till 2030 year based on the following five principles:

- orientation towards results;
- efficiency;
- complexity;
- transparency;
- legitimacy.

Achievement of global technological leadership in nuclear industry remains a target goal of the Strategy implementation in 2012.

The Strategy, beside five strategic goals to develop the Russian civil nuclear industry, provides for eight strategic initiatives as a mechanism to achieve the goals:

- maintenance of global leadership at the beginning of nuclear fuel cycle;
- increase of nuclear generation share in the RF energy balance;
- global expansion of the VVER technological platform;
- formation of a stable energy machine manufacturing company of a sufficient scale;
- selling of electric power;
- global leadership at the backend of nuclear power engineering;
- closure of nuclear fuel cycle based on fast neutron reactors;
- formation of the third core of ROSATOM's business in the field of radiation management.

Strategic goals of civil nuclear industry:

- effective supply of the Russian economy with the NPP generated electric power;
- comprehensive solution of accumulated "nuclear heritage" problems and nuclear and radiation safety assurance;
- strengthening the innovative potential of future development of Russian nuclear technologies and widening the area of their application;
- strengthening positions of global participant in the world market of nuclear technologies and services;
- providing implementation of state priorities in the fulfillment of state authorities by ROSATOM in the set sphere of activities.

Strategic initiative is a set of interrelated project activities that significantly influence a change in the market position and competitiveness of ROSATOM in general and require several business directions.

JSC “SSC RIAR” plays an important role in the Strategy implementation by the research and engineering center the main purpose of which is the performance of R&D using reactor and out-of-reactor base that allows the up-to-date solution of the most complex research and engineering tasks for nuclear industry and related economies.

TOP PRIORITY AREAS OF ACTIVITIES

The key decisions that defined the main areas of the JSC “SSC RIAR” medium- and long-term activities were taken by the Board of Directors and the top management of the industry sector and supported at the federal level: JSC “SSC RIAR” started to implement projects within the Federal Target Program "Nuclear Power Technologies of New Generation for the Period 2010-2015 and until 2020" directed towards solution of the strategic tasks of development of the industry sector and the Institute, such as:

- establishment of the multi-purpose fast research reactor (MBIR);
- technical upgrading of fast test reactor BOR-60;
- development of technologies and establishment of mixed oxide fuel (MOX fuel) production for fast neutron reactors;
- establishment of a poly-functional radiochemical research complex;
- development and justification of engineering and design solutions of the industrial adjacent-to-the-reactor module to reprocess spent fast reactor fuel.

Projects are directed towards establishment of a new generation experimental research base at the site of JSC “SSC RIAR” to ensure development of new nuclear power technologies based on fast neutron reactors with the closed nuclear fuel cycle for nuclear power plants that fill the demands of the country in energy resources and increase efficiency of use of natural uranium and spent nuclear fuel.

PROSPECTS OF DEVELOPMENT

Taking into account the plans to develop the nuclear industry in the Russian Federation, the main purpose of JSC "SSC RIAR" can be formulated as follows: research and engineering support for the formation of a new technological platform of nuclear power engineering. Implementation of the main purpose imposes certain requirements on the Institute that define its desirable target: the Institute must have research and engineering, personnel and organizational potential that will allow the effective solution of all problems set by the industry sector.

The current status of the Institute and accepted strategy of the nuclear industry development require a solution of tasks on the development of the JSC "SSC RIAR" potential that define strategic goals of the Institute:

- development of experimental research and technological base;
- development and improvement of efficiency of radionuclide-related area of activities;
- infrastructure development (management of spent nuclear fuel and radioactive wastes, physical protection, engineering infrastructure);
- establishment of the International Accredited Test Center to carry out reactor tests and material science research and manage spent nuclear fuel;
- upgrading of the complex to produce experimental fuel, other materials and core elements.

Development of the Institute is closely related to participation in the solution of strategic tasks of the industry sector. Together with the other ROSATOM enterprises, the Institute actively conducts the work directed towards the achievement of the objectives defined in The Strategy of ROSATOM Activities till 2030 year. Projects on the creation of a modern experimental base implemented by JSC "SSC RIAR" within the Federal Target Program "Nuclear Power Technologies of New Generation for the Period 2010-2015 and until 2020" provide an additional impulse to development and open opportunities for widening a range of research activities conducted at the Institute.

The new research reactor MBIR, re-organized and upgraded research complexes of the Institute, refurbished engineering infrastructure create opportunities for engagement of not only Russian, but also foreign researchers to the Institute. At the session of the IAEA General Conference, the ROSATOM Director General declared an intention to establish the International Center of Excellence (with the unique expensive equipment) in JSC "SSC RIAR" on the basis of the MBIR research reactor that is under construction now and the work in this area is actively conducted.

The sphere of mutual interests of RIAR, town and region is extending. To attract young employees to JSC "SSC RIAR", as well as to increase the interest of foreign experts to the Institute, it is necessary to improve a level of living in Dimitrovgrad and its availability to residents of other regions and countries. The nuclear and innovative cluster created in the town can soon solve all these problems. The cluster development program provides the formation of a comfortable urban environment attractive to the youth in Dimitrovgrad, development of the transport infrastructure capable to facilitate visits to Dimitrovgrad for residents of the neighboring large cities, the capital of Russia, as well as for foreign partners. Implementation of the program will also provide the growth of competitiveness of Dimitrovgrad, Ulyanovsk region and Russia. It will take place due to the development and deployment of innovative nuclear technologies, including those in medical radiology and nanomaterials science, ensuring a significant growth of the high added value products (work, services) output.

2.7.

RISK MANAGEMENT

RISK MANAGEMENT POLICY OF JSC "SSC RIAR"

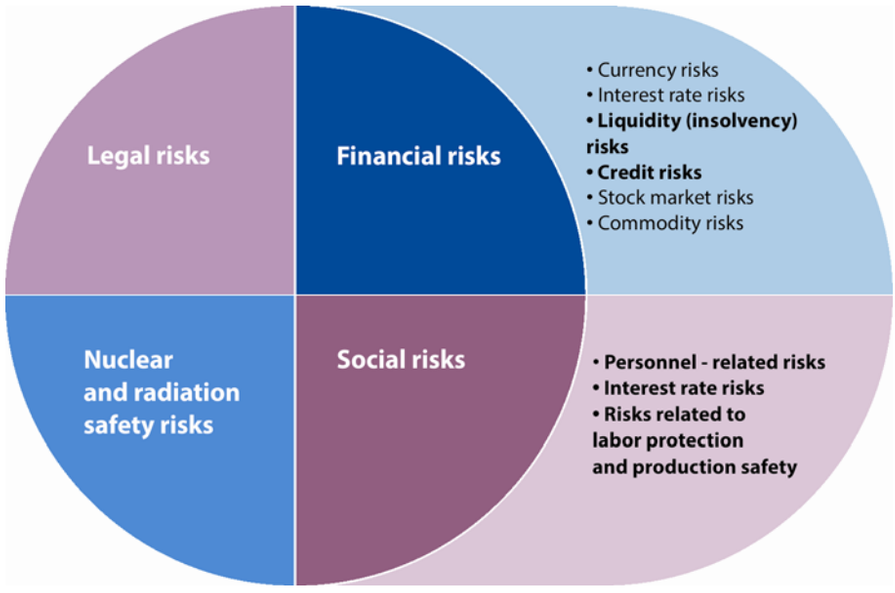
Creation of an effective risk management system and internal control system is an important task for the Institute. The risk management policy is based on the principles and methods of risk management described in the corporate risk management system, including the main processes given in the figure below.

Risk management

These activities are aimed at timely identification of the events capable to negatively affect the achievement of objectives and at application of adequate responses to them.

For each of the identified risks the assessment of existing measures for risk minimization is carried out, including procedures of internal control, and their sufficiency for deduction of a residual risk level. For neutralization of some risks, the protection measures related to implementation of the production program are taken, and possible algorithms of actions are developed upon incurrence of this or that risk.

Risk management is carried out and supervised in the Institute divisions within their area of responsibilities.



Main risk factors

Dynamics relative to the previous period	Risks and growth factors	Long-term forecast
Failure of some projects due to the events in Japan	International political and regular risk - rejection of the project implemented by the Institute by the partners	Increase of a number of international contacts
Increase of financing for RW and SNF related work due to entry into force of legislative acts	Risk of financing shortage for nuclear legacy related activities	**Probable shortage of funds for RW related activities**
Probable reduction of government financing in 2013-2015 is assessed as maximal	Risk of government financing reduction	Growth of a possibility of reduction of government financing in 2015-2017

Dynamics of risks in 2012 relative to the previous period and long-term forecast

Effect level of key risk factors

Risk factor		Effect level	
		Significant	Insignificant
Financial risks	Currency risks		✓
	Interest rate risks		✓
	Liquidity risks	✓	
	Credit risks	✓	
	Stock market risks		✓
	Commodity risks		✓
Legal risks			✓
Social risks	Personnel related risks	✓	
	Risks related to labor protection and production safety	✓	
Nuclear and radiation safety risks		✓	

FINANCIAL RISKS

CURRENCY RISKS – RISKS RELATED TO CURRENCY FLUCTUATIONS

JSC "SSC RIAR" carries out its key economic activities within the territory of the Russian Federation. It has no investments in foreign companies the net asset value of which is subject to a risk of exchange rates change. Risks related to currency fluctuations aren't considerable factors that directly effect the results of financial and economic activities. No hedging is carried out to decrease adverse effects of changes in interest rates and foreign currency exchange rates. The main sphere where this risk can show up is export and import activities of the Institute.

INTEREST RATE RISKS – RISKS RELATED TO CHANGES IN INTEREST RATES, CURRENCY EXCHANGE RATES AND INFLATION

These risks tend to increase, but their value can't have a critical effect on the financial indicators of JSC "SSC RIAR". Minimization of this risk in conclusion of loan contracts is provided by the determination of a fixed interest rate on the long-term credits. Continuous monitoring of interest rates in base banks is also carried out.

LIQUIDITY (INSOLVENCY) RISKS

Liquidity risks have no significant effect on the activities of JSC "SSC RIAR" related to implementation of the focused and continuous policy of the risks management, including monitoring of the Institute liquidity (analysis of a payment calendar) on a regular basis.

CREDIT RISKS – RISKS RELATED TO NON-FULFILLMENT OF FINANCIAL LIABILITIES BY CONTRACTORS

The main consumers of R&D and products produced by JSC "SSC RIAR" are the ROSATOM enterprises. It considerably reduces a credit risk of the Institute having a high degree of reliability and solvency.

STOCK MARKET RISKS

Taking into account that one of the priorities for JSC "SSC RIAR" at the increase of the business value is the provision of global expansion of ROSATOM, JSC "SSC RIAR" implements a number of investment projects. It contributes to occurrence at the Institute of stock market risks the management of which is exercised at the level of identification, classification, monitoring and preliminary estimate of such risks. Introduction of insurance against risks of responsibility of top managers (Directors & Officers Liability Insurance) is considered as possible and necessary.

COMMODITY RISKS

Stable positions of JSC "SSC RIAR" in the market are mainly provided by a long-term tendency towards the increase in demand for R&D and products of JSC "SSC RIAR" in the world sales market guaranteed by current and future demands of the global nuclear power engineering.

LEGAL RISKS

JSC "SSC RIAR" carries out its activities observing the norms and taking into account the changes in the current Russian legislation.

For this purpose, JSC "SSC RIAR" performs continuous monitoring of changes in the current legislation of the Russian Federation and jurisdictions of its presence in the sphere of the nuclear energy use, marketing, export control and nonproliferation of mass destruction weapons. It also observes all related recommendations of supervisors and regulators at the international and national levels. All signed contracts are obligatorily concurred with the legal service of RIAR, and in some cases independent consultants are engaged.

SOCIAL RISKS

PERSONNEL RELATED RISKS

One of the key resources of the Institute is personnel. If to consider ambitious plans of development of the nuclear industry and medium-term plans of JSC "SSC RIAR", a shortcoming of employees with sufficient qualifications or impossibility to concentrate them for implementation of new projects, including innovative ones, can make a negative effect on the achievement of strategic objectives by JSC "SSC RIAR". A number of factors of the personnel risk is out of an area of influence of the Institute (for example, decrease in a number of graduates from schools and higher education institutions and, respectively, a number of young specialists; position of the company in the single-industry town when there are serious restrictions in adoption of necessary personnel decisions, etc.).

Risk reduction activities

Results of the key activities of JSC "SSC RIAR" depend on the relations of the Institute management with its employees. Deterioration of these relations, as well as any restrictions set by the legislation in the sphere of employment, can have a negative effect on the Institute development. To provide normal working relations in JSC "SSC RIAR", a collective agreement with labor unions is concluded and periodically revised.

JSC "SSC RIAR" conducts monitoring of the risk factors influence and accounts them in the programs related to health care, motherhood and childhood support, organization of leisure and recreation activities of the employees, social support of the retired employees and the staff of the Institute, personnel retraining and professional development.

Key social and personnel programs of JSC "SSC RIAR" include the following:

- housing improvements of employees (compensation for house renting);
- voluntary (additional) medical insurance against accidents and diseases;
- health improvement for children of employees;
- support for long-service ex-employees;
- cultural and sporting events;
- work with young specialists;
- financial support to employees, including force majeur circumstances, child birth, medical treatment and buying of medicine, burials, as well as to multi-child families;
- introduction of a motivation system with an individual assessment of the personnel efficiency;
- preparation and professional development of young specialists in profession-oriented specialties;
- professional development of the personnel.

Satisfaction of the personnel is traced by carrying out opinion polls. The results related to human resources management are presented in Section "Personnel Management and Social Policy" of Chapter 4 "Sustainable Development Results".

RISKS RELATED TO LABOR PROTECTION AND PRODUCTION SAFETY

Specificity of the activities of JSC "SSC RIAR" assumes operation of hazardous facilities that if handled incorrectly can do serious harm to the health of the employees, population of nearby settlements and environment.

Though the Institute takes measures on labor protection, production safety and environment protection, due to impossibility of exact forecasting of the quantity of expenses and scope of responsibility for personal injury, wrong against the public and environmental harm, it can't be guaranteed that these measures will be enough for covering financial claims to the company in the future.

Risk reduction activities

To solve the tasks related to labor protection, i.e. sustaining of life, health and human performance in the course of work, safety of production processes and equipment, prevention of industrial injury and occupational diseases, improvement of working conditions and labor protection of the employees, JSC "SSC RIAR" has developed the occupational health and safety management system.

This occupational health and safety management system represents a set of elements interconnected or interacting among themselves that determine a policy and purposes related to labor protection, procedures of their achievement in the field of identification, assessment and reduction of risk.

The occupational health and safety management system of JSC "SSC RIAR" defines the functions and tasks of the Institute and its structural divisions in the field of labor protection of the employees, scope of work on implementation of these functions and tasks, interaction among structural divisions, as well as duties and responsibility of top managers, experts and workers.

NUCLEAR AND RADIATION SAFETY RISKS

Minimization of technological risks related to nuclear facilities operation is provided by taking special preventive actions as well as for risk occurrence, including:

- implementation of the process equipment upgrading programs at the Institute;
- compliance to current standards in engineering and manufacturing processes, operation of research nuclear facilities, storage of nuclear and radioactive materials radioactive waste management.

Provision of trouble-free, safe and stable operation of nuclear and radiation dangerous facilities of JSC "SSC RIAR" is the main condition for the Institute activities. Status monitoring is systematically carried out at JSC "SSC RIAR" and engineering actions to ensure trouble-free operation of research nuclear facilities and nuclear hazardous areas is carried out, operation is performed with the observance of norms and changes in the existing Russian legislation. In 2012, the work in the nuclear hazardous areas of JSC "SSC RIAR", as well as operation of research nuclear facilities was conducted without accidents.

For the purpose of management of radiation risks of the population and personnel connected with the operation of nuclear facilities located at the RIAR site, the radiation safety assurance system is developed and used at JSC "SSC RIAR". Its functioning is carried out according to the current laws and regulations of the Russian

Federation, health regulations, standards, specifications, rules, instructions and other documents in the following main areas:

- radiation monitoring of internal and external irradiation of the personnel at JSC "SSC RIAR" performed according to NRB-99/2009, OSPORB 99/2010, methodology instructions MU 2.6.1.16-2000;
- monitoring of radioactive substances release into the atmosphere carried out according to the Regulations on monitoring of radioactive substances release in JSC "SSC RIAR" with obligatory observance of allowable release standards;
- maintenance of special reaction forces in readiness for prevention, localization and elimination of consequences of possible accidents and emergency situations in JSC "SSC RIAR" for the purpose of which there are controls and control centers, communication and notification systems, emergency reaction forces and means, reserves of material and financial resources.

In 2012, the main radiation dose limits for the personnel were not exceeded and standards of radioactive substances release into the atmosphere were observed. It confirms a satisfactory condition of radiation safety achieved at the Institute.

A report containing data on individual and collective doses of external and internal radiation of the personnel and population, results of monitoring of radioactive substances release into the atmosphere, as well as other data is issued annually. Based on the results of the report, actions to improve the radiation safety system are developed.

Indicators of the radiation environment in the area of JSC "SSC RIAR" don't exceed the values of the similar indicators for the similar radiation hazardous facilities located within the territory of the Upper Volga region: FSUE "RFNC VNIIEF" (Sarov, Nizhny Novgorod region); JSC "Afrikantov Experimental Design Bureau" (Nizhny Novgorod); FSUE "RosRAO" (Nizhny Novgorod region); JSC "ChMZ" (Glazov, Udmurt Republic). It is confirmed by the data from the annual report "Radiation Situation on the Territory of Russia and Neighboring States".

INSURANCE

A number of insurance contracts were signed in the reporting period to provide continuous operation and obtain the necessary licenses related to operation of nuclear power facilities at the Institute:

- compulsory civil liability insurance:
  - of vehicle owners – OSAGO (234 vehicles);
  - of the transport carrier for personal injury and damage to property of passengers;
- public liability insurance:
  - against third parties in transportation of radioactive substances, nuclear materials and wastes;
  - of operators and owners of hydraulic engineering structures;
  - of operators of hazardous production facilities for personal injury and damage to property of third parties, environmental harm as a result of accident at a hazardous production facility;
  - operators - nuclear power facilities;
  - in case of doing harm due to insufficiency of work that influence safety of capital construction facilities (to obtain a work permission certificate from self-regulated companies "Soyuzatomstroy" and "Soyuzatomproject");
  - of vehicle owners within the International Green Card System;
  - in case of damage, theft or hijacking of a transport vehicle – KASKO (one vehicle);
- third party liability insurance in transportation of hazardous cargo;
- accident insurance.

These contracts allow to fully cover all losses upon occurrence of the insured event related to operation of the nuclear and radiation hazardous facilities at the JSC "SSC RIAR" territory.

3 RESULTS OF KEY ACTIVITIES

PUBLIC
ANNUAL REPORT
2012
OF STATE SCIENTIFIC CENTER –
RESEARCH INSTITUTE
OF ATOMIC REACTORS

3.1.

RESULTS OF FINANCIAL AND ECONOMIC ACTIVITIES

Financial and economical indicators

Indicator	Indicator value per years		
	2010	2011	2012
Revenue (sales revenue, financial investment revenues and asset sale revenue), mln RUR	3 116.0	3 303.0	4 926.8
Operating costs, mln RUR	1 842.2	2 303.8	3 455.4
Wage and other payments, allowances for employees, mln RUR	897.9	1 125.2	1 365.0
Payments to capital suppliers, mln RUR	72.0	84.0	117.0
Gross fiscal charges, mln RUR	255.0	387.0	403.0
Investments to associations, mln RUR	49.8	75.1	80.1
Revenue (sales volume (activities, services)), mln RUR	3 018.3	3 120.9	4 458.8
Labor efficiency, mln RUR/man	0.65	0.661	0.928
Self-efficiency (added value), %	48.2	42.9	31.4
Equity funds vs. outside funds, rel. unit	0.76	0.92	1.17
Essential funds received from the State, mln RUR	24.5	74.5	85.6
Essential funds received from the State vs. equity funds from sales (activities, services), rel. units	0.008	0.024	0.019
Amount of finance aimed at investment policy, mln RUR	650.6	1 586.2	1 386.3
Share of funds aimed at the upgrading of engineering and production base, %	78.1	83.8	92.1
Capital investments into production capacities, mln RUR	507.8	1 329.9	1 276.7
Hi tech products sales revenue, mln RUR	2 218.4	2 162.0	3 500.9
Share of funds from hi tech products sales, %	73.5	69.3	78.5
Expenditures for R&D, mln RUR	–	69	80
Cost of intellectual property items, mln RUR	0.476	0.424	0.444
Investments to research infrastructure, mln RUR	105.7	268.8	153

JSC "SSC RIAR" activities in the year of 2012 were aimed at solving important strategic tasks set by ROSATOM. A significant increase of revenue resulted from the implementation of the Federal Target Program "Nuclear Power Technologies of New Generation for the Period 2010–2015 and until 2020", where RIAR is the key executor of the following projects:

- multi-purpose fast test reactor MBIR;
- poly-functional radiochemical research complex;
- development and justification of design options for industry-scale reactor-adjacent module to reprocess fast reactor spent fuel.

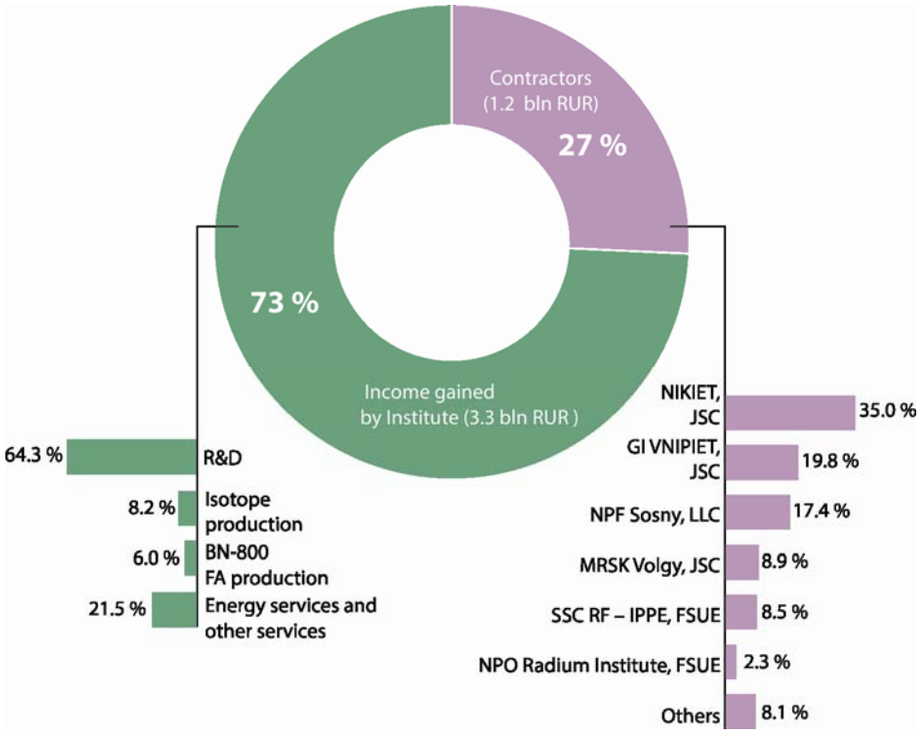
In 2012, the sales revenue made up 4 459 mln RUR that is 42.9 % higher as compared to 2011.

The geographical segment of the output sold preserves a steady tendency and shows the most stable growth of demand among the domestic customers.

Distribution of revenue per geographical segments and activity trends, mln RUR

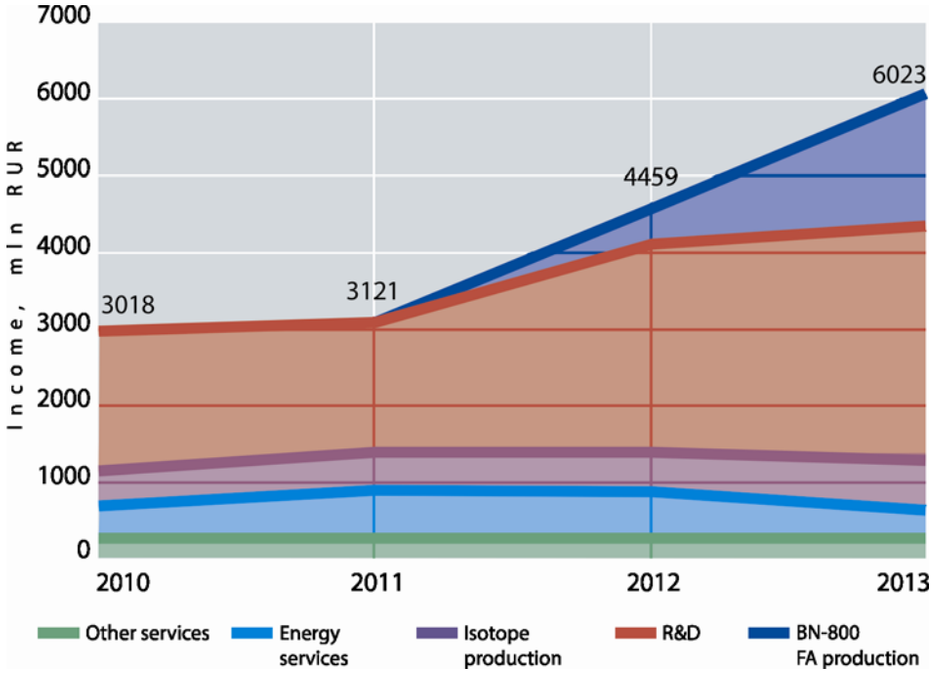
Indicator	Indicator values per year		
	2010	2011	2012
Revenue (sold output, activities, services)	**3 018**	**3 121**	**4 459**
Including Internal turnover	1 043	848	1 222
Distribution by geographical segments:			
Russian Federation	2 695	2 802	4 127
CIS	11	27	35
Non-CIS States	313	292	296
Distribution by activity trends:			
Fabrication of FAs for reactor BN-800	0	0	270
R&D	1 886	1 774	2 867
Isotopes production	332	372	364
Energy services	619	829	799
Other services	181	146	159

In 2012 the bulk of revenue was received from R&D activities and made up 64.3 % from the total revenue: radionuclides production – 8.2 %, energy and other services – 21.5 %, fabrication of FAs for reactor BN-800 – 6 %. A fraction of activities done through subcontractors made up about 27 % from the total revenue of JSC "SSC RIAR" in 2012.

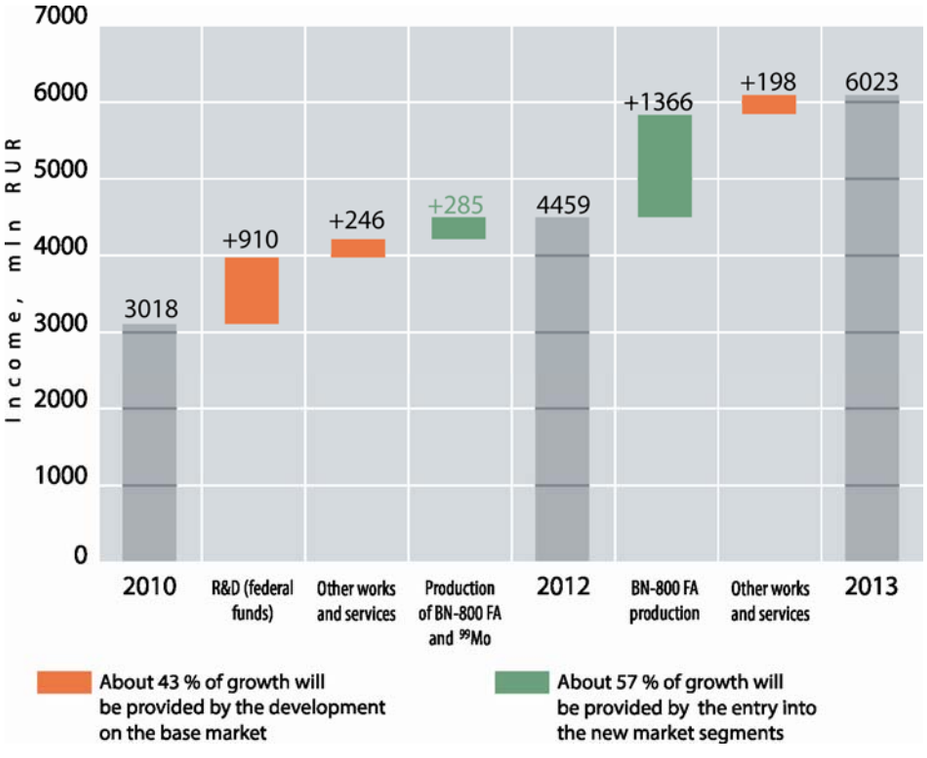


Structure of revenue in 2012 and fractions of key co-executors

The revenue growth in the reporting period also resulted from the R&D activities. There are several reasons for such growth: increase of funding under the Federal Target Program "Nuclear Power Technologies of New Generation for the Period 2010–2015 and until 2020", commencement of innovative production and entry to market segments. Speaking about the dynamics of development, it should be mentioned that about 43 % of the revenue growth in 2013 (as compared to 2010) will be provided by the development at the existing markets and 57 % – by entry to new ones.



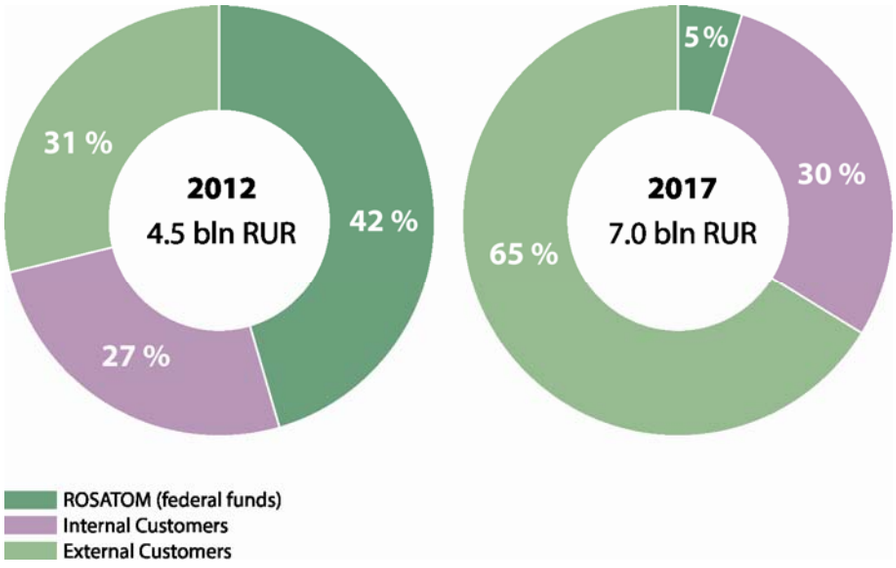
Dynamics and structure of JSC "SSC RIAR" revenue for 2010–2013*



Factors of JSC "SSC RIAR" revenue growth for 2010–2013*

* Data for 2013 are prognosticative.

In the long-term period, JSC "SSC RIAR" plans to develop activities due to the increase of the innovative production and entry to new market segments. By 2017, about 65 % of all activities will be performed through customers outside ROSATOM.



Distribution of sales revenue per customers

Tax structure

Addressee	Tax	Payments, thousand RUR
Federal budget	Income tax	858
	Water tax	1 176
	Total	**2 034**
Local budget	Income tax	7 725
	Transport tax	1 486
	Total	**9 211**
Municipal budget	Land tax	158
	Total	**158**
Off-budget funds	Payments to Social Insurance Fund	36 740
	Payments to PAYG component	256 329
	Payments to FCMIF	64 585
	Payments to funded component of a retirement pension	31 282
	Payments to FIF related to industrial accidents	2 702
	Total	**391 638**
Total taxes		**11 403**
Total insurance deduction		**391 638**
Total payments		**403 041**

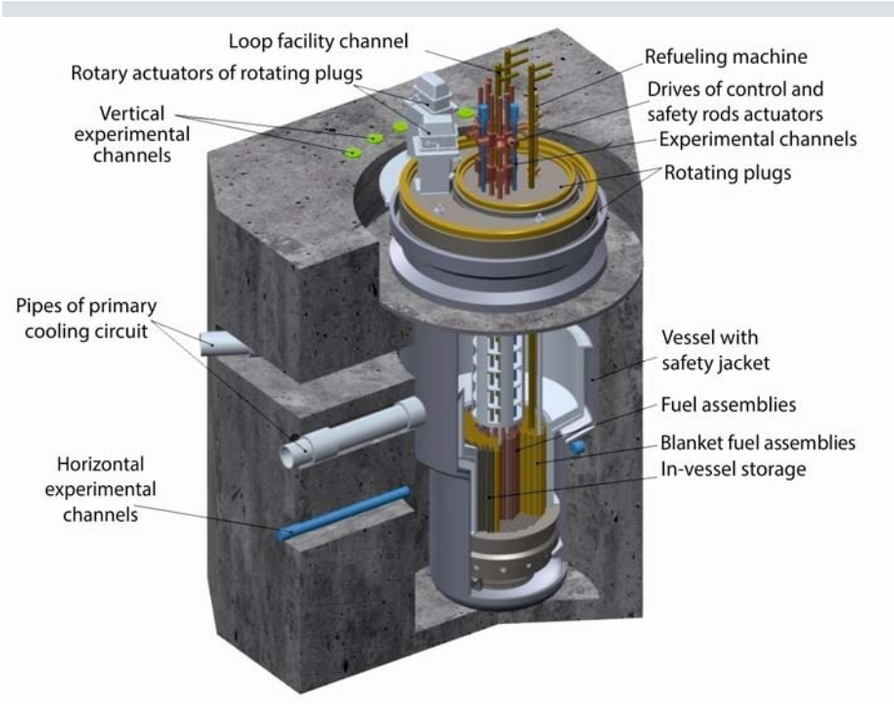
3.2.
RESULTS OF PRODUCTION ACTIVITIES

INNOVATIVE PROJECTS OF JSC "SSC RIAR"

MULTI-PURPOSE FAST TEST REACTOR MBIR

Reactor MBIR – a multi-purpose fast test reactor with a wide ionizing spectrum – is indented for the following activities:

- provision of experimental research and design activities on the development of new generation nuclear power facilities;
- try-out of fuel cycle back-end technologies and radwaste disposal;
- comprehensive material science studies, including development of new structural materials and absorbers;
- experiments using neutron and other types of emission for fundamental research;
- practical application of reactor emission to accumulate radio-isotopes and change physical and mechanical properties of materials; medical-purpose application.



Reactor MBIR

Reactor MBIR will have a fast neuron spectrum allowing R&D to be performed for the purpose of justification of the majority of design solutions provided by the Strategy of Russia's Nuclear Power Engineering Development for the Period until 2050.

The new test reactor will have several isolated loops cooled autonomously, instrumented core cells and several cells for in-pile material tests. MBIR, being a multi-purpose reactor, will allow material science tests; research in reactor physics and safety; tests of new core components, control and diagnostic devices; production of unique radioisotopes, etc. Only this test reactor will provide tests for both fast and thermal reactors as well as for other promising trends of nuclear power engineering for the next decades.

Under the Federal Target Program "Nuclear Power Technologies of New Generation for the Period 2010–2015 and until 2020", a large scope of work was done in 2012 on the implementation of the MBIR project.

RESEARCH AND DESIGN ACTIVITIES

1. Based on the draft reactor design, a preliminary probabilistic safety analysis of reactor MBIR was performed and preliminary and intermediate safety analysis reports were issued.
2. Technical assignments for the key components and equipment of reactor MBIR were revised and issued.
3. Engineering designs for the basic equipment of reactor MBIR were developed and design documents were issued required for getting approval of GlavGosExpertiza (RF State Expert Review).
4. Engineering designs as well as design solutions on systems and experimental facilities of reactor MBIR were validated:

- to optimize the design and increase efficiency, neutron-physical and thermo-hydraulic calculations were done for emergency control rods consisting of seven absorbers of a regular shape and one ring-shape absorber. It was shown that the ring-shape absorbers allow increasing the efficiency up to the required values.
- to use a multi-absorber design for the control rod system and a single ring-shape absorber design was proposed for the scram system and manual control and reactivity compensation systems. A ring-shape design, in which the absorber content is 35 % higher as compared to the seven-absorber design, was proposed for the manual control system.
- to use a two-absorber cylindrical design for the control rod system as an alternative to increase the absorber amount without increasing its layer thickness; the additional absorber is to be located inside the sodium plenum. This design provides the required efficiency of the control rods, decreases the temperature distribution non-uniformity over the absorber and decreases the maximal temperature in the boron carbide as compared to the ring-shape design, where the absorber amount is increase by 35 %.

- design documents were developed for:
  - mock-ups of fuel rods and irradiation rig to test them;
  - mock-ups of 7-absorber control rod system, irradiation rig and mock-ups of rod-shape absorbers;
  - irradiation rig and mock-ups of control rods with ring-shape absorbers ;
  - mock-ups of FAs and blanket assemblies, area for hydraulic tests of FAs and blanket assemblies mock-ups;
  - FA bottom end component mock-up and area for its hydraulic tests;
  - throttle mock-up.
- technology for fabricating hot-pressed ring segments from boron-carbide for high efficiency absorber cores.
- there were fabricated mock-ups of fuel rods, mock-ups of control rods with 7 absorbers, mock-ups of rod-type absorbers for control rod system, mock-ups of control rods with ring-shape absorbers and irradiation rigs to test them in reactor BOR-60.

5. Research was done to provide the patent clearance of the scientific, design and engineering solutions.

DESIGN ACTIVITIES

1. Technical assignment for the development of test reactor MBIR was developed and approved by V.A. Pershukov, Director of Innovations Management Block, ROSATOM.
2. Land allocation certificate for the reactor MBIR construction was issued and approved.
3. Land plot development plan for reactor MBIR was approved and registered in accordance with the established procedure.
4. Radiological survey of the territory was done to define and control the activity of natural and man-caused radionuclides in the soil being in the area of excavation pit and ditches for the MBIR building and network.
5. Land allocation certificate for a lay of line intended for the MBIR construction was issued and approved.
6. Survey (geodesic, geologic and ecologic) required to develop and issue design documents was done at the site supposed for the MBIR construction as well as a comprehensive monitoring (seismic, ecological) of environment.

MBIR reactor building mock-up

LICENSING-RELATED ACTIVITIES

1. Public Hearings were held to discuss the documents required for reactor MBIR licensing. Based on the Hearings results, a protocol was issued signed by A.N. Komarov, Head of Dimitrovgrad Administration.
2. Expertise of documents was held to justify security of investments to the MBIR reactor construction, namely, a list of activities on civil defense and man-caused and natural emergencies, and compliance with the Federal and industry sector codes of fire safety. "Fire Audit", LLC issued its certificate and the Chief Directorate of the MES of Russia in Ulyanovsk region recommended to take the above materials as the basis for the design documents.
3. Federal Medical and Biological Agency of Russia reviewed and approved documents related to the investment stage of project, i.e. justification of the investment security and estimation of the MBIR reactor effect on the environment.
4. Materials for the MBIR reactor licensing were sent to the Federal Service for Supervision of Natural Resources for the State Expertise.

TECHNICAL UPGRADING OF FAST REACTOR BOR-60

Fast test 60 MW reactor BOR-60 is a unique multi-purpose facility used to test structural, fuel and absorbing materials used and to be used in reactors of different types, including fusion reactors. It is also used to test primary and secondary equipment for fast reactors.

Tests of reactor materials cover practically all types of existing and developed reactors from fast (BN-800, BN-1800, BREST, SVBR) and thermal (VVER-TOI, VVER-1500, GT-MHR, HTGR) to fusion (ITER) and special-purpose reactors.

Reactor BOR-60 is under operation for more than 40 years and requires technical upgrading. For this purpose, 555.9 million rubles will be allocated under the Program "Development of new experimental facilities and special-purpose equipment, modernization and development of the experimental base to justify physical principles and design solutions, analyze and justify safety of the key scientific and engineering solutions of innovative nuclear power engineering", a part of the Federal Target Program "Nuclear Power Technologies of New Generation for the Period 2010–2015 and until 2020".

Inspection and technical upgrading of the BOR-60 reactor to extend its lifetime is scheduled under the same Federal Target Program and Project "Technical Upgrading of Fast Test 60 MW Reactor". It will allow improving safety of the reactor and widening its experimental capabilities to provide the experimental justification of key parameters of IV Gen reactors, their safety and fuel cycle. In this connection, the activities performed in 2012 are listed below.

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RESEARCH AND DESING ACTIVITIES

1. Engineering designs to upgrade the reactor systems were developed: "Power supply system for data-measurement equipment", "Emergency power supply system", "Loudspeaker communications", "Replacement of air cooler generator TG-160", "Radiation control system", "Replacement of storage batteries SNU-34 (220 V)".
2. Material tests were done to control the state of equipment operated in the BOR-60 reactor and special-purpose samples were subject to long-term irradiation to estimate the state of the BOR-60 reactor components and summarize data on radiation swelling, creep and strengthening for steel Cr18Ni10.
3. Calculations were done to justify the performance of BOR-60 primary and secondary internals; safety analysis was performed for core disruptive accident and fuel melting accident.

The performed activities allow safe operation and technical upgrading of the BOR-60 reactor as well as effective use of its experimental capabilities to meet the challenges of nuclear power engineering.

DESIGN-RELATED ACTIVITIES

Relevant design documents were developed and signed in conformity with: Provisions on the contents of and requirements to design documents No. 87 approved by the RF Government as of February 16, 2008; current RF Rules and Requirements to research reactor facilities; Design Assignment approved by V.A. Pershukov, Deputy Director General, Innovations Management Block, ROSATOM; Technical Assignments for the Project "Technical Upgrading of 60 MW Fast Test Reactor".

DEVELOPMENT OF TECHNOLOGIES AND PRODUCTION OF MIXED OXIDE FUEL FOR FAST REACTORS

MOX FUEL PRODUCTION

In 2012, the key MOX fuel-related activities were aimed at the arrangement of the production line and fabrication of MOX-granulate, fuel pins and fuel assemblies to provide initial loading of BN-800 hybrid core. R&D and design activities were focused on the improvement of the production equipment, fabrication technology and control of the production process and products quality at all production stages.

TECHNICAL UPGRADING OF PRODUCTION LINE TO FABRICATE FUEL PINS AND FUEL ASSEMBLIES FOR BN-800 HYBRID CORE

Activities on the technical upgrading of the production line were carried out under the Federal Target Program "Nuclear Power Technologies of New Generation for the Period 2010–2015 and until 2020" with the purpose to arrange the production of vibropacked MOX-fuel for the BN-800 core: contracts were signed with sub-contractors; construction and installation work was performed; equipment was installed, tested and adjusted.

"Cold" tests were performed for the basic and auxiliary equipment of the electro-chemical re-crystallization area, crushing facility and cathode products grinding, crucible, pneumatic transportation system, fuel pins decontamination area and control systems. All the equipment and power supply systems were qualified to be installed into hot cells.

Box to load initial nuclear materials

Chlorator-electrolyzer under testing

About 1000 kg of BN-800 granulated MOX fuel has been produced at the production line. The production of fuel pins and fuel assemblies for the BN-800 hybrid core has been started. In 2012, seven fuel assemblies with MOX fuel were assembled and tested; 13 fuel assemblies with pellet fuel were produced. Pellet MOX-fuel and fuel pins were supplied from Mayak, PA.

The following analytical equipment was purchased to have the capabilities of the analytical laboratory comply with the current requirements to the control and quality of fabricated fuel compositions, fuel pins and fuel assemblies:

- Facility to determine oxygen ration "OKSILIT";
- Alpha-spectrometer "SKS-50M-A1";
- Beta-spectrometer "SKS-07P-B11";
- Gamma-spectrometer"SKS-50M-G3";
- X-ray fluorescence substance analyzer "ReSPEKT";
- Spectrophotometers "SF-56" and "SF-2000";
- Atomic-emission spectrometer "Express";
- Multi-channel spectrometer "Kolibri-2", etc.

The inspection commission confirmed the technical competence of the analytical laboratory within the accreditation scope.

R&D AND DESIGN ACTIVITIES TO IMPROVE PRODUCTION EQUIPMENT, DESIGN AND TECHNOLOGY TO FABRICATE FUEL PINS AND FUEL ASSEMBLIES FOR FAST REACTORS

To improve the design and fabrication technology of fuel pins with vibropacked MOX fuel, a dismountable fuel assembly was tested in the BOR-60 reactor with further post-irradiation examinations of fuel pins, of which design simulates the BN-800 ones (no upper breeding zone). The test results and PIEs did not reveal any peculiar features in the fuel pins behavior as compared to the standard design. Reactor tests will be continued.

After irradiation in BOR-60, untight fuel pins with MOX fuel were examined and the leakage causes were analyzed. It is shown that one of the most probable reasons of leakage is low quality of fuel pin tubes.

Study of the thermodynamic characteristics of the high draft resistance zones has been started. The mathematical modeling goes on to study the physical and chemical processes in the fuel pins. By means of "Thermo-Calc" software, the fraction of uranium getter in fuel pins with vibropacked MOX fuel was justified.

Three experimental fuel assemblies containing experimental fuel pins are being tested in the BN-600 reactor.

Software "Vikond 2" was verified and certified. The software is intended for justifying the vibropacked oxide fuel performance.

Федеральная служба
по экологическому, технологическому и атомному надзору (Ростехнадзор)
Федеральное бюджетное учреждение
«Научно-технический центр по ядерной и радиационной безопасности»
(ФБУ «НТЦ ЯРБ»)

ЭКСПЕРТНЫЙ СОВЕТ ПО АТТЕСТАЦИИ ПРОГРАММНЫХ СРЕДСТВ
ПРИ РОСТЕХНАДЗОРЕ

**АТТЕСТАЦИОННЫЙ ПАСПОРТ
ПРОГРАММНОГО СРЕДСТВА**

Регистрационный номер 318 от 9 октября 2012 года

Настоящий аттестационный паспорт устанавливает назначение и область применения программного средства

Vikond2,

которые указаны в разделе 2 приложения к настоящему аттестационному паспорту.

Аттестационный паспорт предоставлен

Открытому акционерному обществу «Государственный научный центр — Научно-исследовательский институт атомных реакторов» (ОАО «ГНЦ НИИАР»). Юридический адрес: Россия, 433510, Ульяновская область, Димитровград-10.

Настоящий аттестационный паспорт действует при соблюдении условий Приложения, являющегося его неотъемлемой частью.

Срок действия аттестационного паспорта до 9 октября 2022 года

Заместитель директора
ФБУ «НТЦ ЯРБ»,
председатель экспертного Совета
по аттестации программных средств
при Ростехнадзоре С.Н. Богдан

ETSON

"Vikond-2" software certificate

To justify the performance of MBIR fuel pin under high thermal loads, four mock-ups of fuel pins were fabricated as well as an irradiation rig to test them in the BOR-60 reactor.

The useful model author's certificate was issued for a BN-800 fuel pin with a new type of heat insulator. A useful model application has been effected for an MBIR fuel pin with a new type of getter.

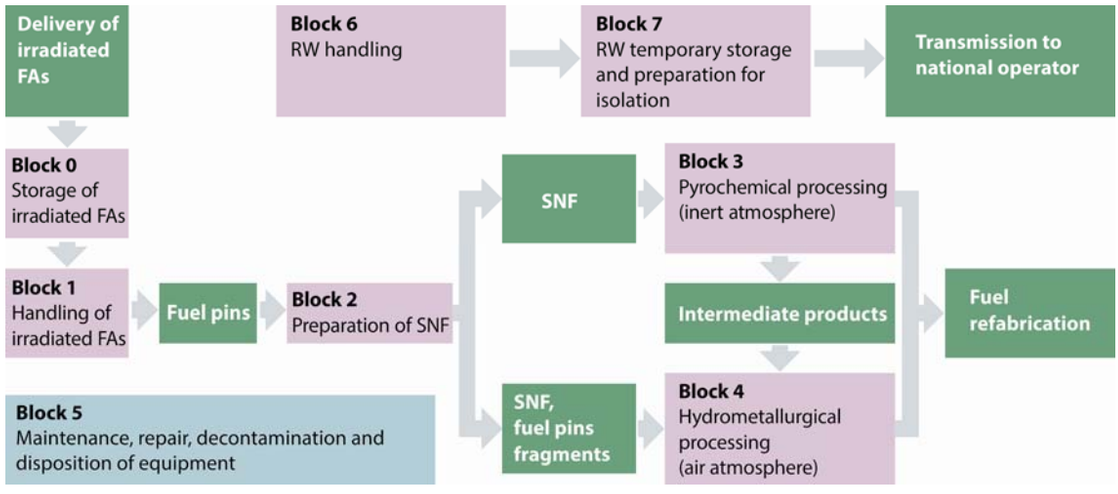
POLY-FUNCTIONAL RADIOCHEMICAL COMPLEX

Research activities to be carried out at the poly-functional radiochemical complex will result in the justified data necessary to take a decision when selecting a spent nuclear fuel reprocessing technology as well as radwaste handling ways. The key research tasks to be solved at PRC are as follows:

- Mastering of innovative process flow designs for fast reactor spent nuclear fuel handling to have initial data for a full-scale reprocessing facility and then industrial-scale closed fuel cycle technologies;
- Reactor- and process-level mastering and justification of minor-actinides fuel cycle back-end;
- Optimization of process radwaste handling to provide a safe and compact long-lived radionuclides storage and/or high-level waste disposal;
- Mastering of advanced equipment and generation of engineering data to arrange an efficient plant;
- Performance of activities under international cooperation and operation of the poly-functional radiochemical complex as a basis for the International Center for fast reactor spent nuclear fuel handling.

The poly-functional radiochemical complex is intended to handle real spent fuel from fast reactors (reprocessing capacity is up to 600 kg of SNF per year). The complex will be able to handle any type of spent fuel assemblies from any existing and designed reactors: BN-600, BN-800, BOR-60, MBIR, BREST-OD-300. There will be a full-scale check of equipment prototypes with a peak capacity of 12 t per year (up to 20 effective operation days). Any reprocessing technology and combination of technologies can be operated at the PRC since it has module hot cells with stack biological shield and unified platforms for re-adjustment. The scheme below presents the key PRC blocks.

In addition, the PRC comprises: a block for fundamental research, analytical laboratory, "cold" test and equipment adjustment areas, warehouse and chemical preparation area.

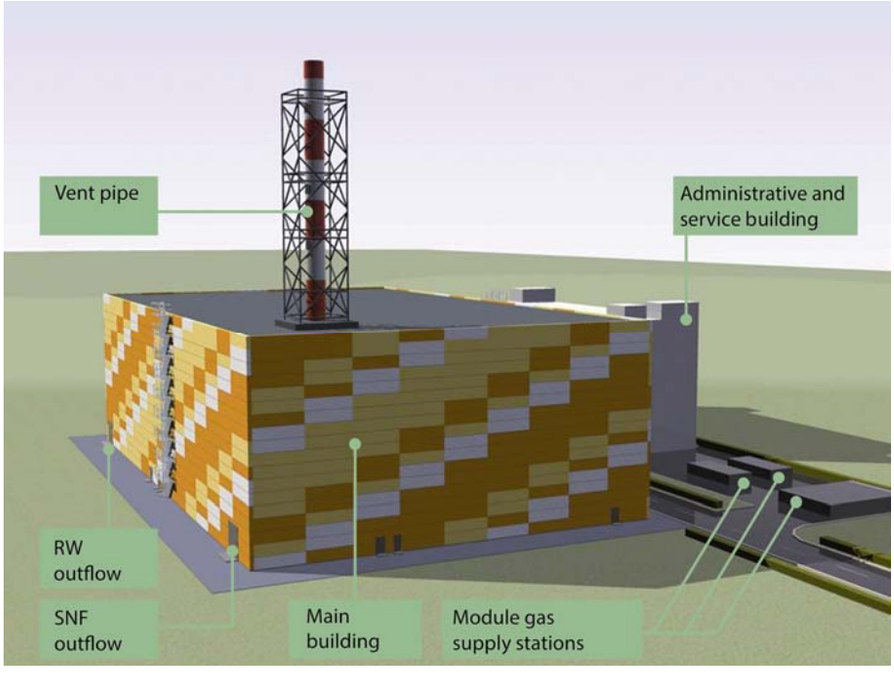


Structure of Poly-functional Radiochemical Complex

According to the Project "Establishment of Poly-functional Radiochemical Complex" under the Federal Target Program "Nuclear Power Technologies of New Generation for the Period 2010–2015 and until 2020", the PRC construction was carried on in 2012. The feasibility study of the production flow and layout designs performed in 2011 generated initial data sufficient to develop the PRC design documents in 2012.

During the pre-design work a site 80*10 m in size was selected for the PRC construction on the JSC "SSC RIAR" territory. Close to the PRC, there is an innovative and experimental fuel laboratory and, in future, there will be constructed a multi-purpose fast test reactor MBIR, thus allowing to demonstrate all stages of the fuel cycle back-end within the JSC "SSC RIAR" site. The PRC construction will start at the end of 2013; delivery of the first batch of SNF is scheduled for December 2017.

In parallel, research and design works were carried out to justify the PRC technical solutions.



Poly-functional Radiochemical Complex

Activities performed in 2012 resulted in the development of the technical assignment for the PRC flow process analytics and key components of the system able to operate on industrial and laboratory scale, drafts of a universal process module, transport and lifting system and protective equipment.

The results of the above activities were presented at the VII Russian Conference "Radiochemistry 2012" (Dimitrovgrad, Russia), IV International Conference on Pyrochemistry (Fontana, USA) and international workshops.

Further works related to the PRC construction will be mainly focused on the development of PRC equipment.

DEVELOPMENT AND JUSTIFICATION OF PROCESS AND DESIGN SOLUTIONS FOR INDUSTRIAL-SCALE REACTOR-ADJACENT MODULE FOR REPROCESSING FAST REACTOR SPENT NUCLEAR FUEL

Research activities and workout of process solutions for fast reactor closed fuel cycle proceeded activities performed in 2011 and were aimed at the development of the pyrochemical technology for reprocessing dense spent nuclear fuel. The following activities were carried out:

- Study of ceramics and glass samples with immobilized waste generated from reprocessing of dense spent nuclear fuel;
- Investigation of changes in key properties of high-active waste in the form of muratait ceramics and aluminofluorophosphate glasses during storage;
- Development of promising solutions for environmentally-safe long-term storage and disposal of all types of waste;
- Estimation of economic performance to justify a priority option of long-term storage and disposal of all type of radwaste resulted from the operation of reactor-adjacent module for fast reactor SNF reprocessing; development of design document and fabrication of pilot samples of equipment for nitride SNF reprocessing;
- Experimental check up of engineering and technical solutions being the basis for dense SNF reprocessing ;
- Reprocessing of experimental fuel pins with spent nitride fuel to verify the design performance.

The estimation of the efficiency of engineering and technical solutions for the dense spent fuel pyrochemical reprocessing technology allows a conclusion to be made about a possibility to have a reactor-adjacent fast reactor closed fuel cycle module that can provide a high level of the environmental protection and enough competence.

In 2012, research was carried out in justification of the technical solutions for certain process operations and items of equipment intended for a hydrometallurgical reprocessing of dense SNF, including the development of equipment and check of processes using real samples.

The results of the above activities were presented at the Russian and International Conferences and Workshops.

Experiments in dissolution of dense SNF will be continued in 2013 in the hot cells of the Radiochemical Department.

UPGRADING OF RIAR's EXPERIMENTAL BASE

The Program to improve safety and increase efficiency of the JSC "SSC RIAR" experimental base covers the upgrading of experimental capabilities, improvement of safety of JSC "SSC RIAR" reactors operation and compliance with the Federal Standards and Regulations to provide safety of nuclear power objects. The following works were performed in 2012 under this Program using ROSATOM's funds:

- In compliance with the action plan to reduce the consequences of beyond the design-basis accidents at research reactors, equipment was purchased to improve nuclear facilities stability under the influence of natural and man-caused factors;
- Lifting mechanisms of research reactors and SNF storage vaults were brought up to date;

- Obsolete measurement gages of the research reactor safety systems were replaced;
- Activities were held to improve safety of reactor facilities;
- Activities were held to improve operating safety of out-of reactor equipment;
- Obsolete electrical equipment was replaced with new ore or upgraded to improve its reliability ;
- Action plan was implemented to improve safety at nuclear- and radiation-hazardous objects of ROSATOM;
- Experimental base was upgraded, including purchasing of equipment for fabrication and technical control of reactor facility key equipment, experimental facilities and core components that allows improving safety and increasing efficiency of the experimental research.

The above activities contributed significantly to safety and efficiency of the RIAR's experimental base.

MOLYBDENUM-99 PRODUCTION

Among the key tasks RIAR faced in 2012, one of the most important one was the establishment of molybdenum-99 production under the RF Presidential Commission Project on the Upgrading and Technological Development of Economics of Russia. The RIAR team did its best to meet the deadline and on December 26, an Act "Start-up of the second molybdenum-99 production line" was signed.

OUTPUT FOR THE REPORTING PERIOD

1. Annex to the building of Radionuclide Sources & Radiochemicals Division was constructed.

Annex to the building of Radionuclide Sources & Radiochemicals Division

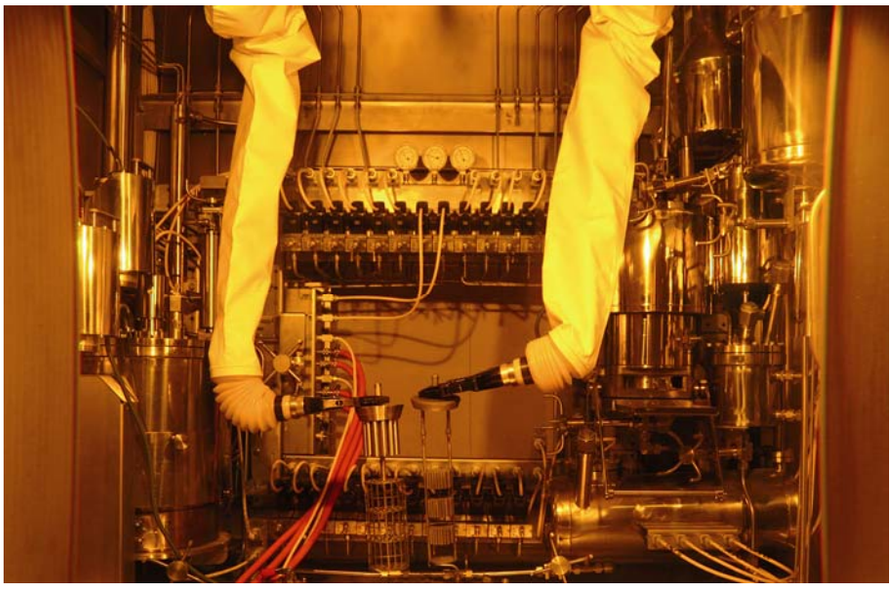
2. Decision was taken and approved by Rostehnadzor to import equipment for the molybdenum-99 production.
3. FSUE VO "Safety" checked the equipment manufacturing conditions at three sites in Germany and, based on the favorable opinion, issued corresponding approval documents.
4. Imported equipment was subject to acceptance tests in the presence of FSUE VO "Safety" representatives.
5. Documents justifying the use of import equipment for ^{99}Mo production at JSC "SSC RIAR" were subject to expertise and approved by Director General of "Engineering Research Center for Safety Expertise", LLC.

6. Process equipment to reprocess irradiated target was installed, including:

- seven shielded boxes to receive and cut irradiated targets, dissolve them to extract and purify molybdenum-99;
- conveyer to handle cask K-120 intended for transporting irradiation rigs from a reactor and moving solid radwaste to the reprocessing area;
- systems to provide radiation and ecological safety: xenon retention systems, iodine capture facility, liquid waste collection facility;
- software;
- radiation control system.

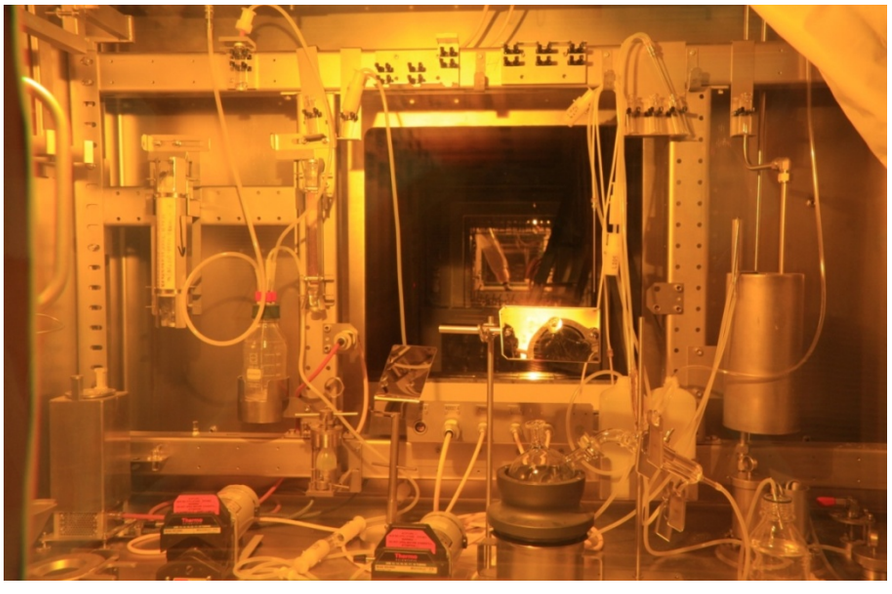
Shielded boxes for irradiated targets reprocessing

7. Personnel were trained to operate the equipment.
8. Overall examination of the irradiated target reprocessing facility was carried out using radioactive substances and nuclear materials to check its readiness for start-up.
9. During the start-up work, the process equipment was adjusted and process parameters and modes were specified using target dummies, radioactive indicators and irradiated targets.



Equipment to perform the initial operations of irradiated targets reprocessing

10. "Hot" start-up was performed to test the facility loaded with critical raw materials to confirm its performance and compliance of the output product with the quality requirements to molybdenum-99 radiochemical "Sodium molybdate".
11. The second molybdenum-99 production line was commissioned.



Equipment to extract and purify molybdenum-99

MANUFACTURE OF CONTROL AND SAFETY RODS WITH IMPROVED PERFORMANCE CHARACTERISTICS FOR EXISTING AND INNOVATIVE GEN-IV NUCLEAR REACTORS

In 2012, Project "Manufacture of control and safety rods with improved performance characteristics for existing and innovative Gen-IV reactors" was completed. The Project was jointly performed by JSC "SSC RIAR" and Ulyanovsk State University under the RF Government Decree No. 218 as of April 09, 2010 "On Measures of the Governmental Support of the Development of Cooperation between Russian Universities and Organizations Implementing Advanced Production Integrated Projects". The Project was aimed at increasing safety, lifetime and feasibility characteristics of control and safety rods of power, transport and research nuclear reactor and their competitiveness at the world's market.

High competitiveness of the control and safety rods is provided by a significant improvement of their performance characteristics, reliability and safety as well as by a decrease of radwaste as the control and safety rods are spent. In the course of the Project implementation at JSC "SSC RIAR", technologies were mastered and production area was upgraded to manufacture control and safety rods for Russian fast reactors BN-600 and BOR-60 under operation, BN-800 under construction, BN-1200, SVBR-100, BREST-300 and MBIR under design as well as for thermal reactors, including VVER-1000, located both in Russia and abroad, floating NPPs and research reactors. New design of control and safety rods as well as application of new absorbers provides:

- Improved reliability and safety of both control and safety rods and new-generation reactor on the whole due to high neutronic characteristics;
- Extended (up to 25–30 years) lifetime of control and safety rods and, consequently, decrease of radwaste after their disposal and volume of cooling pool for spent control rods;

- Decrease of material consumption by 25–50 % when using a high-cost highly-enriched boron carbide in the closed cycle;
- Increase of power efficiency if dysprosium hafnate or hafnium hydride is used as an absorber (especially in 10–15 years after the start of Gen-IV NPP operation).

RESULTS OF KEY ACTIVITIES

REACTOR MATERIALS SCIENCE AND TECHNIQUES TO TEST MATERIALS AND COMPONENTS OF NUCLEAR POWER PLANTS

EXAMINATION OF VVER-1000 FUEL RODS WITH INCREASED URANIUM CONTENT

Feasibility and safety of nuclear fuel operation in reactors VVER-1000 is improved by refining the FA design, increasing uranium content in fuel rods and applying new fuel and structural materials.

Several fuel assemblies of new design (TVS-ALPHA, TVSA-5M and TVS-2M) spent at the Kalinin and Balakovo NPPs were examined at JSC "SSC RIAR". The increased uranium content in the fuel assemblies in question was achieved by an extended fuel meat, increased outer pellet diameter and decreased inner one. The TVS-ALPHA fuel rod claddings were made of sponge zirconium alloy and pellets had larger grain size (25–27 μm), while TVS-2M fuel rod claddings went without final etching and anode finish.

Key operating parameters of fuel rods with increased uranium content

FA type	Year of manufacture	NPP unit	Fuel rod design					No. of fuel cycles	Operation duration, eff. days	Burnup, MW day/kgU
			Cladding diameter, mm		Pellet diameter, mm		Fuel meat length, mm			
			OD	ID	OD	ID				
TVS-ALPHA	2003	Kalinin NPP, 1st unit	9.1	7.93	7.8	0	3 530	3	954	41.6
TVSA-5M	2004	Kalinin NPP, 1st unit	9.1	7.73	7.6	1.2	3 530	5	1 568	65.4
TVS-2M	2006	Balakovo NPP, 1st unit	9.1	7.73	7.6	1.2	3 680	3	1 132	46.3

The examination results confirmed the designed performance characteristics of fuel rods of new design. The key performance characteristics (geometry, corrosion state, FGR) did not achieve critical values preventing the lifetime performance characteristics to be achieved.

Examinations of fast reactor fuel and fuel pins

Two Projects were implemented under the Federal Target Program "Federal Target Program "Nuclear Power Technologies of New Generation for the Period 2010–2015 and until 2020".

Project "Development of Dense Fuel Fabrication Technologies for Fast Reactors" generated data on the properties and behavior of uranium-plutonium nitride fuel irradiated in the BOR-60 reactor in the experimental pins filled with lead and helium.

Major processes occurring inside fuel pins were revealed to cause changes in materials, state and performance of fuel pins. The generated experimental data will be used to design new generation fast reactors.

Project "Development of Promising Structural Materials for Fast Reactors" resulted in a technique and comparative experiments to study the ODS effect on stainless steel EP-450 under the chemical interaction with nuclear fuel fission products. Analysis of the results obtained by metallography, SEM and EMPA allowed a conclusion to be made about a positive effect of ODS on corrosion resistance of steel.

JUSTIFICATION OF STRUCTURAL AND ABSORBING MATERIALS TO BE USED IN ADVANCED NUCLEAR REACTORS

To experimentally justify the performance of structural and absorbing materials in reactors with liquid metal coolant (lead, lead-bismuth) and refurbished VVER cores, irradiation rigs were designed, fabricated and inserted into the BOR-60 reactor to test samples of the following steels: ЭП-823-Ш (EP-823-Sh), ЭП-302-Ш, (EP-302-Sh), 04Х15Н11С3МТ-ВИ (04H15N11S3MT-VI), 09 ГС2 (09GS2), zirconium alloys and neutron absorbers.

Similar tests were performed under contracts with our foreign Customers from France, USA, Belgium and Italy.

Irradiation and post-irradiation examinations of absorbers for the JSFR reactor was completed under the Contract with Marubeni Utility Services, Ltd (Japan).

Post-irradiation examinations of structural materials were continued to provide their results to the nuclear facilities designers with the purpose of justifying core component designs for reactors SVBR-100, MBIR and BREST-OD-300.

EXAMINATIONS OF FUEL RODS AND FUEL ASSEMBLIES OF TRANSPORT REACTORS

Material tests were performed for the experimental cylindrical fuel rods with dispersed fuel composition of cermet type based on uranium dioxide granules; claddings were made of zirconium alloys E-110 and E-635. Fuel rods were irradiated in the MIR reactor loops. This stage of tests and examinations did not reveal any advantage of any alloy regarding corrosion resistance. Examinations will be further continued.

EXAMINATIONS OF RESEARCH REACTORS FUEL

Post-irradiation examinations were continued for one of the options of promising low poison absorption fuel rods for reactor SM. The examinations were carried out in an initiative manner in the frame of the reactor core modernization program. A significant effect of irradiation temperature and heat rate on swelling and performance of fuel rods was shown.

UPGRADING OF RESEARCH AND EXPERIMENTAL BASE TO DEVELOP NUCLEAR POWER TECHNOLOGIES

ROSATOM allocated funds to the upgrading of Materials Testing Department. The equipment was installed to perform the following activities:

- transmission electron microscopy and samples preparation;
- examination of the elementary composition of irradiated structural, moderating and absorbing materials;
- measurement of amount and composition of gas inside a fuel rod;
- X-ray radiography of core components.

Contracts were signed to supply equipment for:

- examination of isotopics of irradiated samples at mass-spectrometer ISP-MS NexION 300D»;
- mechanical tests: machine for mechanical tests Zwick Z010, vacuum chamber VF-M-48-MM-1500-VG to mechanical machine LFMZ 50 kN, high-temperature strain gages 3641-003M-030M and 3641-003M-060M;
- metallographic analysis remotely done in a hot cell: upgraded metallographic microscope to examine irradiated materials, equipment to prepare samples for metallography of radioactive materials (Struers, Denmark);
- scanning microscopy based on VEGA 3 RXMU scanning microscope of Tescan production with analytical devices for elementary analysis.

This upgrading allowed us to bring to a new level of quality methodological and instrumentation support of research, design and engineering activities carried out by ROSATOM organizations in terms of irradiated fuel research to meet the nuclear power engineering challenges and develop Gen-IV innovative nuclear reactors.

RESULTS OF KEY ACTIVITIES

Research Reactor Complex (RRC) of JSC "SSC RIAR" renders comprehensive services to other organizations, including foreign ones. The most important directions of the RRC activities are:

- generation of experimental data on physics, fission gas release, behavior of fuel rods and FAs material required for verification of computational codes and justification of safety of existing reactors and those under development;
- simulation of accidental and transient conditions and examination of fuel rods and FAs characteristics under different conditions;
- development of techniques and hardware components to examine FAs, fuel rods and their fragments under accidental conditions;
- development and tests of devices for diagnostics of state of nuclear power facilities and their safe operation.

Research Reactor Complex comprises five research reactors, of which performance indicators are given below.

Key reactors performance indicators for 2012

Indicator	SM	RBT-6	MIR	RBT-10/2	BOR-60
Max capacity, MW	90	6	53.7	10	53
Utilization factor, rel. unit					
scheduled	0.64	0.61	0.67	0.73	0.62
actual	0.67	0.61	0.69	0.73	0.61
Capacity factor, rel. unit	0.87	0.9	0.28	0.705	0.789
Channels utilization factor, rel. unit					
scheduled	0.78	0.26	0.48	0.27	–
actual	0.78	0.26	0.48	0.27	–
Operating time, days					
scheduled	234.31	223.91	246.7	268.1	228.0
actual	245.29	223.91	253.2	268.1	223.4
Number of shutdowns	27	29	15	36	7
including unscheduled	2	–	–	–	1

IN-PILE TESTS OF STRUCTURAL AND FUEL MATERIALS, DUMMIES OF FUEL RODS, FUEL ASEMBLIES AND CORE COMPONENTS OF NUCLEAR POWER FACILITIES

Activities carried out in reactors SM and RBT-6:

- Tests of block and matrix graphite for reactor GT-MHR;
- Examination of irradiation effect on the long-term strength and short-term mechanical properties of steel Cr18N9 and welded joints subjected to thermal ageing;
- Examination of creep of uranium dioxide fuel with justified microstructure for VVER reactors ;
- Examination of creep and short-term mechanical properties of alloy VZh-159 under neutron irradiation;
- Examination of dummies of fuel rods with carbonitride fuel, radiation shielding materials as well as structural materials for core components with the purpose to select materials and design characteristics for a space-related megawatt-class reactor;
- Accelerated tests of fuel rod dummies with carbonitride fuel to justify the design of a space-related megawatt-class reactor;
- High-dose irradiation of Mo-based refractory materials and accelerated irradiation of fuel rods claddings for a space-related megawatt-class reactor;
- Methodical tryout and test of radiation shielding materials (lithium hydride, boron carbide for a space-related megawatt-class reactor;
- Tests of control rod dummies and accelerated irradiation of fuel rod dummies with alternative fuel as well as high-dose irradiation of Mo-based refractory materials for a space-related megawatt-class reactor.

Activities carried out in reactor MIR:

- Lifetime tests of three loop-type fuel assemblies for low-power and floating power plants;
- Additional irradiation of fuel rods of transport reactor loop-type fuel assembly up to high burnup in irradiation rig UDOT;
- Examination of promising fuel rods, including those with claddings made from modified Zr alloys and 42XHM alloy with a decreased wall thickness; tests were performed in irradiation rig "Girlyanda";
- Power ramp simulating experiment using full-size fuel rods removed out of spent fuel assemblies; fuel rods have pellets with no central hole and are intended for operation in the advanced VVER-TOI reactor;
- Tests of a loop-type fuel assembly with metal ceramic fuel rods from transport nuclear facilities;
- Irradiation of samples of pilot low-activated titanium alloy of grade ПТ-542 (PT-542) to study its mechanical properties;
- Irradiation of experimental fuel rods of an FA with square spacer grid (TVS-Kvadrat) in the loop facility with PWR parameters;
- Preparation of loop facility PG-1 to test fuel rods for a space-related megawatt-class reactor.

Activities carried out in reactor BOR-60:

1. Research and design works in justification of reactor SVBR-100 design solutions:

- tests of steels 10Х15Н9С3Б1-Ш (10H15N9S3B1-Sh), 04Х15Н11С3МТ-ВИ (04H15N11C3MT-VI), ЦТ-24У (TsT-24U) in the temperature ranges 320–340, 420–465, 500–550 °C;
- tests of dummies of fuel pins within a 7-fuel pin experimental FA;
- tests of fuel rods made of steel ЭП823-Ш (EP823-Sh) to justify the material long-term strength;
- low-temperature irradiation of steel ЭП823-Ш (EP823-Sh) to elaborate recommendations for SVBR core annealing modes;
- irradiation of SVBR neutron sources dummies up to design fluence.

2. Research and design works in justification of reactor BREST-OD-300 design solutions:

- irradiation of boron carbide and dysprosium hafnate absorbers up to design fluence;
- Irradiation of steels ЭП302-Ш (EP302-Sh), ЦТ-24У (TsT-24U), 09Г2С (09G2S), 08Г2С (08G2S) at 420–470 °C;
- creep tests of steel ЭП823-Ш (EP823-Sh) in the temperature ranges 420–470 and 500–550 °C.

3. Research and design works in justification of new zirconium alloys:

- investigation of irradiation effect on the structure, mechanical and corrosion properties of cladding tubes made of alloys Zr-Nb-Sn-Fe-O;
- investigation of creep and irradiation-induced growth of alloy E-110 (opt.) based on sponge zirconium;
- creep, irradiation-induced growth and mechanical properties tests of alloys E-110 (opt.), E-125 (opt.), E-110M and E-635M.

4. Accumulation of radionuclides, including stroncium-89 and gadolinium-153.

UPGRADING OF RESEARCH REACTOR COMPLEX EXPERIMENTAL BASE

In 2012, the following works were performed under the Program to improve safety and increase efficiency of the JSC "SSC RIAR" experimental base:

1. Concept of the SM core refurbishment was elaborated.
2. Design documents to refurbish MIR reactor loop facilities PV-2 and PVK-2 were issued
3. Layout was developed to introduce signals from the seismic control system into the reactor emergency and safety system.
4. System was developed and installed for vibro-diagnostics of main primary circulation pumps of reactors MIR and RBT-6.

5. Automated fire extinguishing and alarm systems were installed at the diesel aggregate building of reactors SM and RBT-6.
6. Automated fire alarm, announcement and evacuation control systems were purchased and mounted.
7. The following equipment was purchased:

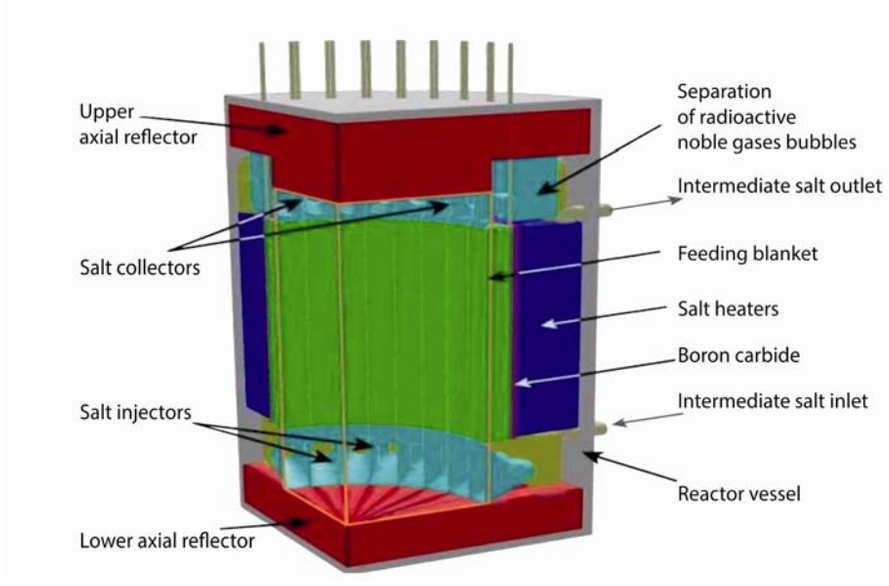
- graphite bearings and balancing disks to upgrade electrical pumps and primary pumps to extend their lifetime;
- devices to upgrade control and safety system of reactor RBT-10/2;
- two automotive diesel-generators;
- four diesel-generators;
- high-lift power pumps with quick-repairable plastic pipes with metal quick-detachable flanges;
- back-up movable communication for all reactors control boards;
- device to control neutron flux density of the MIR control and safety rods;
- personal computers to replace obsolete ones at the work stations;
- devices to measure primary cooling circuit parameters;
- fire-resistant flooring to replace plastic cover on the personnel evacuation routes in reactors MIR and RBT-10;
- fire-fighting primary means: fire-hoses, powder fire extinguisher, escape hoods, fire alarm;
- high-power air conditioners for all reactors control boards.

RADIOCHEMISTRY AND FUEL CYCLE

In 2012, Radiochemical Department carried out works related to the study and development of closed fuel cycle for fast reactors under the Federal Target Program "Nuclear Power Technologies of New Generation for the Period 2010–2015 and until 2020" and in the frame of governmental contracts and agreements. The research was aimed at the creation of the closed fuel cycle technology for fast and thermal reactors, namely:

- development and experimental justification of procedure and equipment of a universal process flow design of dense fuel reprocessing for the industrial-scale reactor-adjacent module for fast spent nuclear fuel reprocessing;
- fundamental research in molten salt properties for advanced fuel cycles and reactors;
- research and design works in justification of homogeneous molten salt reactors;
- comprehensive development of up-to-date analytical methods to be used in closed cycle, radionuclides production and radiochemical support of PIE at JSC "SSC RIAR".

In 2012, experiments and calculations were performed in support of fundamental research in nuclear power systems based on molten salts. The research was aimed at the justification of a concept of a burner for long-lived actinides containing in spent nuclear fuel; the concept is to provide safety and economic efficiency as well as to reduce waste and minimize the risk of nuclear materials proliferation. The research is at the stage of design and conceptual elaboration, experimental verification, justification and optimization of the selection of molten salt composition and design of molten salt reactor. Supposedly, in future, the developed molten salt reactor concept might be used in the development of (Th–U) breeder as a new element of the nuclear power engineering.



Molten salt reactor with a plenum-type core

The governmental contract covered the development of technical and design solution to handle radwaste and spent control and safety rods of the lead-bismuth reactor SVBR-100. All solutions are focused on the arrangement of closed fuel cycle using the capabilities available at JSC "SSC RIAR" and application of the generated results in the development of nuclear fuel cycle. The value of services on reprocessing and storage of radwaste and spent control and safety rods of the SVBR reactor was assessed. Further work will complete the comprehensive research of a possibility to have a reactor-adjacent fuel cycle back-end for the above reactor.

UPGRADING AND DEVELOPMENT OF RESEARCH AND EXPERIMENTAL BASE OF RADIOCHEMICAL DIVISON ANALYTICS

One of the most important activities radiochemists performed in 2012 was the comprehensive development of up-to-date analytical methods related to closed fuel cycle technologies, production of radionuclides and radiochemical support of PIEs carried out at RIAR.

Under the Project "Establishment of Poly-functional Research Complex", nuclear-spectrometric equipment of the Analytical Department was upgraded, namely, two multi-channel emission spectra analyzers (VMK "Optoelectronia", Ltd., Novosibirsk). At present, the existing techniques are being customized to new analyzers.

A decision was taken to purchase an ICP mass-spectrometer "Nexlon 300S" and atomic-emission spectrometer "Optima 8300 DV"; special-purpose shielded boxes will be arranged to work with high specific activity samples.

Accreditation of the Analytical Department to technical competence

Organizational work was held to prepare the Analytical Department for accreditation to technical competence regarding measuring the composition of radioactive isotopes-containing compounds, including rare earth elements isotopes and actinides as well as uranium and its compounds and mixed uranium and plutonium compounds.

Based on the audit results, the JSC "VNIINM" Expert Commission confirmed that measurements performed by the Analytical Department comply with the accreditation requirements and State Standard GOST ISO/IEC 17025-2009 and a five-year Accreditation Certificate was issued.


Федеральная служба по аккредитации

АТТЕСТАТ АККРЕДИТАЦИИ ИСПЫТАТЕЛЬНОЙ ЛАБОРАТОРИИ (ЦЕНТРА)

№ РОСС RU.0001.519055

Открытому акционерному обществу "Государственный научный центр - Научно-исследовательский институт атомных реакторов" ОГРН 1087302001797

433510, Ульяновская область, г. Димитровград - 10

Аналитический отдел Радиохимического отделения

433510, Ульяновская область, г. Димитровград - 10

ГОСТ Р ИСО/МЭК 17025-2009

техническую компетентность

15 ноября 2012 г. — 15 ноября 2017 г.

С.В. Мигин

РОСАТОМ

ГОСУДАРСТВЕННАЯ КОРПОРАЦИЯ ПО АТОМНОЙ ЭНЕРГИИ «РОСАТОМ»

СВИДЕТЕЛЬСТВО

№ 95.0109-2012

О СОСТОЯНИИ ИЗМЕРЕНИЙ В ЛАБОРАТОРИИ

Выдано 17 сентября 2012 г.

На основании акта № 505.255 (ОСИ) от 13.09.2012 г. удостоверяется наличие в лаборатории в аналитическом отделе радиохимического отделения (РХО)

ОАО «ГНЦ НИИАР» (г. Димитровград-10 Ульяновской области)

условий, необходимых для выполнения измерений в области деятельности лаборатории.

Свидетельство о состоянии измерений в лаборатории действительно до 17 сентября 2017 г.

Приложение: перечень объектов измерений, испытаний, контроля и контролируемых параметров.

Первый заместитель генерального директора Госкорпорации «Росатом» А.М. Локшин

Главный метролог Госкорпорации «Росатом» Н.А. Обысов

a **b**

Documents confirming Analytical Department accreditation:
a – Accreditation Certificate; b – Certificate on Measurements Status

The upgrading and accreditation of the Analytical Department are a part of a sustained effort of upgrading research base of JSC "SSC RIAR" to justify a new technological platform of nuclear power engineering.

RADIONUCLIDE SOURCES AND RADIOCHEMICALS

PRODUCTION OF IONIZING SOURCES AND RADIOCHEMICALS

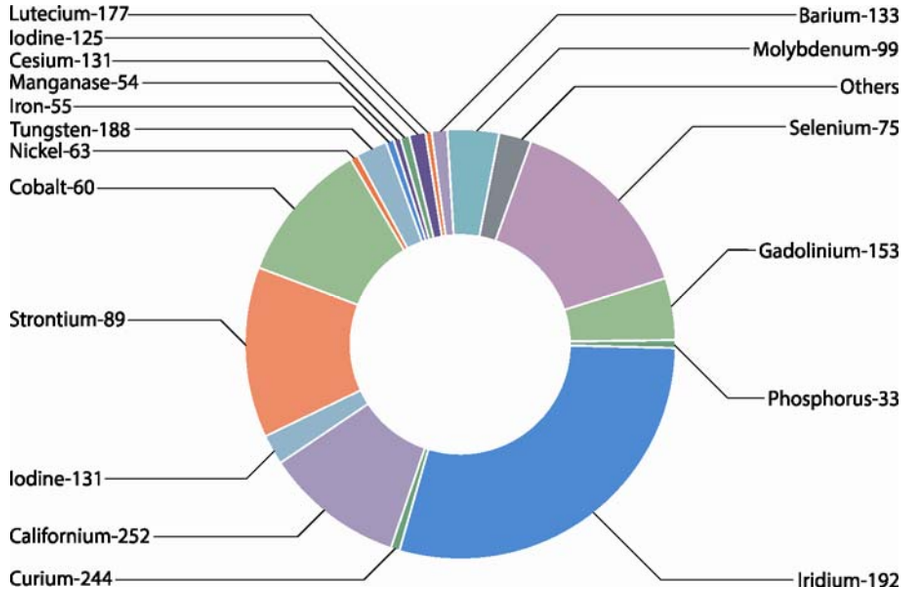
The nomenclature and output of radionuclides produced by JSC "SSC RIAR" in 2012 are mainly similar to indicators achieved in the previous three-four years.

The change in the output of certain type of products was mainly conditioned by market fluctuations. As compared to 2011, there was a 7 % increase (in monetary terms) in the production of selenium-75 and cobalt-60 sources, 17 % increase in the production of iridium-192 sources, 33 % increase in the production of tungsten-188 sources, 65 % increase in production of other radionuclides. The sales volume of iodine-131 was increased by 4.8 times and that of manganese-89 – by 11.2 times.

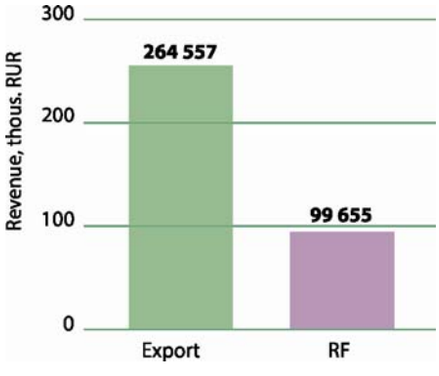
At the same time, there was a decrease in the scope of supply of gadolinium-153 and ferrum-55 sources by 9 %, stroncium-89 – by 10 %, phosphorous-33 – by 12 %, iodine-125 – by 20 % and barium-133 – by 25 %. A decrease in the output of these radionuclides was related to the changes in the market conditions.

The ordered volume of ^{252}Cf-based sources were produced in time, however, as per the Customer's request the delivery was shifted to Quarter I, 2013 that caused a 29 % decrease in the sales volume as compared to 2011.

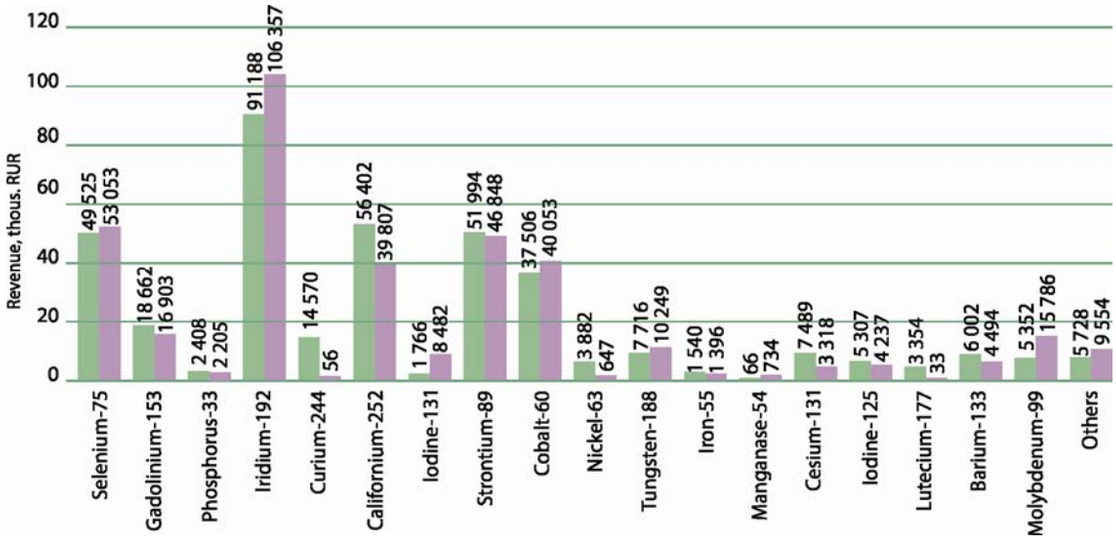
A cutback in orders for some nuclides was compensated by a growth in orders for others that allowed us to retain the sales volume at the level of 2011.



Nomenclature of radionuclides



Volume of proceeds from marketing radioisotopes in 2012



Dynamics of isotopes sales in 2011–2012

The projected growth of market of the JSC "SSC RIAR" radionuclides nomenclature for 2013 and further is favorable since in 2012 a background was created for the growth in the radionuclides demand both in Russian and abroad. This is proved by inquiries for delivery of stroncium-89, tungsten-188, iodine-125 and iodine-131.

It is important to mention the restructuring of the reactor resource allocation due to the implementation of a number of federal target programs at JSC "SSC RIAR". In 2012, the production of cobalt-60 sources was stopped to use the hot cell for the MOX-fuel production. We also plan to stop reprocessing irradiated europium targets (gadolinium-153 production) due to the necessity to implement the Federal Target Program "Nuclear Power Technologies of New Generation for the Period 2010–2015 and until 2020".

To compensate the production loss related to the competition on technological resources, RIAR together with the State Ulyanovsk University sent a bid to the RF Ministry of Science and Education to implement a Project "Comprehensive upgrading and development of radionuclides production in JSC "SSC RIAR" to support the development of nuclear medicine and radiation technologies".

The bid was held under the RF Government Decree No. 218 as of April 09, 2010 "On Measures of the Governmental Support of the development of Cooperation between Russian Universities and Organizations Implementing Advanced Production Integrated Projects". The Bidding Commission recognized the RIAR's Project the best. The Project provides the creation of a new area to produce medical-purpose ionizing sources: iridium-192, selenium-75, stroncium-89, lutetium-177, tungsten-188, ittrium-90, radium-223, alpha-emitters generation and cobalt-60 as well as upgrading of the area to produce iodine-131 and californium-252. The Project is scheduled for three years.

In the reporting year, RIAR got licenses to operate radioactive sources, handle radwaste and transport them.

ФЕДЕРАЛЬНАЯ СЛУЖБА
ПО ЭКОЛОГИЧЕСКОМУ, ТЕХНОЛОГИЧЕСКОМУ И АТОМНОМУ НАДЗОРУ

ЛИЦЕНЗИЯ

Регистрационный номер ВО-03-205-2545 от 12 декабря 2012 года

Лицензия выдана Открытому акционерному обществу «Государственный научный центр - Научно-исследовательский институт атомных реакторов »

Юридический адрес лицензиата: 433510, Ульяновская область, г. Димитровград-10

Лицензия дает право на эксплуатацию радиационного источника

Объект, на котором и/или в отношении которого проводится лицензируемая деятельность: комплекс, в котором содержатся радиоактивные вещества

Основание для выдачи лицензии: заявление Открытого акционерного общества «Государственный научный центр - Научно-исследовательский институт атомных реакторов» от 16.04.2012 г. № 100803/348, решение и.о. руководителя Волжского МТУ по надзору за ЯРБ Ростехнадзора от 12.12. 2012 № ВЛ-3317

Срок действия лицензии , до 12 декабря 2017 года

Лицензия действует при соблюдении прилагаемых условий действия лицензии, являющихся ее неотъемлемой частью.

И.о. руководителя органа лицензирования В.В. Уткин

Серия А В №347950

ФЕДЕРАЛЬНАЯ СЛУЖБА
ПО ЭКОЛОГИЧЕСКОМУ, ТЕХНОЛОГИЧЕСКОМУ И АТОМНОМУ НАДЗОРУ

ЛИЦЕНЗИЯ

Регистрационный номер ВО-06-501-2544 от 10 декабря 2012 года

Лицензия выдана Открытому акционерному обществу "Государственный научный центр – Научно-исследовательский институт атомных реакторов"

Юридический адрес лицензиата: 433510, Ульяновская область, г. Димитровград-10

Лицензия дает право на обращение с радиоактивными веществами при их транспортировании

Объект, на котором и/или в отношении которого проводится лицензируемая деятельность: не относящиеся к ядерным материалам вещества, испускающие ионизирующее излучение

Основание для выдачи лицензии: заявление Открытого акционерного общества "Государственный научный центр – Научно-исследовательский институт атомных реакторов" от 17.08.2012 № 100803/973, решение заместителя руководителя Волжского МТУ по надзору за ЯРБ Ростехнадзора от 06.12.2012 № ВЛ-3378

Срок действия лицензии до 10 декабря 2017 года

Лицензия действует при соблюдении условий действия лицензии, являющихся ее неотъемлемой частью

И.о. руководителя органа лицензирования В.В. Уткин

Серия А В №347949

a **b**

Licenses obtained by the Radionuclide Sources and Radiochemical Division in 2012: a – license to operate a radioactive source; b – license to handle and transport radioactive substances

RESEARCH IN RADIOACTIVE ELEMENTS CHEMISTRY AND DEVEOPMENT OF NEW RADIUNUCLIDES PRODUCTION TECHNOLOGIES

TARGETS TO SYNTESIZE ELEMENT 117

Synthesis and study of superheavy elements are one of the fundamental trends of the modern nuclear physics. Research in this area is carried out both in Russia and in other countries, such as Germany, Japan and USA. At present, Russia is the leader in this area. The Flerov's Laboratory of Nuclear Reactions, JINR (Dubna), synthesized and studied nuclear-physical properties of new elements 115, 116 and 118.

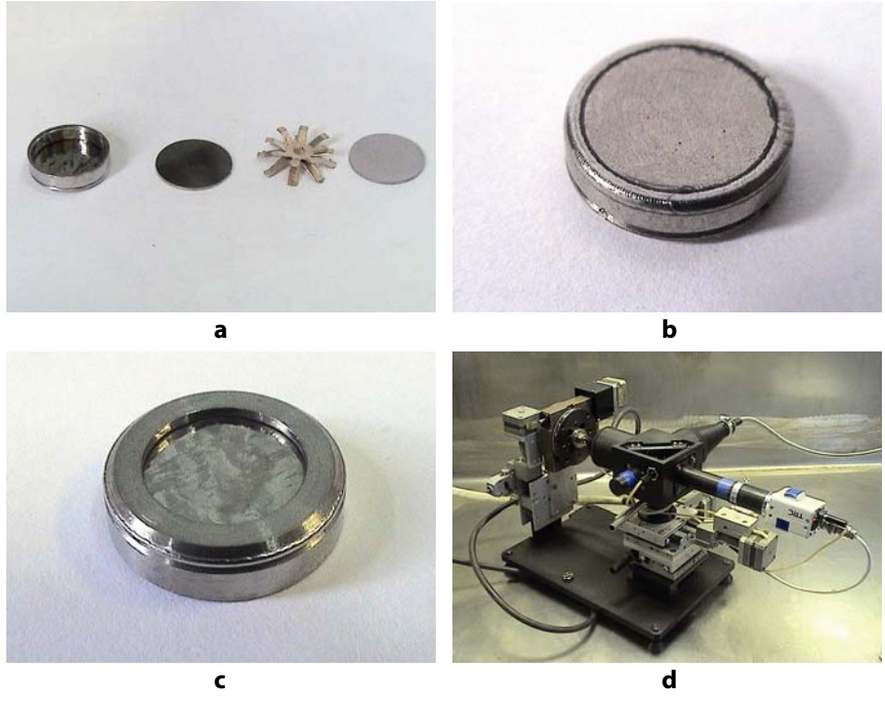
These nuclides were generated by irradiating targets fabricated in JSC "SSC RIAR" on the basis of isotopes americium-243, curium-245, 248, 249 and californium-249 highly-enriched in calcium-48.

To synthesize the absent element 117, one needs to have a weight amount of $_{97}Bk^{249}$, of which generation is complicated.

RIAR successfully met the challenges related to the fabrication of a target based on highly-enriched $_{97}Bk^{249}$. Berkelium was applied on titanium foil segments by electrochemical deposition using aprotonic electrolytes. Targets fabricated at JSC "SSC RIAR" were successfully used at the Flerov's Laboratory of Nuclear Reactions, JINR, to generate element 117.

SEALED ^{244}Cm-BASED ALPHA-SOURCE FOR SPACE-RELATED RESEARCH

Alpha-emission sources are used in the X-Ray spectral analysis for the express study of a substance sample in the laboratory and field conditions. The spectrometric characteristics of open alpha-sources may change due to the interaction of the active part with air radiolysis products that cause the degradation of their ecological safety. To have the source properties stable, the surface of its active should be is isolated from the environment by plating a protective coating that, however, should not change significantly the key characteristics of the source – alpha-particles yield and alpha-line half-width.



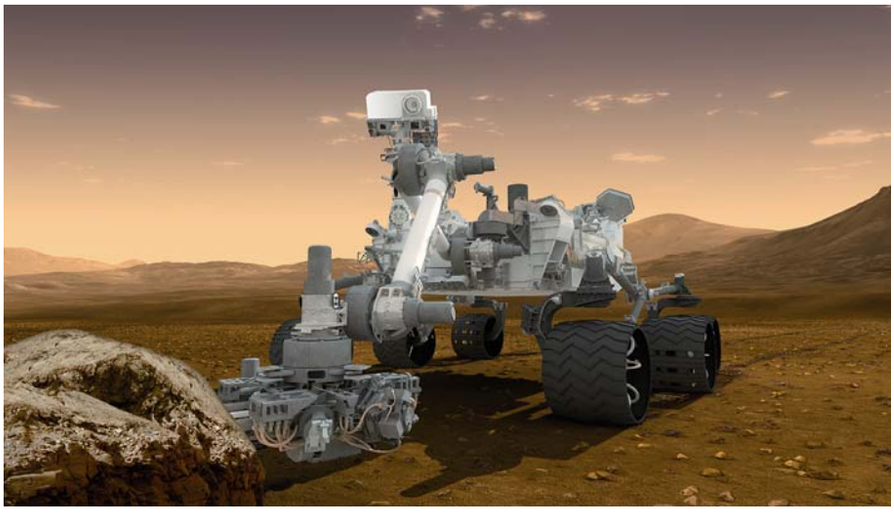
a **b**

c **d**

Alpha-emission source: a – body, active part, spring washer and plug; b – end surface; c – exit window made from titanium foil 3 mm thick, d – laser facility "KVANT-15"

JSC "SSC RIAR" studied a possibility to plate silicon oxide and metal aluminum coatings. However, since these coatings exfoliated, a sealed source design was selected, of which body and exit window were made from titanium that has a high chemical resistance.

When developing a sealed source design, sealing modes were tried out and quality of welded joints was analyzed. The body, foil and washing were welded at the laser welding facility using helium as protective gas.



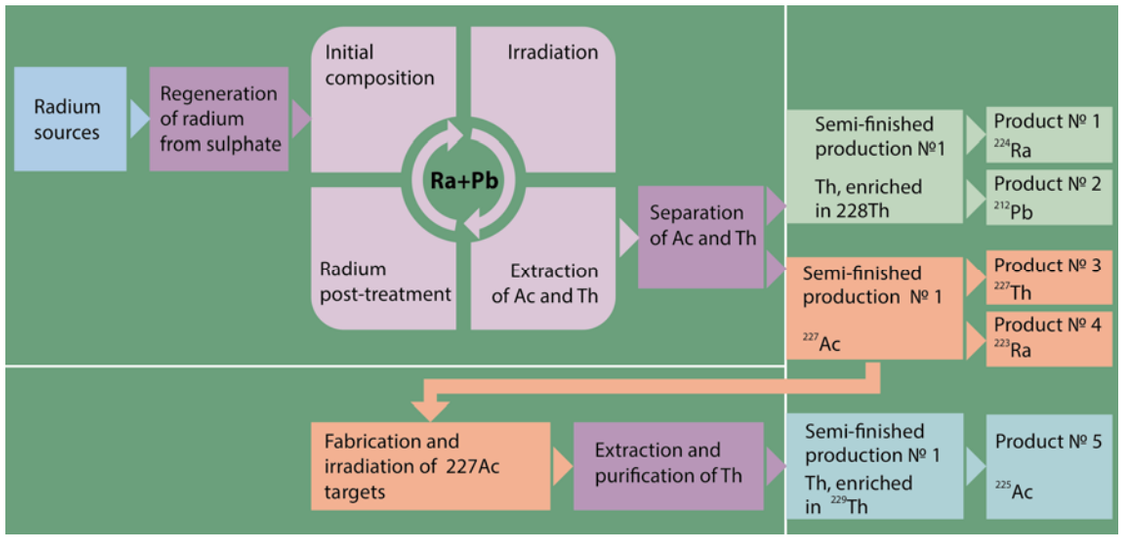
NASA Mars Science Laboratory Curiosity Rover

Curium-244 sealed sources of about 370 MBq (10 mCi) activity were used at the alpha-proton-X-Ray spectrometer installed at the NASA Mars Science Laboratory Curiosity Rover, which successfully landed the Mars surface on August 6, 2012. The spectrometer was successfully tested on September 11.

CYCLING PRODUCTION OF ACTINIUM-227 AND THORIUM-228, 229 FROM RADIUM-226

Radionuclide therapy by short-lived alpha-emitting radionuclides such as actinium-225, bismuth-212, 213, radium-223, lead-212, etc. is considered to be one of the promising methods to treat cancer.

One of the ways to produce these radionuclides is irradiation of radium-226 in a high-flux reactor, where actinium-227, thorium-228 and thorium-229 are accumulated and can be used as mother isotopes to produce alpha-emitters.



Cycling production of actinium-227 and thorium-228, 229 from radium-226

To produce thorium-229, a production process was selected involving irradiation of radium targets to accumulate actinium-227 (20–30 days). A part of actinium is used to produce radium-223 and thorium-227 while the other part is used to fabricate actinium targets and irradiated them in a reactor.

When irradiating actinium-227, a mixture of isotopes is generated enriched in thorium-229. This mixture can be used to generate actinium-225. A mixture of thorium isotopes generated at the first stage with a relation ^{228}Th:^{229}Th about 7:1 can be used to produce radium-224.

Trial irradiation of radium targets was performed at reactor SM. The initial composition was made by co-precipitation of radium carbonate and lead carbonate with further calcination. The excess of lead oxide is used as a diluter that allows decreasing the self-shielding effect and enlarge the specific yield of radium activation products.

After the radiochemical reprocessing of irradiated targets, a yield of radium activation products was determined.

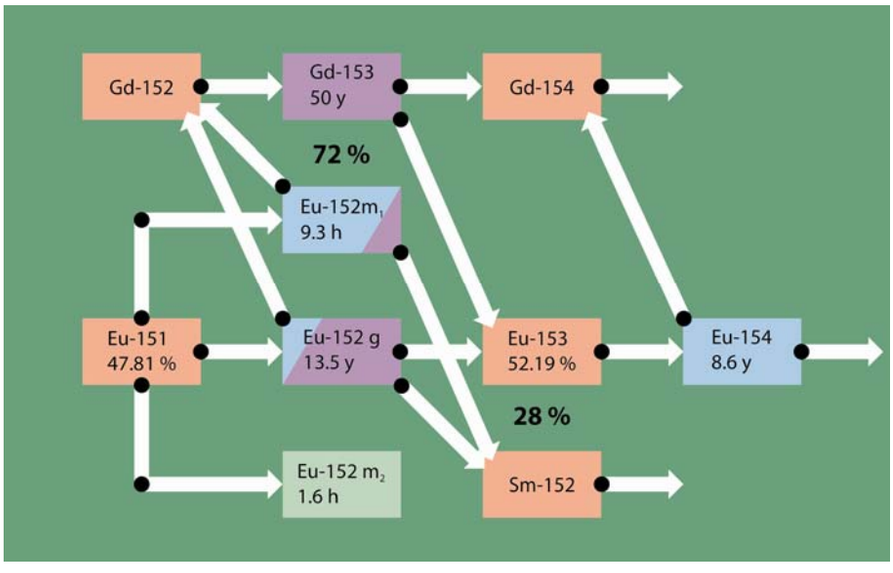
Activities of basic components in irradiated radium target

Isotope	Experimental values per a yield of 1g of radium-226, GBq	
	Target 1	Target 2
Actinium-227	78	98
Thorium-228	$1.5 \cdot 10^{3}$	$1.3 \cdot 10^{3}$
Thorium-229	0.59	0.035
Thorium-230	$1.12 \cdot 10^{-3}$	$5.69 \cdot 10^{-4}$

The produced isotopes will be used to generate short-lived alpha-emitting radionuclides for nuclear medicine purpose. Further research will focus on full-size experiments.

PRODUCTION OF SAMARIUM-152

For the first time, JSC "SSC RIAR" produced and delivered samarium-152 with the key isotope mass fraction of 99.37 % (to compare: samarium-152 enriched by mass-separation is usually 96–97 % enriched).



Transmutation of nuclei when irradiating europium in a nuclear reactor

During the reporting period, two patents on inventions were taken out based on the results of activities performed at the Radionuclide Sources and Radiochemicals Division.

3.3.

MANAGEMENT OF PRODUCTION ACTIVITIES

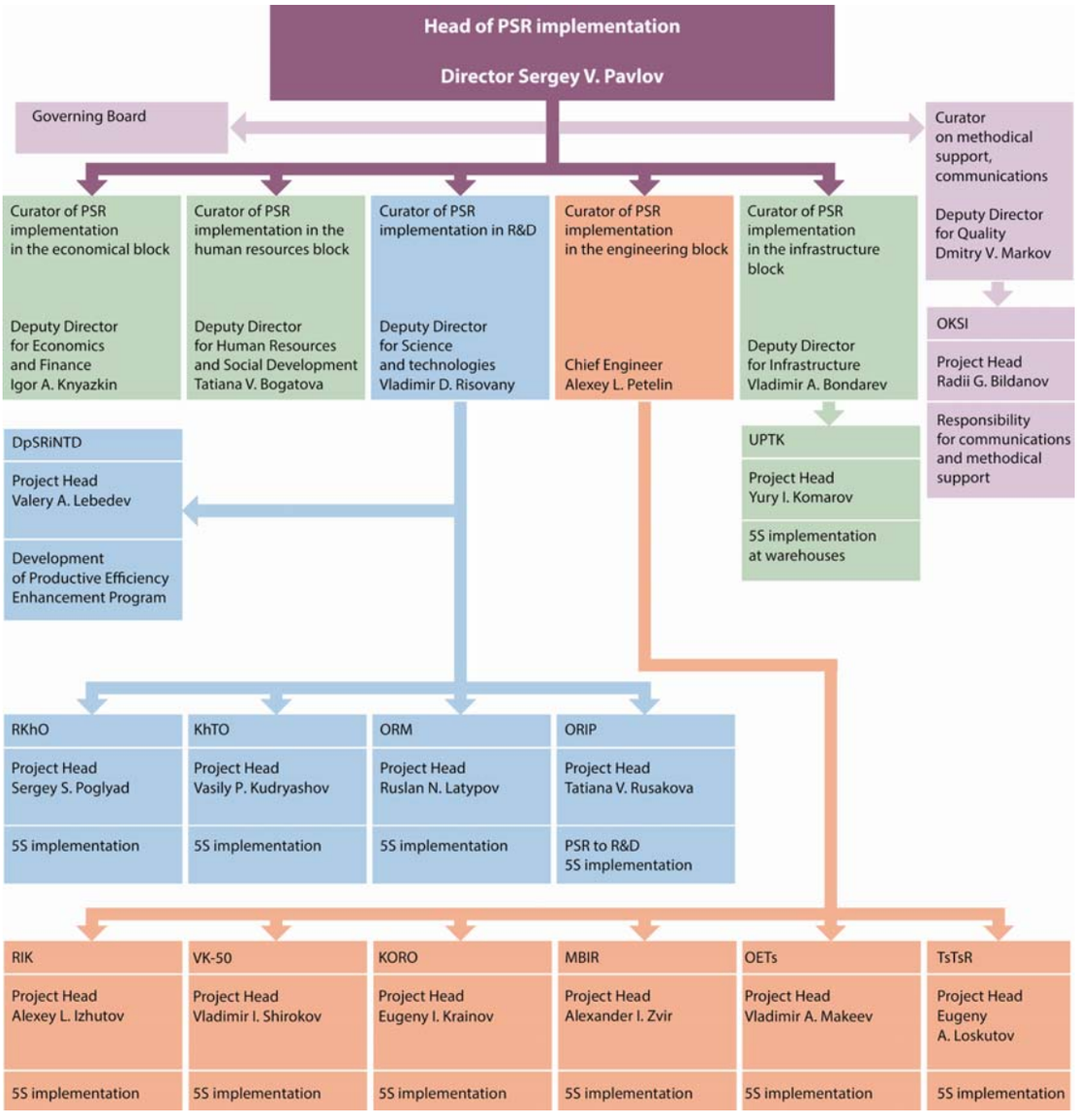
The key task of the production activities management system is strengthening of JSC "SSC RIAR" positions as a leading organization of ROSATOM in the research related to the nuclear technologies development. To meet this task, JSC "SSC RIAR" implements a number of projects on IT-based management and improvement of the production activities manageability.

IMPLEMENTATION OF PRODUCTION SYSTEM "ROSATOM"

In 2012, as per Order No. 39 as of January 25, 2012 "On work activity management to promote the Production System "ROSATOM" at JSC "SSC RIAR", activities were started to implement the Production System "ROSATOM" (PSR) that will allow increasing the production efficiency and quality, diminishing costs and satisfying to the maximum the Customer's requirements. The application of PSR tools conduces a reduction of processing time and decreasing cost of work performance due to more effective process management.

In June 2012, Mr. S. Obozov, Director of PSR Development visited JSC "SSC RIAR"; in July, Heads of PSR Projects Mr. A. Divaev and Mr. P. Sosnovskikh visited the RIAR's Departments and were shown hot cells. These working visits resulted in the interaction between the specialists on sharing positive experience in the PSR implementation (for instance, as applied to hot cells). Pilot PSR projects on R&D were proposed as well. A PSR promotion project at the equipment assembly area was elaborated; measure were initiated to define possible ways of improving the efficiency of hot cells from the viewpoint of increasing the periods of accident-free operation and diminish the cost and time of repair.

Order No. 485 as of June 22, 2012 "On Further PSR Implementation at JSC "SSC RIAR"" defines the key directions of activities and approves a new PSR Implementation Project management structure.



Organization chart of PSR implementation management at JSC "SSC RIAR"

A number of pilot areas were defined, where 5S System was implemented in 2012: pilot-experimental workshop and centralized repair workshop. The project implementation also covered other departments, where working groups were formed to practically implement PSR and develop activities on the 5S implementation.

As per Order No. 629 as of July 31, 2012 "On PSR Implementation into R&D", curators and supervises were appointed to optimize the creation of values in R&D and the following PSR projects were launched:

- Try out of technical solutions of reprocessing of dense nitride fuel (Curator – Director of Radiochemical Division, Supervisor – Head of Development Bureau.
- Experimental justification of technical solutions on the MBIR core design (Curator – Fist Deputy Director, Chief Engineer, Supervisor – RRC Deputy Chief Engineer).
- Pilot startup and production of molibdenum-99 in compliance with the international requirements (Curator – Director of Radionuclide Sources and Radiochemicals Division, Supervisor – Head of Facility.

During the reporting period and during the whole period of the PSR implementation, RIAR specialists were trained. The JSC "PSR" representatives held a training workshop; 80 RIAR specialists were engaged.

PRODUCTIVE EFFICIENCY IMPROVEMENT PROGRAM

To implement PSR at JSC "SSC RIAR" and increase the R&D efficiency, a decision was taken in 2012 to develop and implement a productive efficiency improvement program.

As per Order No. 639 as of August 03, 2010 "On a working group to develop the productive efficiency improvement program", the working group comprising 16 specialists was formed from among specialists from 14 Departments of JSC "SSC RIAR" under the supervision of the Head of Department for Strategic Development and Research Activities. Deputy Director for Science and Technologies was charged with supervising the execution of the Order and performance of activities regarding the development of the productive efficiency improvement program related to the R&D services.

The working group members developed and approved a detailed plan of the productive efficiency improvement program at JSC "SSC RIAR". For the above purpose, the following activities were carried out:

– analysis of the R&D-related technological and managemental processes;

– development of the R&D diagram in the form of a flow of activities related to the values creation

– diagnostics of R&D-related processes in the key departments of Institute revealed some obstacles preventing the productive efficiency to be improved and cost to be diminished ;

– mapping and optimization of value creation flows was performed in a number of departments to improve the R&D processes efficiency; causes were revealed preventing the productive efficiency to be improved and cost to be diminished and proposals to eliminate these causes or decrease their influence were formulated.

The work progress in 2012 consisted in the development of a Project Plan "Arrangement of R&D Projects Management System at JSC «SSC RIAR»", of which implementation will provide the Institute with a comprehensive methodological and instrumental base allowing a significant improvement of the research and commercial activities efficiency based on the project-process approach to the R&D activities.

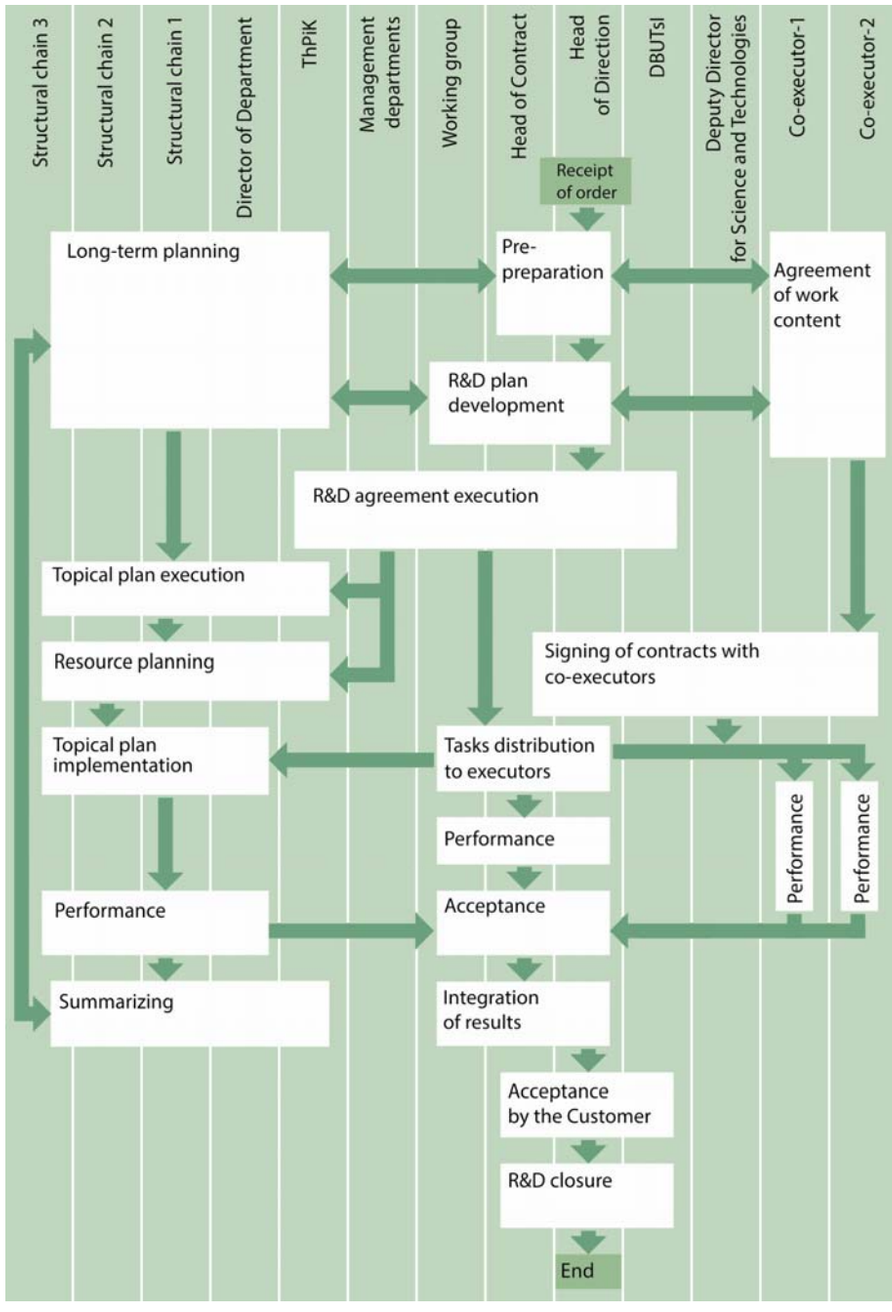


Diagram of the R&D process in the form of work flow on the value creation for the Customer

3.4.

RESULTS OF INVESTMENT ACTIVITIES

The JSC "SSC RIAR" investment activity was aimed at the achieving the ROSATOM strategic objects. The key decisions that defined the most important tasks related to the strategic objects achievement were made by the Board of Directors and industry authorities and supported at the federal level.

The JSC "SSC RIAR" investment program includes projects optimal in financial and risk indicators and able to strengthen the financial stability of the Institute through the implementation of investment programs. In 2012, the investment projects were actualized till 2017.

The total costs of JSC "SSC RIAR" for the investment activity in 2012 made up 1 386.3 mln RUR, including 92.1 % for the engineering base upgrading.

Informaiton on investment activities

Indicator	Values per years		
	2010	2011	2012
Funds allocated to the investment policy, mln RUR	650.6	1 586.2	1 386.3
Capital investments to production capacity, mln RUR	507.8	1 329.9	1 276.7
Funds allocated to the engineering base upgrading, %	78.1	83.8	92.1

KEY INVESTMENT PROJECTS OF JSC "SSC RIAR"

UNDER THE FEDERAL TARGET PROGRAM "NUCLEAR POWER TECHNOLOGIES OF NEW GENERATION FOR THE PERIOD 2010–2015 AND UNTIL 2020"

CONSTRUCTION OF MULTI-PUROSE FAST TEST REACTOR MBIR

The Project provides the development of design documents for a multi-purpose fast test reactor and its construction. The key Project task is to upgrade the experimental base of nuclear power engineering. The MBIR reactor will replace research reactors with exhausted lifetime and allow the following experiments to be held:

- tests of advanced fuels with high burnup;
- study of fuel rods and FAs behavior under transient, cyclic and accidental conditions to increase the reliability and safety of nuclear reactors;
- tests of advanced structural materials to provide a long-term operation of reactor components;
- tests of new radiation resistant materials to provide the minimal deformation and high strength and plasticity;
- tests of ferritic-martensitic steels and special-purpose heat-resistant materials able to operate at high temperatures, so as to improve the economical efficiency and provide long-term operation of nuclear reactors;
- applied research;

The reactor will accumulate isotopes and ionizing beams will be used for medical purposes.

CONSTRUCTION OF POLY-FUNCTIONAL RADIOCHEMICAL COMPLEX

The Project covers the construction of a pilot semi-commercial complex for experimental and pilot justification and trial of advanced pyrochemical technologies for closed fuel cycle.

TECHNICAL UPGRADING OF FUEL COMPLEX FOR FUEL ASSEMBLIES PRODUCTION

The Project focuses on the technical upgrading of the JSC "SSC RIAR" base to produce fuel assemblies with granulated MOX fuel for fast reactors.

TECHNICAL UPGRADING OF 60MW FAST TEST REACTOR

The Project focuses on the technical upgrading and inspection of reactor BOR-60 to extend its lifetime. It will improve the reactor safety and enlarge its capabilities to provide the experimental justification of key parameters of Gen-IV reactors, their nuclear safety and fuel cycle as well as allow the challenges of the nuclear power engineering to be successfully met regarding the innovative projects of future NPPs.

UNDER THE FEDERAL TARGET PROGRAM "PROVISION OF NUCLEAR AND RADIATION SAFETY FOR 2008 AND UNTIL 2015"

PROVISION OF NUCLEAR AND RADIATION SAFETY AND PHYSICAL PROTECTION

The project comprises major works aimed at the improvement of nuclear and radiation safety on the site and provision of radiation safety outside JSC "SSC RIAR".

UNDER ROSATOM'S PROGRAMS

IMPROVEMENT OF SAFETY AND EFFICIENCY OF JSC "SSC RIAR" EXPERIMENTAL BASE

Activities are aimed at the improvement of the experimental base, bringing the site into the compliance with the up-to-date regulations and requirements as well as replacement of obsolete equipment to enhance the reliability of the site operation and its resistance to external effects. The JSC "SSC RIAR" experimental base is scheduled for upgrading as well as its supporting infrastructure: research, methodological and instrumental base, design activities carried out to study irradiated fuel and structural materials to allow challenges of the nuclear power engineering to be successfully met and Gen-IV innovative reactors to be developed.

INTERNAL INVESTMENT PROJECTS

UPGRADING OF IODINE-131 PRODUCTION FACILITY

The upgrading will result in the facility output of 1.85T Bq (50 Ci) per week (with a six-day calibration) allowing to satisfy completely the domestic demand for the radiochemical and enhance the ROSATOM's export potential.

UPGRADING OF PRODUCTION OF CALIFORNIUM-252 AND OTHER TRANSPLUTONICS

^{252}Cf-based neutron sources have unique characteristics and are essential in many application areas: nuclear medicine, nuclear power engineering, geology, etc. Production of californium-252 is unique and in Russia is only possible in high-flux reactor SM in JSC "SSC RIAR". The upgrading will result in the transplutonics production that will meet the efficiency and safety requirements and provide a stable production of californium-252 as well as americium-243, curium-244, curium-248 and berlium-249.

UPGRADING OF COBALT-60-BASED SOURCES PRODUCTION FOR MEDICAL PURPOSES

^{60}Co-based gamma sources are particularly used for cancer radiotherapy. The upgrading will allow increasing the output.

PLANS FOR 2013

In 2013 JSC "SSC RIAR" plans to actively continue implementing the existing projects and develop new ones and regulate its investment activities by using internal rules on investment activities management.

3.5.

INTERNATIONAL COOPERATION

2012 was a landmark in the JSC "SSC RIAR" international research activities: new areas of cooperation grew rapidly both under the intergovernmental agreements signed in the last several years and in the frame of the ROSATOM international economic activity.

KEY AREAS OF JSC "SSC RIAR" INTERNATIONAL COOPERATION

Among key areas of the international cooperation, the following activities should be mentioned:

- reactor material science, techniques to test reactor materials and core components;
- physics, engineering of nuclear facilities, irradiation technologies, conversion of research reactors;
- safety of nuclear reactors and nuclear power engineering ;
- radiochemistry and fuel cycles; advanced research in the closed fuel cycle;
- radionuclide sources and radiochemicals, production of radionuclides for nuclear medicine;
- improvement of physical protection, account and control of nuclear materials under the international technical support programs.

Following the 2012 results, research in and tests of nuclear fuel and core structural materials for advance reactors were in the greatest demand in the world's nuclear market. JSC "SSC RIAR" cooperates with research centers, laboratories and industrial companies from the USA, Europe, Japan, South Korea, China and other countries.

KEY INTERNATIONAL PARTNERS

TerraPower, LLC (USA) and ROSATOM cooperate on the development of an innovative nuclear fast sodium-cooled reactor "Travelling Wave Reactor" (TWR). JSC "SSC RIAR" is the leading organization that coordinates the feasibility study. Technical solutions were developed for irradiation rigs as well as irradiation scenarios with intermediate removal of samples for examination. The structural materials samples are to be irradiated in the BOR-60 reactor under the parameters required by the Customer. The Project cost estimates were done and a long-term contract amounting to 38 million USD was signed.

The US Department of Energy cooperates with JSC "SSC RIAR" in the irradiation of advanced materials in the BOR-60 reactor. The US side provided a revised test matrix and PIE plan to be included in a ten-year R&D program. The test matrix includes the target dose, temperature, geometry and types of samples.

AREVA NP (France) is the Customer of comprehensive post-irradiation examinations of zirconium alloys samples irradiated in the BOR-60 reactor.

Commissariat a l'Energie Atomique (France) collaborates with JSC "SSC RIAR" in the implementation of Project "Study of radiation resistance of structural materials for fast reactors" that covers irradiation of 60 structural materials samples in the BOR-60 reactor under the maximum damage dose of about 85dpa with an intermediate removal/insertion of a part of samples.

Korean Atomic Energy Research Institute (South Korea) provided an experimental fuel assembly with uranium-zirconium metal fuel to be irradiated in the MIR reactor and then tested. The experiments under simulated RIA conditions are carried out together with FSUE "RFNC – VNIIEF". Unirradiated reference samples were delivered.

Argonne National Laboratory (USA) is the Technical Coordinator of the RERTR Program in Russia. The Basic Ordering Agreement and Work Orders were signed covering comprehensive research in MIR reactor conversion to low-enriched fuel, including the identification of low-enriched fuel and fuel assembly suitable for conversion. The key terms and conditions of the Agreement as well as technical and financial proposals were agreed with the Customer under the tripartite cooperation between JSC "SSC RIAR", Argonne National Laboratory and TVEL, JSC on the manufacture of experimental fuel assemblies IRT-3M with uranium-molybdenum fuel with nominal enrichment of 19.7 % in ^{235}U and their irradiation in research reactor MIR.

NEW AREAS OF COOPERATION

One of the important areas of cooperation is the development and construction of the multi-purpose fast test reactor MBIR. At the current stage, the MBIR-related activities are focused on the elaboration of a plan to establish an International MBIR-based Center of Excellence to carry out R&D in the field of nuclear-power engineering. On June 25, 2012, ROSATOM held a meeting for potential MBIR users, where the participants discussed the establishment of the International Center of Excellence. In November 2012, Agreement on the MBIR Project was signed between the US Department of Energy, ROSATOM and Commissariat a l'Energie Atomique.

In November 2011, in Hanoi, Agreement between the Socialist Republic of Vietnam and Russia was signed on the establishment of the Center for Nuclear Science and Technologies in Vietnam. The executors from the Russian side are Joint Engineering Company "ASE-NIAEP" (general designer), JSC "GSPI" (project designer), JSC "NIKIET" (chief designer) and JSC "SSC RIAR" (scientific supervisor). The project will be implemented at two sites: Da Lat and Hanoi. The intergovernmental agreement also covers the construction of Ninh Thuan NPP with two power blocks.

The construction of the first block is scheduled for 2014 and its commissioning – for 2020. In June, 2012, the Vietnam representatives visited JSC "SSC RIAR" to discuss the ROSATOM's proposals on the equipping the Center for Nuclear Science and Technologies. On October 25–27, 2012 in Hanoi, the Nuclear Power International Exhibition was held, where the Russian and Vietnam sides negotiated the technical issues of the construction of Center for Nuclear Science and Technologies.

SIGNIFICANT EVENTS IN THE INTERNATIONAL COOPERATION

In 2012, International Conference "ATALANTE-2012" devoted to the issues of fuel cycle and radwaste management was held in Montpellier, France. During this conference, such countries as France, USA, India, China and Japan voiced their strategies of the nuclear power engineering development. Vyacheslav Pershukov, Deputy Director General, Director of Innovations Management Block presented the ROSATOM's strategy in the fuel cycle management focusing on its back-end using new fast reactor technologies. JSC "SSC RIAR" has a unique experience in operating fast reactors and carries out research in the promising technologies of closed fuel cycle.

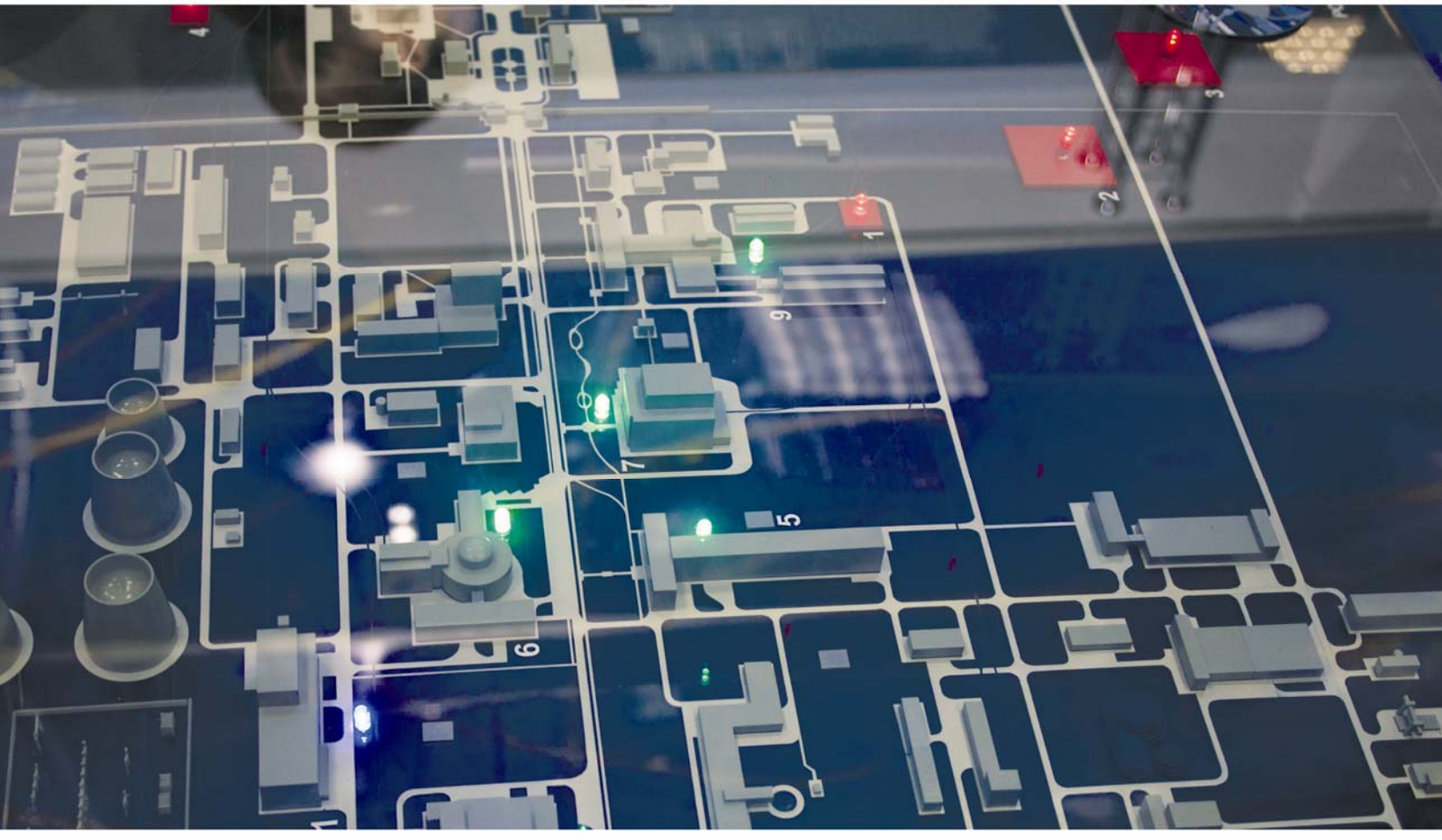
On August 6, 2012 at 9.30 am (Moscow time), the NASA's "Curiosity" rove landed successfully the Mars surface in the Gale crater. The rover was fired in November 2011 to search for waster or its traces. The rover is equipped with ten research devices, including the APXS spectrometer equipped with sealed ^{244}Cm-based alpha-sources developed and fabricated at JSC "SSC RIAR".

The second line for the molybdenum-99 production (ITD production) was tested and adjusted. In the first half of 2012, the process equipment was mounted, start-up work was carried out, test batches were produced and equipment was debugged. Trial delivery was started. As soon as the facility is brought to the designed capacity, JSC "SSC RIAR" will be able to bring to the market up to $3.7 \cdot 10^{13}$ Bk (1000 Ci) of molubdenum-99 per week using highly-enriched uranium targets. The first line is ready for regular operation since March 2012. As noted by Vyacheslav Pershukov, Deputy Director General, Director of Innovations Management Block, ROSATOM at the 1st International Business Conference For Isotope Providers, Suppliers And Consumers: "…a new technology was developed in the course of implementation, which will be formalized together with our German colleagues".

Project "Upgrades of the Physical Protection of the JSC "SSC RIAR" Perimeter" was completed. It was a five-year project implemented with the participation of FSUE SNPO ELERON and other Russian and German organizations. The Project was implemented under the Agreement between the Governments of the Federal Republic of Germany and the Russian Federation on the Assistance for the Russian Federation in Elimination of Nuclear Chemical Weapons and Agreement between the RF Ministry of Atomic Energy and Ministry of Foreign Affairs of Federal Republic of Germany on the Collaboration in the Safety Provision in Nuclear Weapons Elimination. In the course of the visit, the specialists from the Ministry of Foreign Affairs, Federal office on the Delivery and Development of Munitions and Company for Reactors Safety (GRS) carried out the financial and technical inspection: the Agreement was executed in full scope and in compliance with the regulations for physical protection of nuclear facilities approved by the RF Government.

On October 22–23, 2012 in China, the Beijing CIAE-RIAR Radioisotope Technology Co., Ltd celebrated its 20-year anniversary. The effective cooperation of these organizations in the production and commercialization of radioisotope sources for medical and industrial purposes as well as gain in sales on the Chinese market allow a decision to be taken about the prolongation of cooperation for the next ten years – until September 29, 2022. Employees contributed significantly to the company development were awarded by the ROSATOM's Awards. An Agreement was signed between JSC "Science and Innovations", and China Isotope&Radiation Corporation to join efforts in the radioisotopes and radiation technologies, production and equipment delivery.

Signing of Agreement between JSC "Science and Innovations" and China Radioisotope&Radiation Corporation



4 SUSTAINABLE DEVELOPMENT RESULTS

PUBLIC
ANNUAL REPORT
2012
OF STATE SCIENTIFIC CENTER –
RESEARCH INSTITUTE
OF ATOMIC REACTORS

From JSC "SSC RIAR" viewpoint, **sustainable development is** a series of consistent and interdependent activities in the field of business, environmental control and human resources management. They are motivated by values and aimed at achieving strategic objectives by the Institute providing for safety arrangements and competitiveness promotion of its products, optimized use of resources and personnel competence enhancement.

4.1.

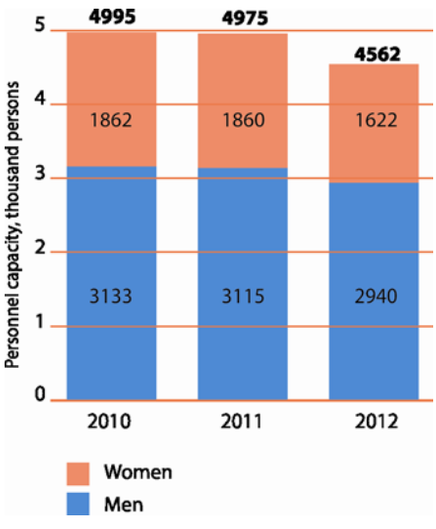
PERSONNEL MANAGEMENT AND SOCIAL POLICY

The greatest value for JSC "SSC RIAR" is a team of highly competent specialists. They have been contributing to prominent success of the enterprise for many years.

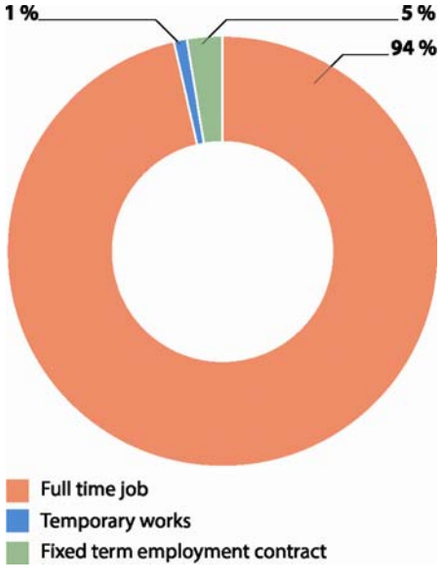
In so doing, standards of personnel proficiency maintenance, education, continuing development of competence, motivation, implementation of social programmes and teaching of social responsiveness are among the most important parts of social policy at the Institute.

CHARACTERIZATION OF JSC "SSC RIAR" STAFF

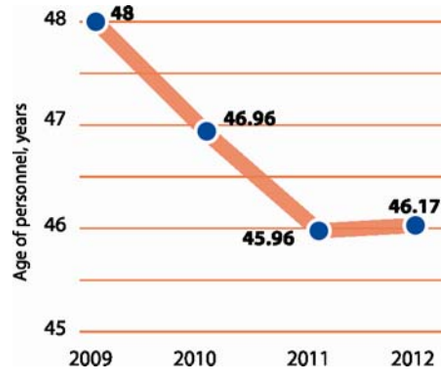
As of December 3, 2012 headcount accounted for 4 562 people at RIAR. There was a cutting down on staff by 8.3 % compared to 2011 due to staff optimization in 2012 as a result of non-core assets divesture. An age profile and educational level of RIAR personnel became also different.



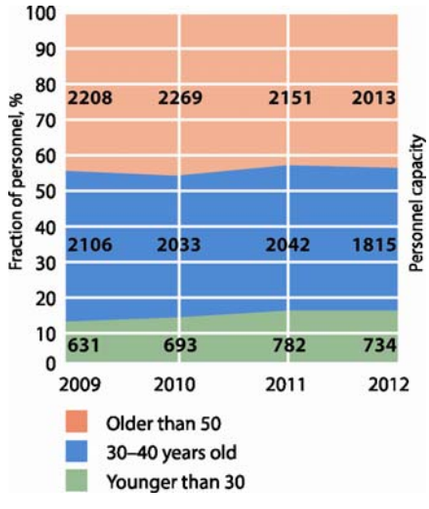
Dynamics of headcount with reference to gender



Total labor force with the breakdown by employment contracts



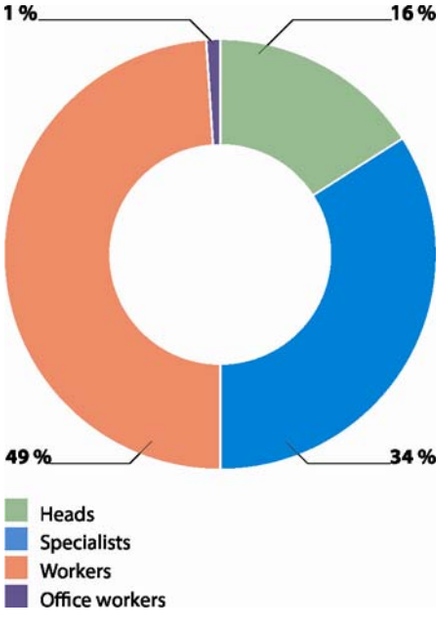
Changes in average age of personnel



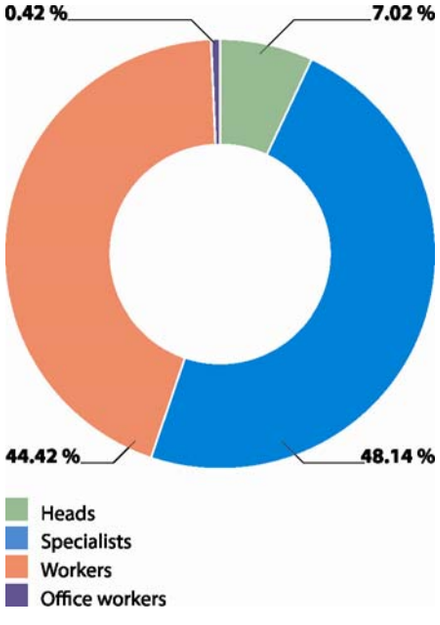
Dynamics of headcount with reference to age

Breakdown of employees by gender and age

Staff categories	Gender	Age			Total	Percent of staff members, %
		under 30	30–50 year	50 year and older		
Deputy Directors	Female	0	1	0	1	0.02
	Male	0	3	3	6	0.13
Other executives	Female	3	86	95	184	4.03
	Male	22	192	324	538	11.79
Professional staff	Female	156	336	291	783	17.16
	Male	202	279	278	759	16.64
Workpeople	Female	44	281	306	631	13.83
	Male	303	631	687	1621	35.53
Percent of staff members, %	Female	3	2	19	24	0.53
	Male	1	3	10	14	0.31



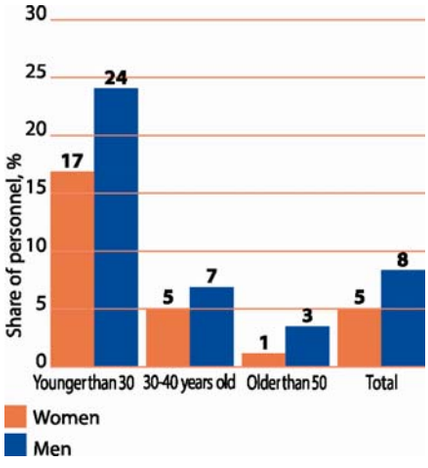
Educational level of staff



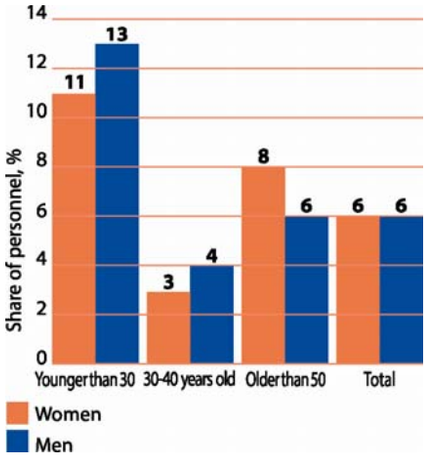
Educational level of newcomers on the right side of 35

TURNOVER OF PERSONNEL

In 2012 JSC "SSC RIAR" gave employment to 638 employees (14 % of the headcount at the year-end), disemployed 736 staff members for a number of reasons but 449 people among them were disemployed because of divesting non-core assets. In doing so, 287 staff members were disemployed (6 % of the headcount at the year-end) due to reasons other than reorganization of RIAR.



A share of employees who were given employment in 2012 with the breakdown by gender and age



A share of employees who were disemployed in 2012 with the breakdown by gender and age*

According to the labor agreement, a notification of employees regarding any major changes in RIAR activities takes at least 2 months as the RF legislation states.

* Without including employees transferred out to ROTEKS, LLC and RIAR-GENERATsIYa, LLC.

TARGET TRAINING OF PERSONNEL

To implement major projects aimed at RIAR development, it is necessary to have highly competent personnel that is why RIAR management team devotes increasing attention to staffing issues in terms of sustainable recruiting. Recruiting recent graduates to RIAR is a multiple task that calls for methodic work of different divisions and departments at the Institute.

The first stage of this work is campaigning and occupational guidance programmes for high schoolers in Dimitrovgrad to inform them about prospects of higher and intermediate vocational education with the specialties in demand at RIAR. Such work will enable recruiting full-time personnel among the residents in future. That is why the management team, personnel and communications departments take in active part in Doors open days both in Dimitrovgrad and Ulyanovsk at the premises of Dimitrovgrad Branch of National Research Nuclear University "MEPhI", Ulyanovsk State University and Ulyanovsk State Technical University. For the same reason, JSC "SSC RIAR" regularly organizes technical visits to the site. Annually, six or seven hundred students from Dimitrovgrad and Ulyanovsk region as well as from the nearest-neighbor regions, for example, Samara and the Republic of Tatarstan visit RIAR.

Moreover, the Child Nuclear Academy was established and has been successfully functioning for many years in Dimitrovgrad. Its major objective is advanced purpose-oriented study of physics, chemistry, information processing technologies and foreign languages. The idea of its establishment was initiated by General Director for JSC "SSC RIAR" Mr. A. Bychkov (at present Deputy Director General, Head of the Department of Nuclear Energy, IAEA). He was also its Founder. The Child Nuclear Academy aims at amplifying motivation towards knowledge acquisition and creative work, providing additional facilities for educational needs of children and adolescents for extracurricular and leisure-time activities. Classes of the Child Nuclear Academy extend far beyond the scope of general school educational development program, make it possible to broaden schoolchildren's minds, involve them in research activities and apply knowledge acquired at school to state-of-the-art technologies and scientific research work. The lecturing staff of the Child Nuclear Academy is both scientific employees of JSC "SSC RIAR" and lecturers from universities in Dimitrovgrad, Ulyanovsk, Moscow and leading scientists of the Russian Federation.

The main factor demonstrating RIAR's activities in this area is the employer-sponsored education of school leavers in top universities of the Russian Federation to attend courses of study and get qualifications to be in demand at RIAR at institutions of higher professional education. In 2012 such assignment documents were given to 104 school leavers in Dimitrovgrad and 96 applicants entered universities to advance in education. It is worth saying that 63 applicants among them entered Dimitrovgrad Branch of National Research Nuclear University "MEPhI".

The next step in developing human resources for RIAR employment is a cooperative interaction with universities in the field of target training for future specialists. Such interaction implies that RIAR will take part in joint research programs in addition to basic educational programmes. At present, RIAR has entered in fourteen (14) cooperative agreements with the following Universities:

1. National Research Nuclear University "MEPhI";
2. Dimitrovgrad University of Technology and Engineering – a Branch of National Research Nuclear University "MEPhI";
3. Obninsk Institute for Nuclear Power Engineering – a branch of National Research Nuclear University "MEPhI";
4. Seversk State Academy of Technology National Research Nuclear University "MEPhI";
5. Lomonosov Moscow State University;
6. Ural Federal University named after the first President of Russia Boris Yeltsin;
7. National Research Tomsk Polytechnic University;
8. Ulyanovsk State University;
9. Ulyanovsk State Technical University;
10. Kazan State Power Engineering University;
11. Admiral Makarov Maritime and Inland Navigation Fleet.

Moreover, RIAR concluded long-term cooperative agreements with Ulyanovsk State University and Ulyanovsk State Technical University to provide a target-oriented training on a contractual basis for future highly trained specialists to be employed by ROSATOM Institutions with due consideration for specific interests of RIAR to a greater extent.

Given below are the main trends of collaboration:

1. Use of JSC "SSC RIAR" site for all types of introduction training, training at production facilities, training pertaining to scientific and research work, and undergraduate training.

In 2012 two hundred thirty three (233) students came to RIAR from different institutions of higher education and twenty six (26) students among them were in undergraduate training and did graduation projects. Sixty seven (67 %) percent of students who came to the institute to do training in 2012 were from domestic institutions of higher education.

2. Involvement of leading researches and experts in teaching (lectureship, tutorial and laboratory-based work).

In 2012 there were twenty nine (29) staff members of JSC "SSC RIAR" among faculty members at Dimitrovgrad University of Technology and Engineering – a branch of National Research Nuclear University "MEPhI" and sixteen (16) staff members at Ulyanovsk State University. To enhance efficiency and provide a target-oriented training, a decision was made to establish primary departments headed by RIAR staff, for example Mr. S. Pavlov (Dimitrovgrad University of Technology and Engineering) and Mr. V. Risovany (Ulyanovsk state University). These departments are successful. Leading researches and experts of RIAR are among the members of State examination boards and professional licensing boards so that to monitor quality of students training.

According to the record for 2012, the primary department "Radiation Engineering" at Ulyanovsk State University was awarded with a diploma "Golden Department of the Russian Federation" of the RF Academy of Natural Science and with a Quality Award of Chamber of Science and Industry. The department chair (Mr. V. Risovany) was given a Quality Award and Gold Medal of the Chamber of Science and Industry.

3. Joint scientific research activities.

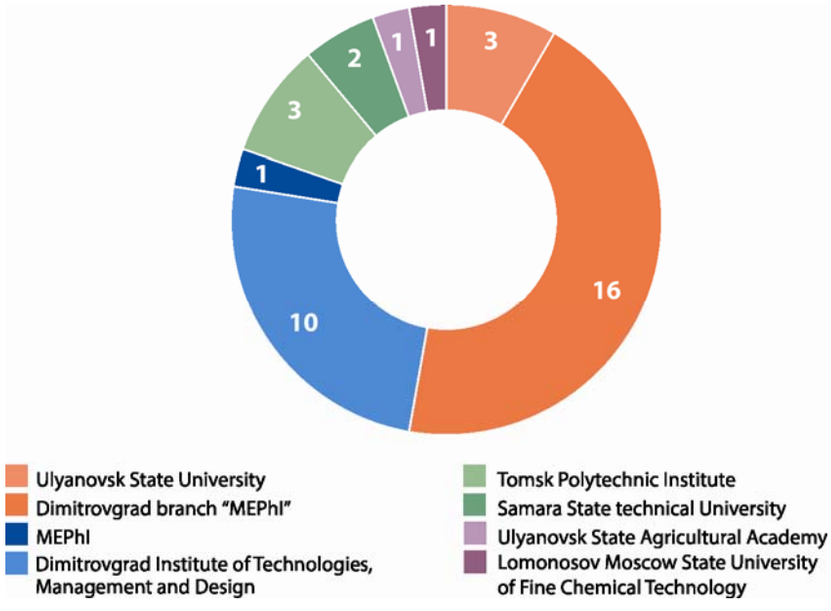
International workshop meeting on nuclear power technologies "Cheremshanskie Chteniya-2012" was held in Dimitrovgrad from April 24 to April 27, 2012 for students, postgraduate students, young scientists and recent graduates under the auspices of ROSATOM, Russian Foundation of Basic Research, Ulyanovsk Region Government and "Sosny" R&D Company. One hundred thirty (130) papers were presented during the workshop from twenty six (26) scientific and educational institutions of the Russian Federation and non-CIS States. JSC "SSC RIAR", National Research Nuclear University "MEPhI" and its branch Dimitrovgrad University of Technology and Engineering hosted this workshop meeting.

Joint scientific and research projects provide a unique opportunity to involve university students in research activities specific to RIAR. In years past such collaboration was implemented in Research and Educational Centers, which had been established within the framework of Federal Targeted Program "Scientific brainpower, academic and teaching staff of innovating Russia for 2009–2013".

In 2010–2012 RIAR entered into collaboration and carried out an integrated project "Fabrication of control and safety rods with enhanced operational performance for Generation IV operating innovative nuclear reactors" with Ulyanovsk State University within the framework of the RF Government decree No. 218 of April 9, 2014 "Concerning measures of State support for developing cooperation between Russian institutions of higher education and institutions implementing integrated projects in high-tech industries". In 2012 this joint work resulted in publishing twenty two (22) articles in foreign and domestic top journals, two monographs, and one student book. Three applications were also submitted for patents and two patents of inventions were issued.

In 2012 a joint project of RIAR and Ulyanvosk State University "All-round modernization and development of reactor production of radionuclides at JSC "SSC RIAR" in order to promote development of nuclear medicine and radiation technologies" was supported by Ministry of Education and Science that held a competitive tender pursuant to the RF Government order No. 1040 of October 12, 2012 "On making changes to the RF Government Decree No. 218 of April 9, 2010". This project will be implemented in 2013–2015 and enable constructing new production facilities for radioisotopes ^{75}Se, ^{153}Gd, ^{192}Ir and ^{98}Sr at the RIAR site.

Such activities allow RIAR to have a continuous influx of recent graduates. In 2012 JSC "SSC RIAR" employed 37 recent graduates from universities.



A number of graduates who found employment at JSC "SSC RIAR" in 2012

In 2012 a total number of young staff members employed by JSC "SSC RIAR" was 304 people under 35 years of age: engineers – 95; workmen – 192; managers – 17.

Though RIAR practices employment of skilled personnel, it still needs professional engineers. Deficiency amounts to 97 people in 2013.

Staffing requirements of RIAR for 2013

Profession description	Desired number of staff
Industrial chemistry of modern power engineering materials	17
Electronic engineering and automation of nuclear power facilities	8
Machinery and equipment of chemical industry	8
Nuclear reactors and power stations	7
Electric motor drives and automation of industrial-scale plants and process systems	6
Software support of computing equipment and computer-aided systems	6
Physics	4
Electric power generation	4
Mechanical engineering	4
Chemistry	3
Radio engineering	3
Physics of atomic nucleolus and particles	2
Geophysics	2
IT security	2
Radiological safety of man and environment	2
Nuclear safety and non-proliferation of nuclear materials	2
Boiler industry and reactor construction	2
Electrical machinery	2
Welding equipment, techniques and procedures	2
Instrumentation and techniques for quality control and diagnostics	2
Industrial and civil engineering	2
Physics of metals	1
Mechanical science	1
Thermal power plants	1
Materials-handling, construction, road-making machinery and equipment	1
Quality control	1
Computer systems and networks	1
Applied mathematics	1

The next great challenge is to keep recent graduates at the Institute. This problem can be solved by developing and implementing an overall incentive programme for facilitating involvement of recent graduates. The poll's results reveal that main motivating factors for the young in Dimitrovgrad and Ulyanovsk region are as follows:

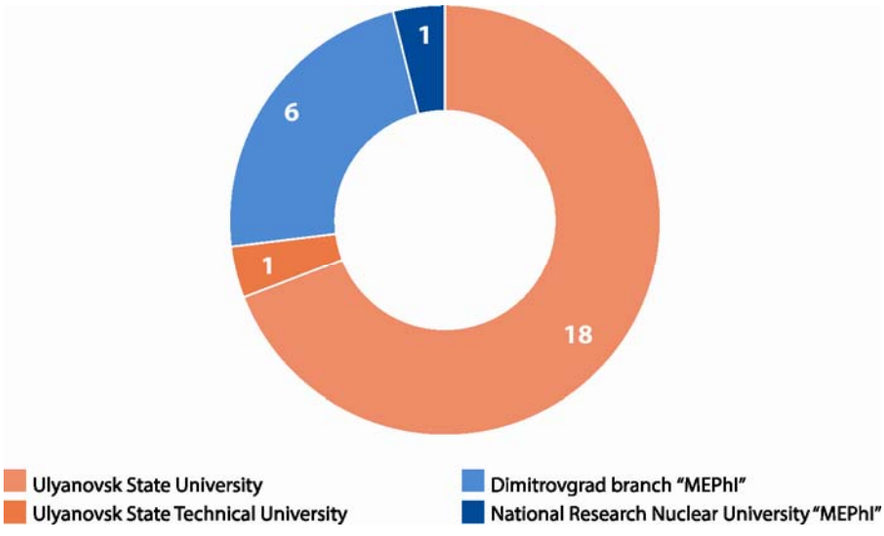
- Increase of salary for staff members engaged in scientific area (97 % of the pollees);
- Up-to-date material and technical resources (80.3 % of the pollees);
- Opportunities for careers and professional development (59.6 % of the pollees);
- Opportunities for complete implementation of professional ambitions (47.3 % of the pollees);
- Assistance in resolving housing issues (60.3 % of the pollees);
- A chance to escape military conscription (19.4 % of the pollees);
- Possible professional contacts and oversea business trips (32.6 % of the pollees);
- Rising of science prestige and its related activities (43.7 % of the pollees);
- Access to information and communication technologies (16.2 % of the pollees).

According to results of polls, interviews and subsequent monitoring, up-to-date material and technical resources, opportunities for professional development, successful occupational career and complete implementation of expertise are essential for the young in addition to fitting salary in choosing future profession and area of employment. Nuclear industry enterprises and RIAR amongst other are able to create such conditions for recent graduates.

A proactive approach to life among the young staff members of RIAR deserves particular notice. The young professionals board and youth section of Russian Nuclear Society have been successfully working at RIAR. It is worth noting that their members are part of youth organizations in our region and town such as a Regional Council of Career Youth and Committee for Youth Affairs under the Chief Magistrate. A joint project of RIAR young staff members and students from Dimitrovgrad University of Technology and Engineering NRNU "MEPhI" "Festival of Friendship" is scheduled for 2013. This festival is expected to be organized annually.

TRAINING OF HIGHLY QUALIFIED PERSONNEL

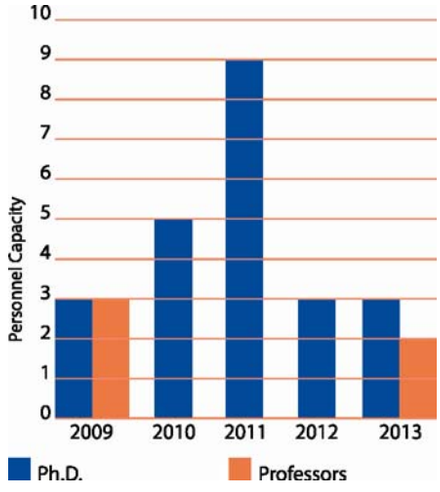
High-qualified people i.e. doctors (95 people) and professors (11 people) are the skeleton staff at the Institute as they enable the research and development work to be done up to a desired standard regarding all scientific and engineering areas of RIAR activities. At present high-qualified people enable engineering capabilities to be maintained at a proper level and help to perform scientific research at rather high level. However, the skeleton staff needs continuous replacement and renewal. A part-time postgraduate education was available at RIAR from 1964 until March 2006 before the end of license validity that gave the right to teaching in the field of postgraduate education. Since 2006 RIAR has been involved in training of highly qualified personnel in ten special fields based on cooperation agreements with centers of postgraduate education and higher doctorate at such universities as: Dimitrovgrad University of Technology and Engineering NRNU "MEPhI", Ulyanovsk State Technical University, Obninsk Institute for Nuclear Power Engineering NRNU "MEPhI", Ulyanovsk State University, Ulyanovsk State Agricultural Academy and Togliatti State University.



A number of staff members educated in postgraduate education centers at universities in 2012

A high quality of postgraduate education and training is proved by recognitions of PG students' achievements in industry and at a federal level: according to the results of the contest for awards "Innovative Leader of the Nuclear Industry" in 2012, postgraduate student Ms. I. Butkalyuk won the first award. Postgraduate students Ms. A. Belyaeva and Mr. A. Varivtsev became successful winners of the public contest for the RF President scholarship for Russian young researches and postgraduate students. They were the only representatives of ROSATOM who could win the RF President's grants.

In so doing collaboration with universities make it possible to cope with aging of high-qualified personnel.



Dynamics of Ph.D. staff numbering*

*Data for 2013 are predictive.

PERSONNEL TRAINING

The current system of JSC "SSC RIAR" regarding personnel training and human resources development implies an integrated approach to professional advancement of the staff members to achieve and keep high labor efficiency in order to produce safe and competitive products.

In 2012 personnel was trained in a variety of activity lines regarding the levels and categories of staff and RIAR lines of activities. In pursuing these aims RIAR established cooperation with industrial training centers, for example Non-state educational establishment of continuing professional education "Central Institution of Advanced Training" and Training Center for RIAR and Nuclear Power Engineering Personnel, institutions of further training, academies and other companies as well as the personnel was trained in accordance with training programs.

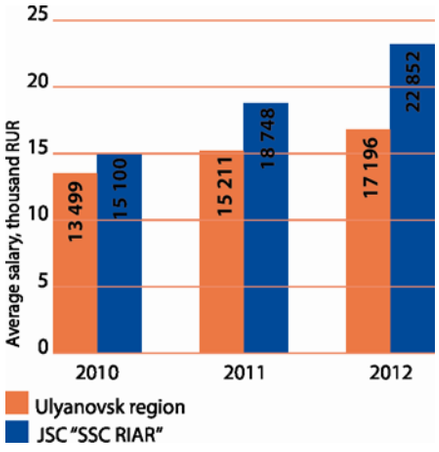
Expenses for staff recruitment and human resources development accounted for RUR 7.5 mln in 2012. A ratio of total actual expenses for in-house and outside training with the deduction of expenses for compulsory training accounted for RUR 0.576 K during the period under report with reference to average staff number.

Average hours of training per one employee per year

Personnel categories	Men	Women
Senior executives	62.4	41
Mid-level executives	60.8	14.6
Entry-level executives	17.4	21.8
Professional employees	5.1	34
Workers	6.4	6

REMUNERATION OF LABOR AND MORAL ENCOURAGEMENT

One of the most important factors for staff recruitment, retention and human resource development is a salary level. In 2012 an average monthly earning rose by 21.9 % compared to 2011 and amounted to RUR 22 852. Taken in the large, the amount is higher compared to the salary level in town and in the region. In 2013 salaries and wages are expected to increase by 21.5 % due to increase of labor efficiency.



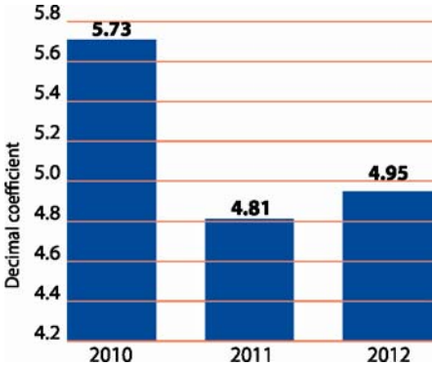
Average earnings at JSC "SSC RIAR" compared to the average earnings in the region*

In 2012 a total wage bill amounted to RUR 1 348.1 mln. A payroll budget includes the following compensations and benefits for employees:

- Assessed amounts of remuneration in monetary form and in kind for hours worked and no-worked time;
- Incentive payments;
- Compensatory payments due to working hours and working conditions;
- Gratuities for specific achievements in the workplace (prominent work);
- Other payments (remuneration for dismissal from employment, remuneration for inventions, settling-in allowances for recent graduates, incapacity allowances (for 3 days), grant payments, payments under contracts for labor).

* The information related to Ulyanovsk region is given based on the data of the Federal Government Statistical Bureau.

One of the most important factors, which indicate a level of disturbed social atmosphere in the eyes of social scientists and economists is the decimal coefficient representing the differentiation level in remuneration of highly-paid employees in number of 10 % in relation to lowly paid staff in number of 10 %. A world-wide practice accepts the decimal coefficient varying in the range of 4 to 6 as a reasonable one for company existence and development.



Changes in the decimal coefficient

One of the key principals of remuneration system at JSC "SSC RIAR" is equal employment opportunities for different age-sex groups. Differences in base salaries of some personnel categories can be explained by the fact that in 2012 the positions held by male and female employees fell into different grades.

Ratio rating of base salaries

Personnel categories	Ratio of female base salary to male base salary, %
Workers	88.0
Nonproductive personnel	101.9
Professional employees	91.6
Executives	85.5

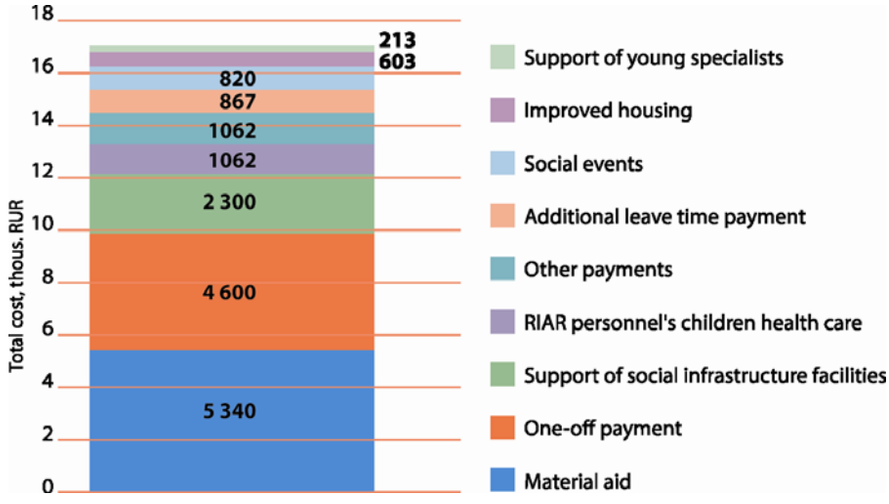
PUBLIC WELFARE PROGRAMMES

All social benefits and social protection of RIAR employees are stated in JSC "SSC RIAR" collective labor agreement for 2010–2012 are implemented in accordance with the single social policy of ROSATOM State Nuclear Energy Corporation within the framework of ongoing social programmes.

In 2012 welfare benefits of RIAR employees amounted to RUR 16.9 mln and welfare payment per one employee per year amounted to RUR 3 600 without including medicinal and prophylactic food and RUR 13 400 including medicinal and prophylactic food.

In 2012 RIAR implemented the following welfare programmes:

- One-off payments for round anniversaries and celebratory dates, resignation, honorary titles etc;
- Financial aid:
  – Under force-majeure circumstances,
  – Delivery of a child,
  – Large families,
  – Funeral payments,
  – Medical treatment and medicines;
- Health promotion for employees' children;
- Cultural events;
- Improvements to dwelling (allowances for renting an apartment);
- Additional leave time;
- Settling-in allowances for recent graduates after recruitment;
- Maintenance of social infrastructure facilities;
- Other payments.



Social welfare expenditures

Given below is information about intended recipients under the ongoing social welfare programmes for education, training, supportive counseling, prevention and control of serious diseases.

Areas and intended recipients of social welfare programmes

Intended recipient	Areas			
	Education / training	Supportive counseling	Prevention / risk management	Medical care
Personnel	Yes	Yes	Yes	Yes
Family members	No	Yes	Yes	Yes
General public	No	Yes	Yes	Yes

In 2012 RIAR personnel (3 031 people) exposed to occupational hazard underwent routine medical examination. All the medical specialists were involved in medical examination of the personnel in accordance with the order of the RF Ministry for Public Health and Social Development No. 302n "Approval of harmful and (or) hazardous occupational factors and work requiring compulsory preliminary and routine medical examinations (health checkup) for the employees involved in heavy activities and exposed to occupational hazard" of April 12, 2011.

In 2012 900 RIAR employees were done vaccination as they fall into a risk group of communicable infectious diseases included in the national schedule of prophylactic immunization and due to epidemiological indications.

In order to do vaccination of RIAR employees 1 000 subunit inactivated influenza vaccines "Influvac" were procured using RIAR equity funds within the scope of preventive work.

In 2012 году 553 staff members and 107 retired persons who were in the RIAR staff underwent health improvement therapy in the health and recreation center of RIAR. The Federal Medical and Biological Agency gave 172 health resort vouchers and 50 vouchers for mother and child.

SOCIAL WELFARE PROGRAMMES FOR RECENT GRADUATES

Core measures of financial assistance for recent graduates are stated in JSC "SSC RIAR" collective labor agreement for 2010–2012.

The aforesaid document provides for the following benefits for the recent graduates:

1. Part or full payment for part-time higher education;
2. Monthly position salary supplement in the amount of RUR 3 000 for three years (a status of recent graduate is required);
3. Interest-free loan of RUR 20 000 at the most for housekeeping needs;
4. A chance for receiving settling-in allowances when they are recruited in the amount ranging from one or five position salaries (for graduates of profile energy sector institutions and energy-specific departments);
5. Allowances for renting an apartment in the amount of RUR 1 500 per the recent graduate and RUR 500 per each family member;
6. Individual salaries for some recent graduates (usually for those who graduate one of the universities in Moscow).

The employer together with the trade union committee and young professionals' board worked out a programme aimed at solving housing problems with mortgage credit lending for a time period of 2012 until 2020. In 2013 it is planned to start building 18 four-story apartment buildings for RIAR employees.

RIAR in cooperation with the Government of Ulyanovsk Region has been elaborating an integrated programme to provide affordable and comfortable housing for young researches and professional employees recruited by JSC "SSC RIAR". The Regional Government committed itself to allocate money in the amount of 50 % of really needed to make the down payment under the mortgage loan as a part of this programme. JSC "SSC RIAR" has been negotiating terms of mortgage loans at attractive rates against RIAR guarantees.

MORAL ENCOURAGEMENT

The RIAR management team recognizes that a motivated employee forms a skeleton of any enterprise. Naturally a respectable salary plays a great role in creating a favorable image of employer. However, the management team does not forget about moral encouragement of the personnel as it is a strong factor contributing to effective discharge of their duties and a key component of business culture.

Moral encouragement aims at enhancing a personal interest to assigned duties that leads to improvement of labor productivity and naturally, to increase in income of the enterprise.

In 2012 the RIAR personnel was honored with the following awards:

- Energy sector orders, medals, badges of merit, honorary degrees, certificates of honor and letters of gratitude:
  - Labor merit badge "Veteran of the Nuclear Power Industry" – 62 employees;
  - "Academitian I.V. Kurchatov" badge of:
    - The 2nd degree – 1 employee,
    - The 3rd degree – 2 employees,
    - The 4th degree – 17 employees;

– Badge of Merit "For Services to the Nuclear Power Industry" of the 1st degree – 1 employee;
– ROSATOM Certificate of Honor – 25 employees;
– ROSATOM Letter of Gratitude – 23 employees;
– Gratitude of ROSATOM Director General – 14 employees;
– Medal of Honor of the RF Emergency Ministry "Marshal Vasily Chuikov" – 1 employee;

- Federal and regional medals, certificates of honor and titles of honor:
  – Merit Certificate of the RF President – 1 employee;
  – Medal of Honor of Ulyanovsk Region – 1 employee;
  – Honorary Title "Honorary Worker of Ulyanovsk Region"– 1 employee;
  – Certificate of Honor of Governor for Ulyanovsk Region – 4 employees;
  – Honors Board "The Prominent People in Ulyanovsk Region" – 1 employee;
  – Gold Honor Book of the Prominent Youth in Ulyanovsk Region – 1 employee;
  – Merit Certificate of the Ulyanovsk Region Ministry of Energy and Housing – 8 employees;
- Town and RIAR specific honorary titles, certificates and letters of gratitude:
  – Merit Certificate of Mayor of Dimitrovgrad – 22 employees;
  – Letter of Gratitude of Mayor of Dimitrovgrad – 6 employees;
  – Honors Board of Dimitrovgrad – 2 employees;
  – Honorary Title "Honorary Worker of RIAR" – 10 employees;
  – Honors Board "Eminent People of RIAR" – 14 employees;
  – RIAR Honorary Board – 44 employees;
  – RIAR Certificate of Honor – 191 employees;
  – Gratitude of RIAR – 687 employees;
  – RIAR Trade Union Committee Letter of Gratitude – 9 employees.

4.2.

QUALITY MANAGEMENT

OVERVIEW OF QUALITY MANAGEMENT SYSTEM

A system of quality management at JSC "SSC RIAR" is based on quality management concept stated in International Standard for Business ISO 9001:2008 and in National Military Standard GOST PB 15.002–2003.

The quality management system (QMS) is applied to all the stages of life cycle of products produced at JSC "SSC RIAR" starting with planning, development and ending with recycling as well as it is applied to all the divisions involved in development, delivery of products and further activities after their delivery.

RIAR executives specified, implemented and keep up to date the procedure of engineering and development regarding the processes required for research and development activities and rendering of services, for time response to customer demands and expectations.

During 2012 implementation, certification and improvement of the quality management system were continued in accordance with the plans, which were approved by the following orders:

- Of February 16, 2012 No. 94 "Concerning activities related to implementation and preparation for certification of the JSC "SSC RIAR" quality management system";
- Of June 06, 2012 No. 430 "Concerning activities related to implementation and preparation for certification of the JSC "SSC RIAR" quality management system in accordance with standard ISO 9001:2008";
- Of July 24, 2012 No. 605 "Concerning activities related to implementation and preparation for certification of the JSC "SSC RIAR" quality management system in accordance with State Standard GOST PB 15.002-2003";

- Of September 03, 2012 No. 735 "Concerning certification audit of the quality management system in accordance with State Standard GOST PB 15.002-2003 at JSC «SSC RIAR»";
- Of September 19, 2012 No. 794 "Concerning certification audit (the 1st stage) of the quality management system in accordance with standard ISO 9001:2008 (GOST R ISO 9001-2008) at JSC «SSC RIAR»";
- Of October 01, 2012 No. 829 "Concerning preparation for certification audit (the 2nd stage) of the quality management system in accordance with standard ISO 9001:2008 (GOST R ISO 9001-2008) at JSC «SSC RIAR»";
- Of October 12, 2012 No. 859 "Concerning certification audit (the 2nd stage) of the quality management system in accordance with standard ISO 9001:2008 (GOST R ISO 9001-2008) at JSC «SSC RIAR».

In 2012 certification audits of the quality management system were conducted at JSC "SSC RIAR" in accordance with voluntary schemes "Military Register" to reveal conformity with National Military Standard GOST RV 15.002-2003 and International Standard ISO 9001:2008 (GOST R ISO 9001-2008). Certifying Associations (Russian Register – Baltic Inspection Center, Ltd) confirmed that the existing quality management system of JSC "SSC RIAR" met the requirements of these standards.

СИСТЕМА СЕРТИФИКАЦИИ РУССКОГО РЕГИСТРА

РУССКИЙ РЕГИСТР

СЕРТИФИКАТ

СООТВЕТСТВИЯ СИСТЕМЫ МЕНЕДЖМЕНТА

Настоящим удостоверяется, что система менеджмента

Открытого акционерного общества
«Государственный научный центр –
Научно-исследовательский институт
атомных реакторов»

Россия, 433510, Ульяновская обл., Димитровград-10

была проверена и признана соответствующей требованиям стандарта

ИСО 9001:2008

в отношении проектирования, производства и поставки твэлов, тепловыделяющих сборок, радионуклидных препаратов и источников; выполнения научно-исследовательских и опытно-конструкторских работ в области использования атомной энергии

№: 12.1063.026
от 29 октября 2012 г.

Сертификат действителен до 29 октября 2015 г.

008917

IAF

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RUSSIAN REGISTER CERTIFICATION SYSTEM

RUSSIAN REGISTER

CERTIFICATE

OF MANAGEMENT SYSTEM CONFORMITY

This is to certify that the Management System of

JSC «SSC RIAR»
433510, Dimitrovgrad-10, Ulyanovsk region, Russia

has been assessed and found to be in accordance with the requirements of

ISO 9001:2008

in respect of design, production and supply of fuel elements and assemblies, radionuclide sources and preparations; R&D related to nuclear energy usage

No: 12.1063.026
of 29th October, 2012

This certificate is valid until 29th October, 2015

008917

IAF

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РУССКИЙ РЕГИСТР

Приложение
к Сертификату соответствия
№ 12.1063.026
от 29 октября 2012 г.
бланк № 008917

**Область сертификации системы менеджмента
Открытого акционерного общества
«Государственный научный центр –
Научно-исследовательский институт
атомных реакторов»**

1. Продукция / услуги: проектирование, производство и поставка твэлов, тепловыделяющих сборок, радионуклидных препаратов и источников; выполнение научно-исследовательских и опытно-конструкторских работ в области использования атомной энергии.
2. Процессы выпуска продукции в соответствии с МС ИСО 9001:2008:
   - 7.1. Планирование выпуска продукции
   - 7.2. Процессы, связанные с потребителем
   - 7.3. Проектирование и разработка
   - 7.4. Закупки
   - 7.5. Обеспечение производства продукции и обслуживания
   - 7.6. Управление оборудованием для мониторинга и измерений
3. Исключения из процессов жизненного цикла продукции: нет

Генеральный директор Ассоциации
по сертификации "Русский Регистр" А.В. Владимирцев

1-1

RUSSIAN REGISTER

Annex
to the Certificate of conformity
№ 12.1063.026
of 29th October, 2012
registration form № 008917

**Certification scope of the management system of
JSC «SSC RIAR»**

1. Product / service: design, production and supply of fuel elements and assemblies, radionuclide sources and preparations; R&D related to nuclear energy usage.
2. Processes of product realization in compliance with ISO 9001:2008:
   - 7.1. Planning of product realization
   - 7.2. Customer-related processes
   - 7.3. Design and development
   - 7.4. Purchasing
   - 7.5. Production and service provision
   - 7.6. Control of monitoring and measuring equipment
3. Exclusions from the processes of product realization: no

General director of Certification
Association "Russian Register" A. Vladimirtsev

1-1

Certificate of JSC "SSC RIAR" QMS Conformity to ISO 9001:2008 requirements in conformity with certification scheme of "Russian Register" Association

СИСТЕМА СЕРТИФИКАЦИИ ГОСТ Р

РЕГИСТР СИСТЕМ КАЧЕСТВА

ОРГАН ПО СЕРТИФИКАЦИИ СИСТЕМ МЕНЕДЖМЕНТА КАЧЕСТВА
АССОЦИАЦИЯ ПО СЕРТИФИКАЦИИ «РУССКИЙ РЕГИСТР»
Россия, 191014, Санкт-Петербург, Литейный пр., д. 45/8, лит. А, пом. 6Н
№ РОСС RU.0001.13НС08

К № 23885

СЕРТИФИКАТ СООТВЕТСТВИЯ

Выпуск 1. СМК сертифицирована с ноября 2012

Выдан

ОАО «ГНЦ НИИАР»

Российская Федерация, 433510, Ульяновская обл., г. Димитровград-10

НАСТОЯЩИЙ СЕРТИФИКАТ УДОСТОВЕРЯЕТ:

система менеджмента качества применительно к проектированию, производству и поставке твэлов, тепловыделяющих сборок, радионуклидных препаратов и источников; выполнению научно-исследовательских и опытно-конструкторских работ в области использования атомной энергии

СООТВЕТСТВУЕТ ТРЕБОВАНИЯМ
ГОСТ Р ИСО 9001-2008 (ИСО 9001:2008)

Разъяснения, касающиеся области сертификации СМК, могут быть получены путем консультаций с ОАО «ГНЦ НИИАР»

Регистрационный № РОСС RU.ИС08.К01665

Дата регистрации: 02.11.2012 Срок действия до: 02.11.2015

Руководитель органа по сертификации систем менеджмента качества А.В. Владимирцев

Председатель комиссии Д.А. Данилов

Учетный номер Регистра систем качества №

GOST R CERTIFICATION SYSTEM

QUALITY SYSTEMS REGISTER

QUALITY MANAGEMENT SYSTEM CERTIFICATION BODY
CERTIFICATION ASSOCIATION "RUSSIAN REGISTER"
45/8, Litseyny pr., lit. A, office 6N, 191014, St.-Petersburg, Russia
№ РОСС RU.0001.13НС08

К № 23885

CERTIFICATE OF CONFORMITY

Issue 1. QMS certified since November 2012

is given to

JSC «SSC RIAR»

Dimitrovgrad-10, Ulyanovsk region, 433510, Russian Federation

THIS CERTIFICATE CERTIFIES THAT:

the Quality Management System as applied to design, production and supply of fuel elements and assemblies, radionuclide sources and preparations; R&D related to nuclear energy usage

COMPLIES WITH THE REQUIREMENTS OF
GOST R ISO 9001-2008 (ISO 9001:2008)

The interpretation of certification scope may be received by consulting with JSC «SSC RIAR»

Registration № РОСС RU.ИС08.К01665

Date of registration: 2012, November, 02 It is valid until: 2015, November, 02

Head of Quality Management System Certification Body A.V. Vladimirtsev

Audit team leader D.A. Danilov

Registration number of Quality systems register №

Certificate of JSC "SSC RIAR" QMS Conformity to GOST R ISO 9001-2008 in conformity with certification scheme of "Russian Register" Association

РОСОБОРОНЗАКАЗ, ФСВТС РОССИИ, РОССТАНДАРТ,
ГОСКОРПОРАЦИЯ «РОСАТОМ», РСПП, АНО «ВОЕННЫЙ РЕГИСТР»

СИСТЕМА ДОБРОВОЛЬНОЙ СЕРТИФИКАЦИИ
«ВОЕННЫЙ РЕГИСТР»

Свидетельство № РОСС RU.0547.04ЧВ01

Орган по сертификации систем менеджмента качества
Автономная некоммерческая организация
«Институт испытаний и сертификации вооружения и военной техники»
(полное наименование органа по сертификации)
(115184, г. Москва, ул. Б. Татарская, д. 35, №: ВР АА.1.02.0070-2011)
адрес, № Свидетельства о регистрации)

СЕРТИФИКАТ СООТВЕТСТВИЯ

№ ВР 02.1.5420-2012

Срок действия с «01» октября 2012г. по «30» сентября 2015г.

Выдан Открытому акционерному обществу
«Государственный научный центр – Научно-исследовательский институт атомных реакторов»
(ОАО «ГНЦ НИИАР»)
(полное наименование организации)
433510, Россия, Ульяновская область., г. Димитровград-10
(юридический адрес)

Сертификат удостоверяет, что система менеджмента качества, распространяющаяся на проектирование, разработку (выполнение НИОКР), транспортирование продукции для оборонных целей в области использования атомной энергии
(наименование типов деятельности организации)
в соответствии с кодами ЕКПС: ст. 11, 4470, 4480, гр. 97
(указывают классификаторы (ЕКПС, ОКП или ОКРЭД) и соответствующие коды продукции по этим классификаторам)

соответствует требованиям ГОСТ РВ 15.002-2003
(стандарты, на соответствие которым проводилась сертификация СМК, другие нормативные документы)

Дополнительная информация -
(заполняется при необходимости описания сделанных исключений)

Руководитель органа по сертификации СМК (подпись) А.Г. Федотов (инициалы, фамилия)

№ 116898 ВР

IQNet

THE INTERNATIONAL CERTIFICATION NETWORK

CERTIFICATE

IQNet and
Certification Association "Russian Register"
hereby certify that the organization

JSC «SSC RIAR»

433510, Dimitrovgrad-10, Ulyanovsk region, Russia

for the following field of activities

design, production and supply of fuel elements and assemblies, radionuclide sources and preparations; R&D related to nuclear energy usage

has implemented and maintains a

Management System

which fulfils the requirements of the following standard

ISO 9001:2008

Issued on : 29th October, 2012
Validity date : 29th October, 2015

Registration Number : RU-12.1063.026

IQNet Michael Drechsel President of IQNet

Arkady Vladimirtsev, General director of Russian Register

IQNet Partners*:

* The list of IQNet partners is valid at the time of issue of this certificate. Updated information is available under www.iqnet-certification.com

Certificate of JSC "SSC RIAR" QMS conformity to GOST RV 15.002-2003 (in conformity with voluntary scheme "Military Register") and ISO 9001:2008 (in conformity with international certification scheme "IQNet")

The quality management system is applied to engineering and development (research and development work), transportation of defense products related to nuclear energy use and complies with the requirements of GOST PB 15.002-2003 that is confirmed with the Certificate of Conformity No. VR 02.1.5420-2012 of October 01, 2012 under voluntary certification scheme "Military Register" (validity period from October 01, 2012 until September 30, 2015).

The quality management system is also applied to design, production and supply of fuel elements and fuel assemblies, radionuclide sources and preparations; to scientific, research and development work related to nuclear energy use and complies with the requirements ISO 9001 (GOST R ISO 9001) that is confirmed by Certificates of QMS Conformity:

- Of November 02, 2012 No. ROSS RU.IS08.K01665 in conformity with certification scheme of "Russian Register" Certification Association (validity period from November 02, 2012 until November 02, 2015);
- Of October 29, 2012 No. 12.1063.026 in conformity with certification scheme of "Russian Register" Certification Association (validity period from October 29, 2012 until October 29, 2015);
- Of November 02, 2012 No. ROSS RU.IS08.K01665 in conformity with certification scheme "GOST R" (validity period from November 02, 2012 until November 02, 2015);
- Of October 29, 2012 No. RU-12.1063.026 in conformity with "IQNet" (validity period from October 29, 2012 until October 29, 2015).

RIAR got an approval to use the QMS conformity mark for booklets, brochures, posters and document sheets.

The obtained Certificates of Conformity demonstrate JSC "SSC RIAR" ability to supply products and render scientific and research services in response to needs and expectations of Customers.

One of the key factors characterizing the JSC "SSC RIAR" QMS from a positive view is absence of money penalties for breach of legislation and regulations related to rendering services and use of products and services.

EVALUATION OF CUSTOMER SATISFACTION

In order to determine how well JSC "SSC RIAR" is able to satisfy the customer needs, evaluation of customer satisfaction is conducted. Questionnaires are distributed twice a year. Work activity management, methods and frequency of data acquisition, and data analysis methods are described in the corporate standard STO DP 086-410 "Quality management system of JSC "SSC RIAR". Monitoring and evaluation of the customer satisfaction".

Two types of questionnaires were drawn up to evaluate customer satisfaction based on the outcome of 2012:

- Evaluation of service quality (R&D);
- Evaluation of product quality.

Both types of questionnaires were nominally broken up into several parts, which contain questions related to contracting, compliance obligations, engagement and interaction with the customer, cooperation outcomes and quality of products.

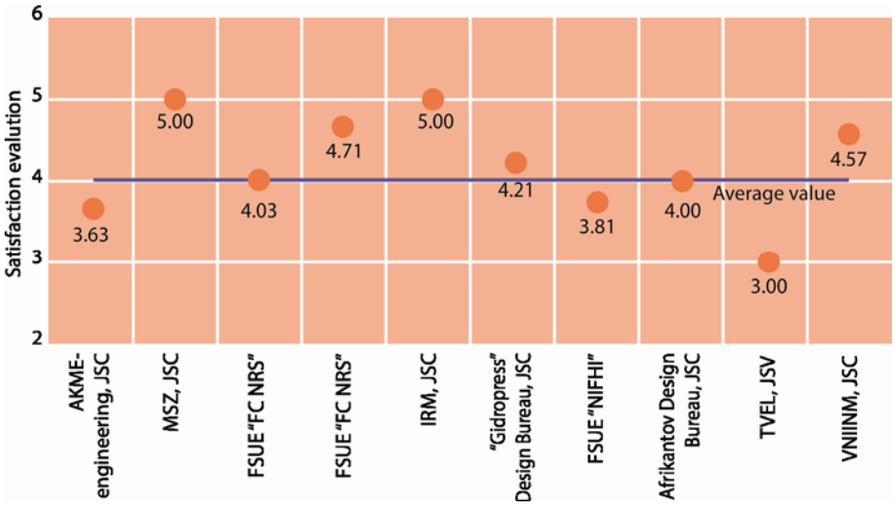
A list of customers was made based on the information provided by finance department regarding profitable contracts to be in effect in 2012. Questionnaire survey was conducted in 17 enterprisers, which are the primary customers of R&D work in 2012 and in 13 companies, which are the primary customers of products in 2012.

Ten (10) questionnaires were filled up with regard to R&D quality evaluation and three questionnaires – with regard to product quality evaluation:

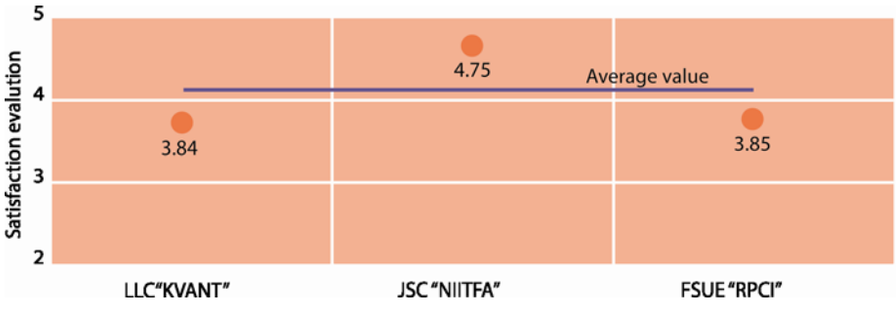
- JSC "AKME-Engineering";
- FSUE FCNRS;
- JSC "MSZ";
- JSC "Gidropress Experimental Design Bureau";
- JSC "Institute of Reactor Materials";
- Kvant Ltd, Installation, maintenance and repair of radiation producing equipment;
- JSC "NIITFA «Scientific Research Institute of Engineering Physics and Automation»";
- Branch of Karpov Scientific Research Institute of Physics and Chemistry;
- JSC "Experimental Machine-Building Design Bureau";
- JSC "TVEL";
- JSC "VNIINM".

SATISFACTION EVALUATION OF COMPANIES

An overall average customer satisfaction level is 81.2 % that is the customer is satisfied with the services involving supplies and associated with R&D in their entirety.



Graphical chart of satisfaction evaluation among enterprisers using services



Graphical chart of satisfaction evaluation among enterprisers using products

POSITIONING MATRIX FOR QUESTIONS

The questionnaire survey data related to R&D and supply services rendered are evaluated with reference to each question and its place in the matrix "evaluation– significance".

Such terms as "significance" and "evaluation" constitute the positioning matrix that is used to establish the order of priorities aimed at enhancing satisfaction of the customers.

Conventionally, the positioning matrix is broken up into four areas:

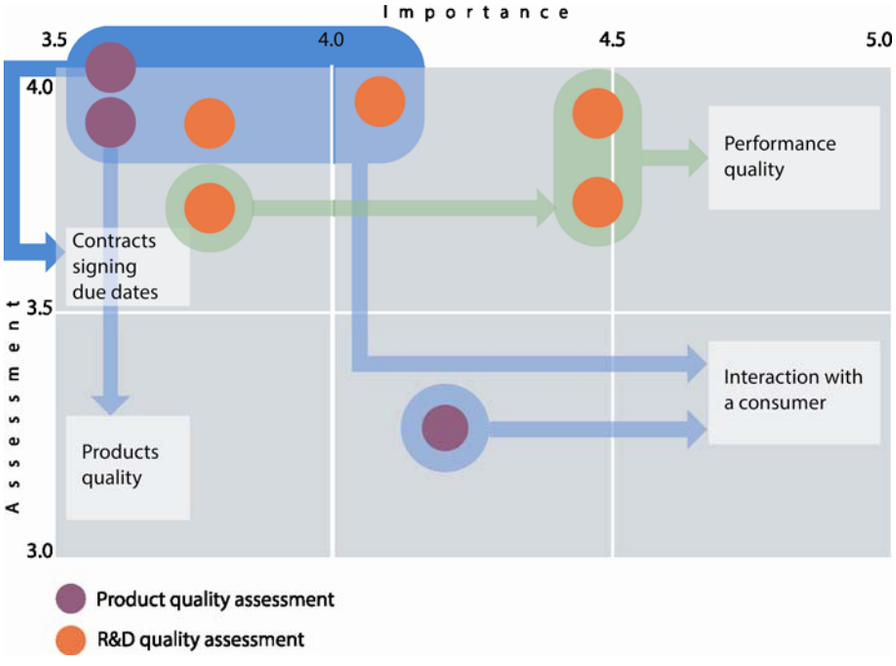
- Excessiveness;
- Sustaining;
- Medium-term improvements;
- Ultimate improvements.

Shown in the figure below is the area of ultimate improvements, which are important for the customers but evaluation does not satisfy their needs.

This area covers the following questions:

- Compliance obligations:
  - Compliance of the provided R&D documents to the requirements of the Contract and customer expectations;
  - Quality of investigations performed within the R&D framework;
- Quality of products:
  - Adherence to contract specifications regarding the scope and rates of supplies;
  - Quality of appropriate forwarding documents;
  - Adherence to contract specifications as to dispatch and transportation of products;
- Interaction with customers:
  - Work progress awareness;
  - Satisfaction with the personnel availability;
  - Easy access to the information about products and RIAR capabilities;
  - Flexibility in response to the problems encountered.

Two questions are found to be on the line between two areas i.e. terms of contract signing and efficient response to criticism and product liability claims.



Area of ultimate improvements

4.3.

INNOVATIVE ACTIVITIES AND KNOWLEDGE MANAGEMENT SYSTEM

Historically it turned out that the main purpose of JSC "SSC RIAR" is to perform R&D and fabrication work in the field of new technologies and materials for national nuclear industry and related industries using reactors and out-of-pile experimental capabilities based on the existing practice of function distributions in nuclear industry. The experimental and engineering capabilities are unique because developed intellectual properties and intellectual properties under development at JSC "SSC RIAR" can be important for the Institute only as they are required to perform R&D for the benefit of outside customers. Thus the main intellectual properties developed and under development at JSC "SSC RIAR" are targeted at improving quality of services rendered to the customers of R&D and fabrication work as well at operational improvement of available process equipment. Mostly according to the terms and conditions of the contracts for R&D work, the rights to the results of intellectual activities belong to customers under the contracts and JSC "SSC RIAR" does not have any rights to these results.

All the work related to patenting, licensing, inventions and rationalization is performed by the intellectual property management office at JSC "SSC RIAR" that is a part of the Department for Strategic Development and Research Activities.

JSC "SSC RIAR" has the Patent Counsel that is a collegiate board at the Institute. Its main purpose is to establish organizational supervision over inventive work at RIAR.

The Patent Counsel renders the following decisions:

- Regarding expediency of intellectual property patenting on behalf of RIAR;
- Regarding disputes arising from finding, execution and use of the results of intellectual activity and remuneration payment;
- Keeping patents and certificates valid.

The main objectives of the Patent Counsel are:

1. Full assistance in development of inventions in order to increase a proportion of scientific and engineering developments regarded as inventions, utility models, industrial prototypes and putting them under protection of patents and certificates.
2. Assistance in a wide use of RIAR intellectual property in order to achieve maximum efficiency.
3. Defense of State interests in the field of inventive activities in the Russian Federation and abroad.
4. Protection of copyrights regarding protected and protectable results of intellectual activities.

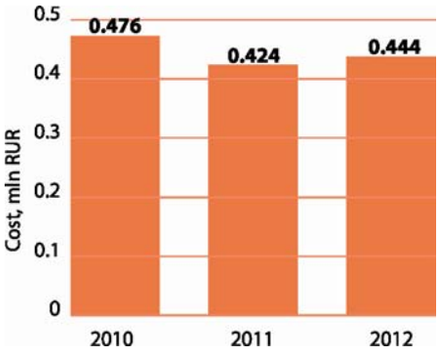
INNOVATIVE ACTIVITIES RELATED TO NUCLEAR POWER USE

At present JSC "SSC RIAR" has introduced and successfully employs technologies which can be conventionally broken up into the following groups (some patents available can be related to several groups):

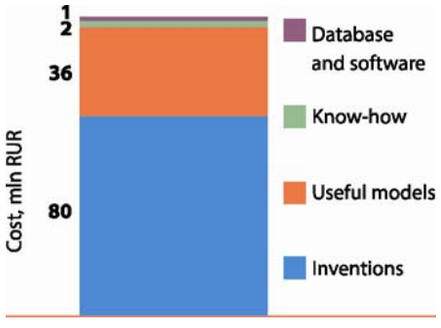
1. **Irradiation test technologies and in-pile experiments** – technologies intended for simulation of operating conditions for core components of advanced power and transport reactors and for testing of their performance in the research reactors. Currently these reactor technologies are protected with 47 patents for invention and for utility models in their entirety.

2. **Post-irradiation examination methods** – methods of destructive and non-destructive examinations intended for obtaining data about changes in performance of nuclear reactor core components during their operation under certain conditions. Currently these methods are protected with 19 patents for invention and for utility models in their entirety.
3. **Radiochemical analysis methods** – experimental methods intended for obtaining data on physical and chemical processes applicable for reprocessing of irradiated materials and spent nuclear fuel, their fractionation, fuel refabrication and utilization of extracted fission products. Currently these methods are protected with 43 patents for invention and for utility models in their entirety.
4. **Nuclear fuel fabrication methods and production of non-nuclear reactor materials** – advanced pilot and industrial production methods of nuclear fuel including production of refabricated fuel as well as control rods for nuclear reactors.
5. **Production of isotopes and radiation sources** – production methods of various radionuclides and their use for production of ionizing radiation sources of medical, technical and scientific applications. These technologies are protected with 33 patents for invention and for utility models in their entirety.

At present RIAR holds 119 patents and certificates for intellectual property items; 51 of them are used. A total balance value of intellectual property items amounts to RUR 0.444 mln.

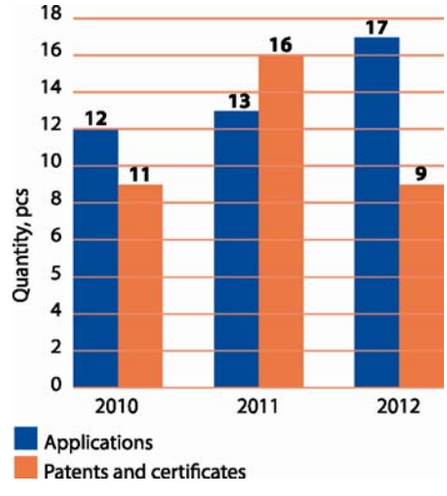


Balance value of intellectual property items



Number and complement of intellectual property items

In 2012 seventeen requests were submitted for patents and certificates for intellectual property (nine inventions, six utility models, two databases and PC software). Nine patents and certificates were issued (four inventions, four utility models, one database and PC software).



Ratio of requests submitted to the number of patents and certificates issued for intellectual property

KNOWLEDGE MANAGEMENT SYSTEM

In 2012 JSC "SSC RIAR" launched a project for implementation of corporate knowledge management system. The present project aims at making and introduction decisions related to adoption of up-to-date corporate knowledge management technologies by ROSATOM State Nuclear Energy Corporation and its subordinate enterprises in accordance with target-oriented model of corporate knowledge management. The corporate knowledge management system is one of the tools in support of ROSATOM innovative activities including implementation of innovation program and strategic initiatives. In doing so, the corporate knowledge management system should contribute to development and innovation, reduction of innovation cycle duration as well as to commercialization of ROSATOM technologies. In order to support management processes at all the stages of knowledge life cycle, this system provides for three management function modules:

1. **Management of scientific and engineering data content.**
   When this work was initiated in 2012, much attention was directed to activities related to digitizing data, which were kept in the format of hard copies, to their structuring, and retrieval of scientific and engineering information. Moreover, certain work was done in order to provide access to external sources of scientific and engineering information for RIAR employees, in particular to online magazines of "Elsevier" publisher and abstract database "Scopus".
2. **Intellectual property rights management.**
   The main purpose of this work in 2012 was development and testing of industry-wide management system for results of intellectual activities at all the stages of life cycle until their commercialization through efficient implementation of processes.
3. **Management for scientific and technical communities.**
   This line of work covers a wide range of tasks staring with establishment of communities for professionals in the field of science and infrastructure for their interaction and ending with development of scientific and technical competencies and preserving knowledge of critical importance.

The activities scheduled for 2012 were successfully conducted.

4.4.

OCCUPATIONAL HEALTH AND SAFETY, RADIOLOGICAL AND INDUSTRIAL SAFETY

INDUSTRIAL SAFETY SYSTEM

The purpose of industrial safety system is to establish control over the compliance with its requirements.

The main controlled parameter for each aspect of safety is effective enforcement of industrial safety requirements in the course of technical equipment operation at hazardous production facilities.

The main criteria for safety assessment of process facilities are qualitative indicators related to compliance with the industrial safety requirements such as:

- Compliance with the industrial safety requirements during operating procedures and production processes as well as during operation of process equipment;
- Continuous monitoring and inspections associated with industrial safety status, examination of equipment in order to reveal occupational hazards in the worksites;
- Keeping of hazardous facilities and equipment in a proper condition for their safe operation and maintenance;
- Timely and high-quality training, instructing of the personnel engaged in hazardous equipment operation as well as industrial safety knowledge assessment when the personnel is admitted to work at the site;
- Timely forwarding of information concerning changes in industrial safety to the operating personnel based on the appropriate regulations and requirements, their studying and further introduction of changes in standard operating procedures;
- Daily studying of operational documents specific to work as well as studying of information recorded in the log-books for revealed faults in equipment operation, information concerning round checks of worksites (in accordance with the schedule of checks), industrial safety status; signing, debugging and corrective measures;
- Establishing control over the observance of process discipline by the personnel, full compliance with safe industrial operation standards during operation and maintenance of process equipment and running process operations;
- Maintenance of all warning systems and devices, emergency protection systems in steady operating condition at all the hazardous facilities;

- Enforcement of orders and directions made by regulatory oversight bodies within a fixed timeframe, of proposals and arrangements aimed at enhancing industrial safety, which are stated in inspection reports, plans, orders and prescriptions issued by executives;
- Conducting of necessary tests and technical examination of technical equipment specific to hazardous production facilities, maintenance, repair and checkup of instrumentation;
- Elaboration of arrangements aimed at ensuring industrial safety, prevention of accidents and incidents at hazardous facilities;
- Expert assessment of industrial safety at hazardous production sites;
- Investigation of faults and malfunctions related to operation of hazardous facilities (accidents, malfunctions and accidents causing injuries;
- Analysis of breakdowns and faults special to technical equipment at hazardous facilities and keeping of appropriate records;
- Making suggestions to RIAR management team (Director and Chief Engineer) with regard to the following:
  - Arrangements aimed at enforcing industrial safety;
  - Corrective actions for compliance with industrial safety requirements;
  - Shutdown or interruption of work conducted at hazardous facilities due to non-compliance with the industrial safety requirements and leading to health risk and endanger of personnel lives or work that can cause accidents and environmental damage;
  - Bringing persons who fail to observe the industrial safety requirements to responsibility.

MONITORING OF STAFF RADIATION EXPOSURE

A radiation monitoring and control center exercises control over radiation exposure of personnel at JSC "SSC RIAR". This center is accredited to radiation measurements.

A number of staff members to be under individual radiation exposure control and included in system ARMIR accounted for 2 403 people in 2012. A percent of staff members exposed to negligible risk is 91 %. A percent of staff members exposed to lifetime risk is 9 %.

Radiation exposure monitoring of the personnel provides for the following:

- Area monitoring of external gamma radiation of the group B personnel, neutron exposure and internal radiation dose of the personnel using calculation methods;
- Individual monitoring of external photon radiation dose and internal radiation dose using direct and indirect methods.

AREA MONITORING

Area monitoring includes the following:

- Monitoring of external photon radiation dose of the group B personnel done by laboratory for radiation monitoring and radiation safety groups at the facilities;
- Irradiation monitoring of the personnel exposed to neutron fields by radiation safety groups at the facilities;
- Control of internal radiation dose of the personnel by radiation safety groups at the facilities using calculation methods based on the volumetric activity data, which are measured in the air of workrooms and based on personnel attendance hours.

External gamma-radiation doses taken by the group B personnel are monitored with survey dosimeters. A number of survey dosimeters and places of their installation are determined by the heads of radiation safety groups and professional staff of radiation safety division. Dosimeters are changed once a year. Readings of survey dosimeters and attendance time of process areas according to the workplace attendance records are used to estimate individual radiation dose of the personnel.

Presence of neutrons is calculated in the external radiation dose of the personnel providing that isotropy coefficient is equal to one. Moreover, neutron exposure dose rate at the workplaces measured by dosimeters and hours of personnel exposure to neutron fields ate taken into consideration.

INDIVIDUAL MONITORING

Individual radiation exposure monitoring confines itself to estimation of personal irradiation exposure dose for every staff member based on the readings of personal radiation monitors or measured contents of radionuclides in the bodies of employees and includes the following:

- External gamma-radiation monitoring including hands and over the lower belly for women under 45 years of age;
- Monitoring of internal radiation with gamma-emitting radionuclides using a direct method and equipment, "SICh";
- Monitoring of internal radiation with alpha-emitting radionuclides using indirect methods of measurement.

Monitoring of external photon radiation dose is carried out using personal radiation monitors DTU-2 with two detectors TLD-500K for normal conditions and one detector PST (IS-7) under emergency conditions. All the personnel of group A have to pass individual radiation exposure monitoring. Measurements are taken quarterly. Certain groups of personnel (groups of transport engineering at reactors, maintenance staff, and NDT men) have to pass through measurements monthly or upon completion of specific work.

Monitoring of hands radiation exposure is carried out during some process operations in accordance with the Procedural regulations for external occupational radiation exposure monitoring of the JSC "SSC RIAR" personnel in gamma-neutron radiation fields. Hand-type radiation monitors are given to the heads of radiation safety groups in response to the request regarding performance of radiation hazardous operations leading to possible irradiation of hands. The in-process radiation exposure monitoring provides for using thermoluminescent detectors? which are used for routine radiation exposure monitoring and personal hand-type self-reading dosimeters RM-1603 of "Polymaster" company production (the Republic of Belarus).

The head of radiation safety group makes a decision regarding additional personal radiation exposure monitoring of female staff at a level of division. In accordance with procedural regulations, the female employees who will probably be exposed to higher average monthly level of radiation exposure (1 mSv in uniform radiation fields) are provided with additional personal radiation monitors, which they have to put on the lower belly. Additional personal radiation monitors are changed once a month.

MONITORING OF INTERNAL RADIATION

Measurements of radionuclide body burden and calculations of expected effective dose level are performed by the staff of internal radiation monitoring group using gamma-emitting radionuclides and "SICh" facility (direct method) and staff of biophysical internal radiation monitoring group using alpha-emitting radionuclides at the radiation monitoring laboratory of radiation safety division (indirect method).

Biophysical monitoring is performed in accordance with the schedule approved and if requested by the heads of radiation safety groups in RIAR departments for personnel handling transuranium elements. Currently only the personnel chosen by the heads of radiation safety groups is to undergo biophysical monitoring due to their professional occupation at the worksites where volumetric activity of aerosols in the air can go beyond allowable limits (analysis for all types of chemical compounds and depressiveness of radionuclides to be monitored is not performed).

Effective average annual irradiation dose, mSv/yr

Personnel category	Dose level
Group A	2.3
Group B	0.08

In 2012 exceeding of effective average annual personal radiation dose (50 mSv) was not revealed.

In 2012 the highest effective dose of external radiation exposure was 24.9 mSv for the group A personnel. Routinely a personal reference level is determined for each staff member and agreed with Chief Public Health Official for Dimitrovgrad, Ulyanovsk Region and the head of Regional Medical Setting No.172 under the Federal Medical and Biological Agency. A personal reference level was necessary in order to accomplish some radiation hazardous work in 2012 by a limited number of appropriate professional staff.

OCCUPATIONAL HEALTH AND SAFETY

The main objectives of JSC "SSC RIAR" as to health and safety are:

- Minimization of negative occupational health impact;
- Prevention of on-the-job injuries ;
- Better working conditions.

Based on the aforesaid objectives the following tasks were completed during the year under report:

- Arrangement and coordination of work related to occupational health and safety;
- Control over the compliance with acts of law and other regulatory documents and standards related to occupational health and safety;
- Occupational hazard identification at the worksites;
- Control over wearing personal and collective protection equipment;
- Consulting of personnel with regard to occupational health and safety;
- Elaboration of special arrangements aimed at preventing job-related accidents and occupational illnesses;
- Reduction of risk from occupational illnesses and job-related accidents.

In accordance with the ROSATOM occupational health and safety management system, JSC "SSC RIAR" has been employed its own occupational health and safety management since 2010 that is targeted at preventing job-related accidents and occupational illnesses and improving working conditions for the RIAR personnel.

Seconded staff and Contractor's personnel involved in activities at radiation hazardous sites and JSC "SSC RIAR" facilities undergo personal monitoring of radiation exposure.

When JSC "SSC RIAR" enters into subcontracts, they specify obligations and commitments of subcontractors in terms of compliance with occupational health and safety standards. These subcontracts also provide for formalizing appropriate agreements. Occupational safety questionnaires are also filled up.

In 2010 there were five job-related accidents, in 2011 – four, in 2012 there were also five job-related accidents. Fatal work injuries have not occurred since 2002.

Occurance rate of on-the-job injuries

On-the-job injury numbers	For JSC "SSC RIAR"	For Subcontractors
Accident frequency rate	0.135	0
Occupational illness rate	0	0
Lost day rate	1.46	0
Absentee rate	10.8	0

The above given data can characterize effective work made by JSC "SSC RIAR" in order to provide life and health friendly working conditions and to prevent on-the-job injuries at the RIAR sites.

In 2012 365 employees were trained on occupational health and safety. The training expenses amounted to RUR 311 312.

4.5.

ENVIRONMENTAL SAFETY

The environmental policy of JSC "SSC RIAR" defines objectives, main principles and commitments of the enterprise in the field of environmental protection and environmental safety.

The management team of JSC "SSC RIAR" recognizes that its scientific and production activities may lead to adverse environmental implications and have an adverse influence on health of the personnel and residents. That is why environment-related activities directed towards mitigating environmental impacts of nuclear power facilities and sites, towards protecting health of the employees and residents, and environmental safety are the highest priorities of JSC "SSC RIAR" coupled with accomplishment of high economic performance and safety of enterprise specific activities.

The position of JSC "SSC RIAR" with regard to environmental management resides in the following:

- Implementation of RIAR environmental policy in accordance with the appropriate plan;
- Supervision under implementation of RIAR and ROSATOM environmental policy;
- Implementation of industrial environmental monitoring and analytical control;
- Elaboration and accomplishment of remedial actions based on the environmental impact monitoring data for the enterprise specific activities.

The environmental policy of JSC "SSC RIAR" is targeted at conducting environmentally friendly activities and sustainable development of enterprise for the short-term and in the long term periods, which provide for attaining a strategic goal of the RF environmental policy in a very efficient way – conservation of natural ecosystems, keeping of their integrity and life-supporting functions for sustainable development of the society, improvements in the quality of life, achievement of major gains in health and demography, and ensuring environmental safety in the country.

APPLICATIONS OF MATERIALS PRONE TO HAVE NEGATIVE ENVIRONMENTAL EFFECT

Quantity of materials used

Type of product	Indicator value
Metal products, t	133
Nonferrous mill products, t	3
Tubular goods, m	15 100
Pipe fittings, pcs.	2 400
Electrodes, kg	4 497
Bearings, pcs.	3 280
Abrasive materials, m (pcs.)	23 688 (871)
Mounting materials, kg (pcs.)	4 506 (74 250)
Salt, t	552
Ferrous sulphate, t	134
Industrial oils, t	28
Gasoline A-92, t	635.04
Diesel oil fuel, t	787.4
Black oil fuel, t	2 538.04
Chemical products including acids, t	57
Lime carbonate, t	800
Overalls, pcs.	657 902
Reference gas mixtures, m^3	1 407.4
Natural gas, K m^3	98 000
Industrial gases, t	55.5

A share of materials to be procured or used, certified by the third party amounts to 100 %.

JSC "SSC RIAR" does not have recycled materials or materials subjected to recycling, and package materials accepted for use.

WASTE CATEGORIZATION AS TO THE TYPE AND METHODS OF HANDLING

In 2012 JSC "SSC RIAR" generated 2 713.608 t of non-radioactive waste among them are reused waste in the amount 1.810 t (0.067 %).

According to environmental impacts, wastes are broken up into the following classes:

- Extremely hazardous waste (I class);
- Highly hazardous waste (II class);
- Moderately hazardous waste (III class);
- Low-hazard waste (IV class);
- Virtually non-hazardous waste (V class).

Categorization of waste genarated by JSC "SSC RIAR" in 2012 as to hazard class

Hazard class	Weight, t	Percent of annual output, %
I class	1.309	0.048
II class	0.0	0.0
III class	284.018	10.466
IV class	210.620	7.762
V class	2 217.661	81.724
Total	**2 713.608**	**100**

A percent of waste of hazard class V amounts to 81.724 % of the annual volume of waste generated. However, the largest contribution (1 630 t per year) is made by waste (purification sludge) from water purification that amounts to 73.095 % of the total volume of the V class waste.

Total emissions of non-radioactive pollutants into the atmosphere made up 503.871 t among them are the following:

- Greenhouse gas emissions:
  - Methane is less than 0.001 t per year (less than 0.0002 % of the total annual volume of emissions);
  - Ozone – 0.001 t per year (0.0002 % of the total annual volume of emissions).
- Releases of ozone-depleting substances:
  - Carbon tetrachloride – 0.006 t per year (0.001 % of the total annual volume of emissions).

Other significant indirect emissions of greenhouse and ozone-depleting gases were not revealed.

EXPENDETURES RESULTED FROM WASTE MANAGEMENT, EMISSIONS PURIFICATION, COMPLETE TREATMENT AND ENVIRONMENTAL REMEDIAL ACTIONS

"Polluter pays" charges	Actual amount paid per year, RUR mln
Charges for permissible releases (discharge) of pollutants	
into waters	0.0
into the atmosphere	0.0999
Charges for disposal of industrial and consumer waste	0.1117
including disposals into underground levels	0.0
Total	**0.2116**

EXPENSES FOR PREVENTION OF HARMFUL ENVIRONMANTAL IMPACTS AND FOR ENVIRONMENTAL MANAGEMENT SYSTEM

Environmental conservation activity	Labor costs and allocations for social needs, K RUR	Total expenses for the year, K RUR
Atmospheric air protection and prevention of climate change	15 231.5	42 155.8
Sewage discharge and treatment	7 695.0	16 563.0
Waste management	1 757.0	4 331.7
Conservation and rehabilitation of land, surface and ground waters	2 979.8	5 660.2
Environmental protection against noise, vibration and other types of physical impacts	0.0	0.0
Conservation of biodiversity and natural areas	0.0	0.0
Radiological safety of environment	6 619.3	11 737.8
Scientific, research activities and developments directed towards reducing negative man-caused impacts on environment	5 257.9	5 286.6
Other activities related to environmental protection	1 303.8	1 303.8
Total	**40 844.3**	**87 038.9**

TOTAL AMOUNT AND VOLUME OF OIL PRODUCT SPILL

On the 25th of August, 2012 at 09:00 a.m a spill of reduced fuel oil in the amount of 0.893 м^3 was revealed at the central heating and power plant. Reduced fuel oil spilt out of process equipment and found its way into the industrial storm water discharge system. The source of spill was confined. Spilt fuel oil was collected and utilized. The environment was not damaged according to the results of sample analysis that was carried out by professional staff.

DIRECT ENERGY USE WITH REFERENCE TO PRIMARY SOURCES

Type of energy source	Quantity	Energy, GJ	Amount, K RUR
Electrical power, K kW·h	116 323.5	$4.188 \cdot 10^5$	139 945
thermal power, Gcal	17 0813	$7.152 \cdot 10^5$	117 367
Natural and associated dissolved gas, K m^3	96 528	$3.861 \cdot 10^6$	309 651
Reduced fuel oil, t	1 291	$4.611 \cdot 10^4$	12 055
Diesel oil fuel, t	838	$3.560 \cdot 10^4$	26 621.6
Gasoline, t	756	$3.300 \cdot 10^4$	23 869.0

INDIRECT ENERGY USE WITH REFERENCE TO PRIMARY SOURCES

Type of energy source	Quantity	Energy, GJ	Amount, K RUR
Electrical power, K kW·h	6876.1	$2.475 \cdot 10^4$	20 024
Natural and associated dissolved gas, K m^3	96 528	$3.861 \cdot 10^6$	309 651
Reduced fuel oil, t	2 538	$9.064 \cdot 10^4$	25 032
Diesel oil fuel, t	782	$3.322 \cdot 10^4$	24 842.6
Gasoline, t	679	$2.964 \cdot 10^4$	21 437.9

LOCATION AND AREA OF LANDS TO BE IN THE OWNERSHIP, LEASE OR UNDER THE CONTROL OF JSC "SSC RIAR" AND LOCATED AT CONSERVATION AREAS AND TERRITORIES OF HIGH BIODIVERSITY OUTSIDE THEIR BOUNDARIES OR BORDERING WITH THEM

As of December 31, 2012 JSC "SSC RIAR" does not have any lands in the ownership, lease or under its control treated as conservation areas and territories of high biodiversity that is why RIAR specific activities cannot produce any significant effect on biodiversity of conservation areas both inside and outside their boundaries.

AMOUNTS OF INDEMNITIES AND CHARGES RELATED TO ENVIRONMENTAL PROTECTION AND PAYABLE ON SETTLEMENT OF ENVIRONMENTAL DAMAGE RESULTED FROM BREACH OF ENVIRONMENTAL REGULATIONS

Special authorized RF agencies for environmental protection did not enforce any penalties against JSC "SSC RIAR" to indemnify against damage caused due to non-compliance with environmental laws in 2012.

TOTAL NUNMBER OF NONFINANCIAL SANCTIONS IMPOSED FOR NON-COMPLIANCE WITH ENVIRONMENTAL LAWS AND REQUIREMENTS OF REGULATORY DOCUMENTS

Non-financial sanctions were not imposed on JSC "SSC RIAR" for non-compliance with environmental laws and requirements of regulatory documents in 2012.

4.6.

NUCLEAR INNOVATION CLUSTER

Nuclear innovation cluster was established in 2010 with the active involvement of municipal administration of Dimitrovgrad, the Regional Government, ROSATOM State Nuclear Energy Corporation and Federal Medical and Biological Agency.

In 2012 a program for development of territorial innovation cluster was drawn up, agreed and approved.

The program was found to be the best in 2012 within the framework of territorial innovation clusters contest that was held by the Ministry for Economic Development of the Russian Federation and probably, it will be subsidized using the funds from the national budget.

On the 26th July, 2012 Domitrovgrad hosted a meeting of representatives from different enterprisers and companies to be the members of nuclear innovation cluster in Dimitrovgrad, Ulyanovsk Region.

Meeting of nuclear innovative cluster members in Dimitrovgrad

The participants discussed issues concerning the program for development of territorial innovation cluster in Dimitrovgrad and made proposals on priority projects, which could be fulfilled within the framework of the present program.

The main purpose of nuclear innovation cluster is to establish cooperation between the major participants i.e. JSC "SSC RIAR" and Federal Medical and Biological Agency for implementing the project related to establishment of the Federal Hi-Tech Center for Nuclear Medicine under the auspices of Ministry of the Healthcare and Social Development of the Russian Federation.

The fundamental idea of nuclear innovation cluster is to concentrate unique research infrastructures and competence.

***The nuclear innovation cluster is faced with the following objectives*:**

1. Expansion of application scale for available engineering competence (new technological markets).
2. Geographical expansion of influence and intended audience for the cluster.
3. Development of ROSATOM infrastructure in conformity with international activities.
4. Support of innovative work.

Main interaction between the parties concerned confines itself to promoting research and development work related to non-energy application fields of nuclear technologies in the course of long-term implementation of the cluster development strategy:

- As to the **"Power industry"** area – primarily, international collaboration in this area involves construction of MBIR and SVBR-100 reactors as well as expansion of application scale for neutron irradiation.
- As to **"Radiology"** (nuclear medicine) area – interaction of JSC "SSC RIAR" and Federal Medical and Biological Agency within the framework of joint research programs, industrial cooperation and human resources programmes.
- As to **"Material Science" area** – interaction of JSC "SSC RIAR", JSC ROSNANO, National Research Nuclear University "MEPhI", RRC Kurchatov Institute, Skolkovo cluster of nuclear technologies and State Corporation "Rostekhnologii". The primary join project related to this area is establishment of R&D Center for Material Science.
- As to **"Promotion of technology conversion and application scale expansion of nuclear technologies"** – establishment of innovation zone MiPlaza.

Functions of nuclear innovation cluster:

- Involvement of new residents who are capable to expand the range of nuclear innovation cluster competences and implement conversion of nuclear technologies in the maximum number of non-energy areas.
- Formation of efficient communication among the participants of the nuclear innovation cluster in order to discuss strategies of development and make timely modification of long-term high-priority areas of the cluster development.
- Establishment of professional association in order to implement a long-sustained scientific prediction to work out the most effective strategies for development of nuclear innovation cluster and each participant hereto.
- Rise in economic activities including a worldwide market.
- Further formation of unavailable competences (complex engineering) to make a complete chain of innovative technologies: starting from basic studies to transfer, engineering and commercialization and then to production.
- Agreement of development plans for Dimitrovgrad and Ulyanovsk Region with the federal and regional strategies of development.

By 2020 the nuclear innovation cluster will represent itself a system of geographically localized interrelated production companies; research institutes, universities; suppliers of equipment, components, and special services; infrastructure facilities: technological clusters, business incubator centers and other companies, which can complement each other and intensify competitive positions of some companies and the cluster in its entirety.

4.7.

ANTI-CORRUPTION ENFORCEMENT

Groups for in-process monitoring and auditing and group for economic security were formed in the second half of 2012. Self-dependent supervisory arrangements were not conducted in respect of separate subdivisions. But in 2012 in accordance with ROSATOM order No. 1/600-P as of July 04, 2012 "Concerning auditing of some financial and business operations of JSC "SSC RIAR" for 2010–2011", the enterprise was audited. The full-scope audit was conducted in major subdivisions where activities performed are at corruption risks.

An employee of the group for in-process monitoring and auditing was trained during the period under report under the program "Internal auditing" (I grade) and got international certificate ICFM (PIA).

5 INTERACTION WITH INTERESTED PARTIES

PUBLIC
ANNUAL REPORT
2012
OF STATE SCIENTIFIC CENTER –
RESEARCH INSTITUTE
OF ATOMIC REACTORS

5.1.

PUBLIC POSITION AND ITS IMPLEMENTATION REGARDING SUSTAINABLE DEVELOPMENT AND INTERACTION WITH INTERESTED PARTIES

JSC "SSC RIAR" is liable to the shareholders for the growing capitalization and meeting investment commitments. A variety of requirements are imposed on JSC "SSC RIAR" by the regional and local government authorities, business partners and local communities. The fruitful work in this area covers the determination of public expectations, RIAR's response and, if required, their reflection in the corporate policy, development strategy and current activities of the Institute.

In early 2012 a platform was developed to make decisions on public expectations and conduct public dialogues with interested parties – RIAR's public position on the corporate social responsibility.

JSC "SSC RIAR" shares ROSATOM's common approach in determining the corporate social responsibility specific nature in the nuclear facility utilization including sustained operation and development of public infrastructure as well as consequence management of the environmental, social and economic impacts.

In collaboration with interested parties JSC "SSC RIAR" understands its liabilities with regard to the formation of mutually beneficial partnership and public relations based on a regular constructive dialogue aiming its activity at such partnership and mutually beneficial relations with interested parties following these basic principles:

- respect and accommodation of interests, opinions and preferences including respect to history, culture, traditions, way of life and legacy of the local population;
- openness and transparency;
- trust and honesty;
- full compliance with laws;
- compliance with the standards of the Russian Federation and international standards;
- responsible fulfillment of the assumed liabilities.

JSC "SSC RIAR" pursues the transparency policy aimed at providing credible and complete information to all interested parties on the key areas of its activity. Accommodation of interests of the Institute and interested parties in the specific issues is done within the framework of direct dialogues with the representatives of interested parties. Work in close cooperation with interested parties enables to promptly learn their expectations and timely response to their requests. In order to study the opinions of interested parties and have feedback, JSC "SSC RIAR" carries out regular questionnaires of the interested party representatives and analyzes the received written requests.

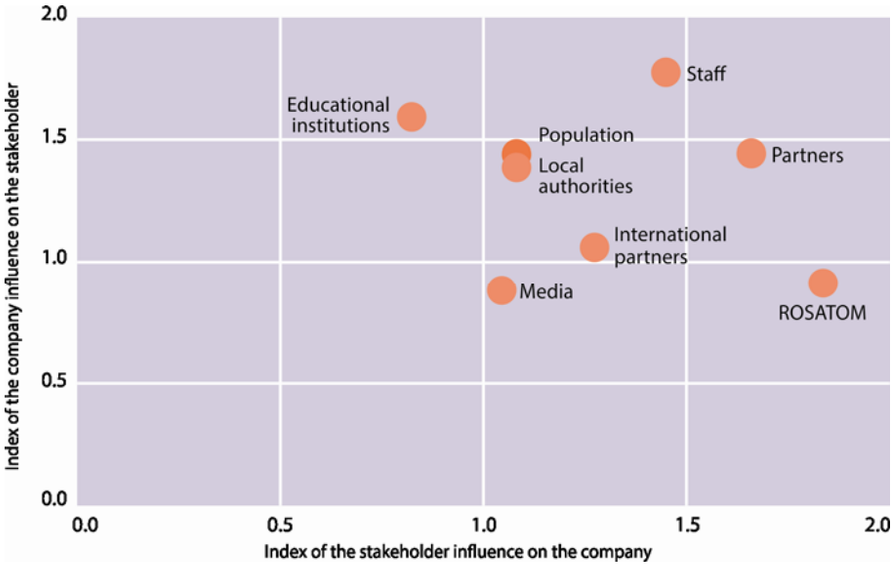
Based on the evaluation of the importance of the interested party influence on current JSC "SSC RIAR" activity and how the Institute influences them, the main groups of interested parties were determined to create the effective system of interaction with interested parties.

5.2.

GROUPS OF INTERESTED PARTIES

Main groups of interested parties

Interested party	Key interests
ROSATOM, JSC "Atomenergoprom"	Efficient activity, sustainability, development, dividends, innovations and investments; compliance with ROSATOM development strategy; corporate governance; project management quality; term and budget discipline
Partners (customers, suppliers, subcontractors)	Stable and reliable mutually beneficial collaboration; new orders in accordance with the prospects for the enterprise development; construction projects, supplier selection procedures; financial status of the enterprise
Staff (employees)	Results and achievements; human resources and social policy; the Institute development; staff involvement and development prospects
Federal, regional and local authorities. Supervision and control agencies	Environmental, radiation and industrial safety; infrastructure development; taxes, engagement; social responsibility; connection of the Institute development with the regional interests; combination of the Institute development prospects with the state interests; presence territory development programs
Various-level educational institutions	Participation of the Institute specialists in the educational process and job prospects for the graduates
Local population	Available jobs, positive impact of the Institute activity on the population living standards
Mass media	The possibility to obtain information on the development prospects, environmental safety, Institute key events



Stakeholder ranking chart created on the basis of a questionnaire of their representatives and JSC "SSC RIAR" high and mid-level managers

5.3.

DIALOGUES WITH INTERESTED PARTIES

JSC "SSC RIAR" in generating the 2012 public annual report conducted three dialogues on the important issues with the representatives of interested parties.

DIALOGUE No. 1 "DISCUSSION OF THE ANNUAL REPORT CONCEPT WITH INTERESTED PARTIES"

The dialogue took place on January 28, 2013 at the Conference Center covering the 2012 JSC "SSC RIAR" public annual report.

The following representatives of interested parties joined the dialogue:

1. A.A. Smekalin – Minister of Strategic Development and Innovations of Ulyanovsk region.
2. A.V. Baryshev – First Deputy Head of Dimitrovgrad Administration.
3. I.N. Kremlyakov – Head of Environmental Protection Service of Melekessky District.
4. I.A. Kungurtsev – Chairman of JSC "SSC RIAR" Trade Union.
5. I.A. Sagan – Head of Dimitrovgrad Institute of Engineering and Technology – National Research Nuclear University MEPhI Branch.
6. V.M. Plottsev – Deputy Head of Ulyanovsk State University Scientific Research Office.
7. A.D. Voronin – Chairman of Town Public Organization "Veterans of War and Labor".
8. S.E. Knyaginina – Head of "Dimitrovgrad" Newspaper Economics Department.
9. A.S. Subbaeva – "Bolshoy Cheremshan" Newspaper journalist.

During the dialogue S.V. Pavlov, Director of JSC "SSC RIAR" made a speech. In his contribution, he outlined the key objectives of public annual reporting, highlighted the priorities and aspects of JSC "SSC RIAR" activity to be covered in the report and noted that JSC "SSC RIAR" is the only institution in the region providing public reporting. The speaker paid attention to the increased disclosure level compared to the latest report.

After his speech D.A. Kornilov, Deputy Director for Strategic Development and Research Activity of JSC "SSC RIAR" introduced the public annual report concept covering in details the objectives, structure and format of the 2012 public annual report of JSC "SSC RIAR" as well as the procedures of interaction with interested parties in generating the draft report and the subsequent public hearings. The speaker also talked about the system of public reporting indices and factors, the results of a questionnaire of interested parties and time schedule for the work performance.

During the public annual report concept discussion the following proposals were made:

1. V.M. Plottsev noted that the 2011 public annual report did not reflect in full the cooperation with Ulyanovsk State University and asked this to be corrected in the 2012 report.
2. A.V. Baryshev suggested paying more attention in the public annual report new revision to RIAR's participation in the international projects and emphasizing the development of the scientific research experimental base and high-skill training.
3. A.A. Smekalin pointed out the necessity to pay more attention to the public annual report promotion and asked the role and place of JSC "SSC RIAR" in the implementation of the Dimitrovgrad Nuclear-Innovative Cluster development program, social projects and territory development program to be reflected.

A.V. Baryshev suggested that the 2012 JSC "SSC RIAR" public annual report concept should be approved and its further development continued in accordance with the time schedule. All the attendees supported the proposal by voting unanimously.

In conclusion, S.V. Pavlov expressed his gratitude to the attendees for the work and assured that the Institute specialists responsible for the issue of the public annual report would do their best to perform all the scheduled events in time and follow the established time schedule.

DIALOGUE No. 2
"ESTABLISHMENT OF JSC "SSC RIAR" RESEARCH BASE TO JUSTIFY A NEW NUCLEAR ENERGY TECHNOLOGY PLATFORM"

The dialogue took place on March 18, 2013 at the Conference Center with the following participants:

1. A.A. Smekalin – Minister of Strategic Development and Innovations of Ulyanovsk region.
2. A.V. Baryshev – First Deputy Head of Dimitrovgrad Administration.
3. I.A. Kungurtsev – Chairman of JSC "SSC RIAR" Trade Union.
4. I.A. Sagan – Head of Dimitrovgrad Institute of Engineering and Technology – National Research Nuclear University MEPhI Branch.
5. V.M. Plottsev – Deputy Head of Ulyanovsk State University Scientific Research Office.
6. A.D. Voronin – Chairman of Town Public Organization "Veterans of War and Labor".
7. S.E. Knyaginina – Head of "Dimitrovgrad" Newspaper Economics Department.

In the course of the dialogue A.L. Petelin, Chief Engineer of JSC "SSC RIAR" made his speech covering the key projects to be implemented at the Institute in the near future. He described in details the projects related to the replacement of the Reactor Material Testing Complex testing equipment, upgrades of the operating research reactor facilities, construction of the new MBIR research reactor and Polyfunctional Research Radiochemical Complex.

Dialogue with interested parties at the Conference Center

During the discussion the attendees asked their questions on the human resources for the newly established objects, dates of commissioning and influence on the radiation situation in the region. Full answers were provided to all the questions.

DIALOGUE No. 3
"NUCLEAR TECHNOLOGY DEVELOPMENT AT JSC "SSC RIAR" FOR THE NON-ENERGY MARKETS"

The dialogue took place on April 16, 2013 at the Conference Center with the following participants:

1. A.V. Baryshev – First Deputy Head of Dimitrovgrad Administration.
2. E.A. Volokitin – Deputy Chairman of JSC "SSC RIAR" Trade Union.
3. V.Kh. Bronz – Head of Department at Dimitrovgrad Institute of Engineering and Technology – National Research Nuclear University MEPhI Branch.
4. V.M. Plottsev – Deputy Head of Ulyanovsk State University Scientific Research Office.
5. A.D. Voronin – Chairman of Town Public Organization "Veterans of War and Labor".
6. S.E. Knyaginina – Head of "Dimitrovgrad" Newspaper Economics Department.

In the course of the dialogue the draft 2012 public annual report of JSC "SSC RIAR" was presented to the representatives of interested parties. Yu.A. Valikov, Head of Communications Department informed the participants of the key 2012 events and new projects. S.S. Poglyad, Head of Radiochemical Division Bureau talked about Polyfunctional Radiochemical Complex describing in detail the distinguishing features of a new automated complex from the existing JSC "SSC RIAR" hot cells. The speaker referred both to remotely-controlled manipulators and modular principle of the building structure and separate parts.

During the discussion, A.V. Baryshev paid attention to the public annual report Section related to the participation of JSC "SSC RIAR" in the development of Dimitrovgrad Nuclear-Innovative Cluster in Ulyanovsk region, improvement of the educational situation in Dimitrovgrad and social programs including those for the young specialists and stressed its importance.

5.4.

PLANS AND LIABILITIES TO INTERESTED PARTIES

The final dialogue took place in summer, 2013 at the Conference Center with the representatives of four groups of interested parties: Dimitrovgrad administration, public organizations, secondary and higher professional educational institutions, mass media. The representatives of interested parties could make certain that all the requests and proposals by the attendees of the previously conducted disclosure dialogues were taken into account in the 2012 JSC "SSC RIAR" public report.

RIAR's liabilities for the information disclosure during the report issuing

The information to be disclosed	Implementation
Participation of JSC "SSC RIAR" in the international projects	Information on the Institute participation in the international projects is given in Section "International Cooperation". Compared to the 2011 report, the Section is enlarged, the information is given on the key areas of international cooperation and partners as well as important 2012 events
Development of JSC"SSC RIAR" experimental base and its competitiveness	Considering the wishes of interested parties, the creation and development of the experimental and research base of JSC "SSC RIAR" is chosen one of the main topics of the report. The implementation of the key projects of the Institute is presented in Section "Results of Basic Activities"
Training	The 2012 report gives a more detailed view on the training issues compared to the last report in Section "Personnel Management and Social Policy"

Requests and proposals on disclosure voiced by interested parties during the dialogues

Requests / proposals of the attendees	Implementation
Interaction and collaboration with higher educational institutions	JSC "SSC RIAR" collaboration with higher educational institutions in the target training and joint scientific and research activity is given in Section "Personnel Management and Social Policy". A special place is devoted to the results of the joint project implementation under the resolution of the Government of the Russian Federation as of April 09, 2010 No. 218 "State Support Measures on Cooperation Development of Higher Education Institutions and Organizations of the Russian Federation Implementing Comprehensive Projects on High-Tech Production" (Section "Results of Basic Activities")
JSC "SSC RIAR" participation in the international projects	RIAR's participation in the international projects is presented in Section "International Cooperation". In comparison to the 2011 report, the Section is enlarged, the key directions of the international cooperation and partners are given as well as important events in the international activity
JSC "SSC RIAR" role and place in the implementation of Dimitrovgrad Nuclear-Innovative Cluster program	Considering the importance of Dimitrovgrad Nuclear-Innovative Cluster development for the population at JSC "SSC RIAR" presence territory, this direction was devoted to a separate Section entitled "Nuclear-Innovative Cluster"

5.5.

DECISION OF PUBLIC HEARINGS ON THE JSC "SSC RIAR" PUBLIC ANNUAL REPORT

INTRODUCTION

Joint Stock Company "State Scientific Center – Research Institute of Atomic Reactors" (hereinafter referred to as JSC "SSC RIAR") suggested that we should evaluate its 2012 public annual report (hereinafter referred to as Report) including the completeness and significance of the disclosed information on the most important issues for interested parties. To do this, the representatives of interested parties were given an opportunity to join the public hearings of the 2012 draft public annual report of JSC "SSC RIAR" that took place in summer, 2013 as well as three dialogues with interested parties.

DRAFT PUBLIC ANNUAL REPORT EVALUATION PROCEDURE

Our conclusion is based on the comparative analysis of two Report versions: draft Report for public hearings and final Report and given materials on the results of the conducted dialogues and hearings: record of the dialogues, tables where the comments of interested parties are taken into account as well as comments given by the management and specialists of JSC "SSC RIAR" during the Report public hearings.

During the Report public hearings we were not aimed at checking the data acquisition and processing system, we did not conduct a special study of the data and management processes. The credibility of the actual data given in the Report is not as well the subject of public hearings. All the attendees of the public hearings had a full opportunity to freely express their opinions and did not obtain any award from JSC "SSC RIAR" for their participation in the public hearings procedure.

EVALUATIONS, COMMENTS AND RECOMMENDATIONS

We are all agreed on the positive evaluation of the 2012 public annual report of JSC "SSC RIAR", its format and scope of the presented information. It is particularly important that the Report is issued on a voluntary basis and it is a good example of the transparency and openness principle implementation on the part of JSC "SSC RIAR". JSC "SSC RIAR" has shown both a high professional level of information disclosure and the readiness to conduct an open dialogue with interested parties on a variety of issues related to the areas of its activity including safe operation of the research reactor facilities and other facilities. We can see that the management of JSC "SSC RIAR" aims at constructive interaction with interested parties. We are not aware of any fact that questions the credibility of the information given in the Report.

We believe that during the public consultations and other public hearings events related to the public annual report with the participation of interested parties JSC "SSC RIAR" gave the detailed information on the strategic aims, development key points, results of activity over the reporting period and contribution to the town development presenting in detail all areas of the Institute activity.

The absolute advantage of the Report is using the international standards during its generation (Sustained Development Reporting Guideline (Global Reporting Initiative, version G3.1)), as well as the integrated nature of the Report that allowed information disclosure in an integrated manner on the key areas of JSC "SSC RIAR" activity in 2012 considering its sustained development assurance. The decision of JSC "SSC RIAR" management to generate the Report both in the Russian and English language was noted positively. It was particularly noted that in contrast to other public reports by ROSATOM sites, the JSC "SSC RIAR" public annual report is the official publication: it was assigned an ISBN number, the UDC identifier and underwent the editorial and publishing preparation ensuring the high quality of the published material and compliance with all the editorial and publishing standards.

We regard the disclosure in the Report as sufficient in terms of both using the public reporting international standards and taking into account the comments of interested parties voiced during the Report generation. In our view it is the integrated Report that should present the official position of the JSC "SSC RIAR" management on all key pubic issues of importance and areas of the Institute activity.

SIGNIFICANCE OF THE ISSUES PRESENTED IN THE PUBLIC ANNUAL REPORT

The Report reveals the meaning and public importance of the JSC "SSC RIAR" activity as one of the key ROSATOM and town core enterprises. We believe that the Report reflects all the topics significant for interested parties including the strategic priorities and directions of the Institute development, its unique competitive advantages and growth prospects, the aspects of the financial management effectiveness increase, influence on the economy, social sphere and environment as well as safety issues during the project implementation. We are not aware of any other issues significant for interested parties that were to be included in the Report by JSC "SSC RIAR".

COMPLETENESS OF INFORMATION

Though the representatives of interested parties still have questions to the JSC "SSC RIAR" management and would like to know the responses, we consider it inappropriate to expand the scope of the Report. We recommend that in the subsequent reports JSC "SSC RIAR" give more details on the business model and the development strategy of the Institute, participation of JSC "SSC RIAR" in the international projects, the Institute development as the key industry experimental platform to create and justify a new nuclear energy technological platform of Russia including the staff training issues.

JSC "SSC RIAR" RESPONSE TO THE COMMENTS AND WISHES OF INTERESTED PARTIES

We believe that JSC "SSC RIAR" has shown considerable progress in the development of the interaction between interested parties and public reporting practice establishment. It should be noted that the interaction itself began at the stage of the Report concept formation: interested parties were given an opportunity to voice their wishes and recommendations on disclosure of information in the Report.

JSC "SSC RIAR" attention to the comments, proposals and recommendations of interested parties was approved by the fact that the final Report version included the proposed changes introduced during the dialogues: the additional information on collaboration with Ulyanovsk State University, contribution of JSC "SSC RIAR" to the implementation of the Dimitrovgrad Nuclear-Innovative Cluster development program, the scope of the data related to the international cooperation was enlarged. We believe that the changes introduced in the Report after the comments had been voiced by the participants during the dialogues allowed improving the Report quality.

We hope that JSC "SSC RIAR" will subsequently fulfill the liabilities, plans and intentions presented in the 2012 Report.

Representatives of interested parties

Deputy Minister of Strategic Development and Innovations of Ulyanovsk region		R.T. Davlyatshin
Head of Municipal Formation "Town of Dimitrovgrad"		N.A. Gorshenin
Head of Dimitrovgrad Institute of Engineering and Technology – National Research Nuclear University MEPhI Branch		I.A. Sagan
Deputy Head of Ulyanovsk State University Scientific Research Office		V.M. Plottsev
Chairman of JSC "SSC RIAR" Trade Union		I.A. Kungurtsev
Chairman of Town Public Organization "Veterans of War and Labor"		A.D. Voronin
Head of "Dimitrovgrad" Newspaper Economics Department		S.E. Knyaginina
"Mestnoye Vremya" Newspaper journalist		E.N. Ishmukov

6 CONCLUSIONS AND APPENDICES

PUBLIC
ANNUAL REPORT
2012
OF STATE SCIENTIFIC CENTER –
RESEARCH INSTITUTE
OF ATOMIC REACTORS

6.1.

DEPARTMENTS OF JSC "SSC RIAR"

Names of the departments given in the organization chart of JSC "SSC RIAR" dated March 25, 2011

Abbreviated name	Full name
AA	Postgraduate and Competence Assessment Center
BOI	Data Processing Bureau
BSI	Special Data Bureau
GZHK	Hotel Service
GB	General Accounting Department
GMR	Mobilization Training Group
GPS	Industrial Communication Group
DBUTSI	Department for Budget Management, Prices & Expenditures
DPKRIUIK	Department for Legal and Corporate Activities and Property Management
DPSRINTD	Department for Strategic Development and Research Activities
ZPU	Out-of-Town Control Center
IKTS	Emergency Data Center
KORO	Radioactive Waste Management Department
KO	Design Bureau
NKTS	Conference Center
OF	Documentation Center
OETS	Research & Trial Workshop
OMTS	Logistics Department
OGM	Chief Mechanical Engineer Department
OGS	Chief Welder Department
OGCHS	Public Defense and Emergencies Department
OZI	Information Protection Department
OZOS	Environmental Protection Department
OK	HR Department
OKSИ	Quality & Systems Engineering Department
OKS	Capital Construction Department
OMIT	Metrology & Instrumentation Department
OIP	Isotopes Supply Department
OOTiTB	Health and Safety Department
OOPRP	Personnel Assessment, Training and Development Department
OPRZ	Orders Planning & Placing Department
ORIP	Division for Radionuclide Sources and Radiochemicals
ORB	Radiation Safety Department

ORM	Reactor Material Testing Complex
OSR	Social Work Department
OTK	Quality Control Department
OTiZ	Payroll Department
OKhTUK	NM Storage, Transportation, Control & Account Division
PTO	Production and Technology Department
PEK	Production and Power Complex
RKhO	Radiochemical Division
VK-50	VK-50 Reactor Facility
RIC	Research Reactors Complex
SK	Communication Service
SP	Therapy Center
SB	Safety Service
SDOU	Office for Documentation Support of Management
SPO FEB	Software Support Service for Finance & Economy Department
SSB	Inherent Security Service
TKhK	General Service Department
TTS	Transportation Department
UPTK	Production and Processing Equipment Area
FO	Finance Department
KhTO	Chemical Technology Division
TsIP IYaU	Center for Information Support of Research Reactors Operation
TsPiK ID	Center for Planning and Control of Investment Activities
TsPiK NIOKR	R&D Planning and Control Center
TsPiK RK	Reactor Complex Planning and Control Center
TsMTPiFZ	International Technical Assistance and Physical Protection Center
TsAI IYaU	RR Safety Data Acquisition & Analysis Center
TSZG	Greenhouse Facilities
TSOP	Public Catering Department
TSTSR	Repair & Maintenance Workshop

6.2.

ACCOUNTING REPORTS

Бухгалтерский баланс
на 31 декабря 20 12 г.

		Коды		
	Форма по ОКУД	0710001		
	Дата (число, месяц, год)	20	02	2013
Организация ОАО "ГНЦ НИИАР"	по ОКПО	20553876		
Идентификационный номер налогоплательщика	ИНН	7302040242		
Вид экономической деятельности: Научные исследования и разработки	по ОКВЭД	73.10		
Организационно-правовая форма/форма собственности: Открытое акционерное общество / федеральная собственность	по ОКОПФ/ОКФС	47	12	
Единица измерения: тыс. руб.	по ОКЕИ	384		

Местонахождение (адрес) Ульяновская область, 433510, г. Димитровград - 10

Поясне-ния	Наименование показателя	Код	На 31 декабря 20 12 г.	На 31 декабря 20 11 г.	На 31 декабря 20 10 г.
	АКТИВ				
	I. ВНЕОБОРОТНЫЕ АКТИВЫ				
1.1	Нематериальные активы	1110	329	331	388
	Результаты исследований и разработок	1120	-	-	-
	Нематериальные поисковые активы	1130			
	Материальные поисковые активы	1140			
	Основные средства	1150	5 672 492	4 501 901	3 123 082
2.1	Здания, машины, оборудование и другие основные средства	1151	2 223 189	2 110 971	2 074 989
2.2	Незавершенные капитальные вложения в объекты ОС	1152	3 383 002	2 221 481	776 085
	Авансы выданные поставщикам и подрядчикам по капитальному строительству, поставщикам объектов основных средств	1153	66 302	169 448	272 008
	Доходные вложения в материальные ценности	1160	-	-	-
3.1	Финансовые вложения	1170	12 624	12 435	4 937
13.2	Отложенные налоговые активы	1180	93 200	41 742	-
1.5	Прочие внеоборотные активы	1190	153 471	74 741	47 895
	Итого по разделу I	1100	**5 932 116**	**4 631 150**	**3 176 301**
	II. ОБОРОТНЫЕ АКТИВЫ				
4.1	Запасы	1210	2 190 597	1 264 798	703 409
	сырье, материалы и другие аналогичные ценности	1211	1 342 871	691 594	441 881
	затраты в незавершенном производстве	1212	847 329	571 452	260 126
	готовая продукция и товары для перепродажи	1213	381	1 736	1 403
	товары отгруженные	1214	-	-	-
	расходы будущих периодов	1215	-	-	-
	не предъявленная к оплате начисленная выручка	1216	-	-	-
	прочие запасы и затраты	1217	16	16	-
	Налог на добавленную стоимость по приобретенным ценностям	1220	134 176	223 326	139 252
5	Дебиторская задолженность	1230	1 306 304	846 450	720 143
5.1	Долгосрочная дебиторская задолженность - всего	1231	1 413	3 120	3 130
	расчеты с покупателями и заказчиками	1232	-	-	-
	авансы выданные	1233	1 413	3 120	3 130
	прочие дебиторы	1234	-	-	-
5.1	Краткосрочная дебиторская задолженность - всего	1235	1 304 891	843 330	717 014
	расчеты с покупателями и заказчиками	1236	839 849	629 600	557 596
	авансы выданные	1237	275 168	116 131	130 588
	прочие дебиторы	1238	189 874	97 599	28 830
	Финансовые вложения (за исключением денежных эквивалентов)	1240	-	-	-
27.1	Денежные средства и денежные эквиваленты	1250	369 199	156 213	204 865
5.6	Прочие оборотные активы	1260	154 951	33 480	6 577
	Итого по разделу II	1200	**4 155 226**	**2 524 267**	**1 774 246**
	БАЛАНС	**1600**	**10 087 343**	**7 155 417**	**4 950 547**

Форма 0710001 с. 2

Поясне-ния	Наименование показателя	Код	На 31 декабря 20 12 г.	На 31 декабря 20 11 г.	На 31 декабря 20 10 г.
	ПАССИВ				
	III. КАПИТАЛ И РЕЗЕРВЫ				
15.6	Уставный капитал (складочный капитал, уставный фонд, вклады товарищей)	1310	2 708 931	2 448 377	2 278 846
	Собственные акции, выкупленные у акционеров	1320	(-)	(-)	(-)
	Переоценка внеоборотных активов	1340	-	-	-
	Добавочный капитал (без переоценки)	1350	904 965	318 719	-
	Резервный капитал	1360	20 660	16 545	9 638
25.1	резервные фонды, образованные в соответствии с законодательством	1361	20 607	16 491	9 615
	резервы, образованные в соответствии с учредительными документами	1362	53	53	23
	Нераспределенная прибыль (непокрытый убыток)	1370	(900 852)	(493 240)	(66 447)
	Итого по разделу III	1300	**2 733 704**	**2 290 401**	**2 222 037**
	IV. ДОЛГОСРОЧНЫЕ ОБЯЗАТЕЛЬСТВА				
14.2	Заемные средства	1410	92 200	1 065 500	838 600
	Отложенные налоговые обязательства	1420	-	-	69 290
7.1	Оценочные обязательства	1430	356 943	297 141	-
	Прочие обязательства	1450	-	-	-
	Итого по разделу IV	1400	**449 143**	**1 362 641**	**907 890**
	V. КРАТКОСРОЧНЫЕ ОБЯЗАТЕЛЬСТВА				
14.2	Заемные средства	1510	7 956	400 161	56 184
5.3	Кредиторская задолженность	1520	2 945 850	1 263 063	812 489
	поставщики и подрядчики	1521	1 634 575	774 366	539 402
	авансы полученные	1522	1 075 769	245 883	58 305
	задолженность перед персоналом	1523	131 539	116 657	88 819
	задолженность перед государственными внебюджетными фондами	1524	44 650	42 546	33 169
5.5	задолженность по налогам и сборам	1525	24 990	52 689	63 706
	прочие кредиторы	1526	34 327	30 922	29 088
10.1	Доходы будущих периодов	1530	1 030 335	858 459	346 754
7.2	Оценочные обязательства	1540	201 755	133 894	116 942
27.4	Расчеты с учредителями по взносам в уставный капитал (уставный фонд)	1545	2 718 600	846 800	488 250
	Прочие обязательства	1550	-	-	-
	Итого по разделу V	1500	**6 904 496**	**3 502 376**	**1 820 619**
	БАЛАНС	**1700**	**10 087 343**	**7 155 417**	**4 950 547**

Руководитель _____ Павлов С.В. Главный бухгалтер _____ Живайкина И.М.
(подпись) (расшифровка подписи) (подпись) (расшифровка подписи)

"20" февраля 20 13 г.

Заместитель директора по экономике и финансам ОАО "ГНЦ НИИАР" Князькин Игорь Александрович

Отчет о финансовых результатах

за год 20 12 г.

		Коды		
	Форма по ОКУД	0710002		
	Дата (число, месяц, год)	20	02	2013
Организация ОАО "ГНЦ НИИАР"	по ОКПО	20553876		
Идентификационный номер налогоплательщика	ИНН	7302040242		
Вид экономической деятельности Научные исследования и разработки	по ОКВЭД	73.10		
Организационно-правовая форма/форма собственности: Открытое акционерное общество / федеральная собственность	по ОКОПФ/ОКФС	47	12	
Единица измерения: тыс. руб.	по ОКЕИ	384		

Поясне-ния	Наименование показателя	Код	За год 20 12 г.	За год 20 11 г.
11.1	Выручка	2110	4 458 789	3 120 901
6.1	Себестоимость продаж	2120	(4 433 095)	(2 844 259)
	Валовая прибыль (убыток)	2100	25 694	276 642
26.2	Коммерческие расходы	2210	(51 803)	(50 087)
26.2	Управленческие расходы	2220	(499 336)	(319 626)
	Прибыль (убыток) от продаж	2200	(525 445)	(93 071)
3.1	Доходы от участия в других организациях	2310	28 294	22 688
	Проценты к получению	2320	2 705	4 803
	Проценты к уплате	2330	(117 213)	(84 231)
11.3	Прочие доходы	2340	436 989	154 616
11.3	Прочие расходы	2350	(276 206)	(495 885)
	Прибыль (убыток) до налогообложения	2300	(450 876)	(491 080)
13.1	Текущий налог на прибыль	2410	-	(42 158)
13.1	в т.ч. постоянные налоговые обязательства (активы)	2421	(38 717)	(29 341)
13.1	Изменение отложенных налоговых обязательств	2430	60 834	(25 775)
13.1	Изменение отложенных налоговых активов	2450	(9 376)	136 808
	Прочее	2460	(11 829)	(6 218)
	Перераспределение налога на прибыль внутри консолидированной группы налогоплательщиков	2465	-	-
	Чистая прибыль (убыток)	2400	(411 247)	(428 423)

Поясне-ния	Наименование показателя	Код	За год 20 12 г.	За год 20 11 г.
	СПРАВОЧНО Результат от переоценки внеоборотных активов, не включаемый в чистую прибыль (убыток) периода	2510	-	-
25.2	Результат от прочих операций, не включаемый в чистую прибыль (убыток) периода	2520	380	50
	Совокупный финансовый результат периода	2500	(410 867)	(428 373)
	Базовая прибыль (убыток) на акцию	2900	$(154*10^{-3})$	$(177*10^{-3})$
	Разводненная прибыль (убыток) на акцию	2910	-	-

Руководитель (подпись) Павлов С.В. (расшифровка подписи)

Главный бухгалтер (подпись) Живайкина И.М. (расшифровка подписи)

"20" февраля 20 13 г.

Заместитель директора по экономике и финансам ОАО "ГНЦ НИИАР" Князьюин Игорь Александрович

Отчет об изменениях капитала
за 20 12 г.

		Коды
	Форма по ОКУД	0710003
	Дата (число, месяц, год)	20 | 02 | 2013
Организация ОАО "ГНЦ НИИАР"	по ОКПО	20553876
Идентификационный номер налогоплательщика	ИНН	7302040242
Вид экономической деятельности: Научные исследования и разработки	по ОКВЭД	73.10
Организационно-правовая форма/форма собственности: Открытое акционерное общество / федеральная собственность	по ОКОПФ/ОКФС	47 | 12
Единица измерения: тыс. руб.	по ОКЕИ	384

1. Движение капитала

Наименование показателя	Код	Уставный капитал	Собственные акции, выкупленные у акционеров	Добавочный капитал	Резервный капитал	Нераспределенная прибыль (непокрытый убыток)	Итого
Величина капитала на 31 декабря 20 10 г.	3100	2 278 846	( )	0	9 638	(66 447)	2 222 037
За 20 11 г.							
Увеличение капитала - всего:	3210	169 531	0	318 719	22 180	1 611	512 041
в том числе: чистая прибыль	3211	x	x	x	x		-
переоценка имущества	3212	x	x		x		
доходы, относящиеся непосредственно на увеличение капитала	3213	x	x		22 180		22 180
дополнительный выпуск акций	3214	169 531	-	318 719	x	x	488 250
увеличение номинальной стоимости акций	3215				x	x	x
реорганизация юридического лица	3216						
использование отраслевых резервов на инвестиционные цели	3217					1 611	1 611

Форма 0710023 с. 2

Наименование показателя	Код	Уставный капитал	Собственные акции, выкупленные у акционеров	Добавочный капитал	Резервный капитал	Нераспределенная прибыль (непокрытый убыток)	Итого
Уменьшение капитала - всего:	3220	( )		( )	(15 273)	(428 404)	(443 677)
в том числе: убыток	3221	x	x	x	x	(428 404)	(428 404)
переоценка имущества	3222	x	x	( )	x	( )	( )
расходы, относящиеся непосредственно на уменьшение капитала	3223	x	x	( )	(15 273)	( )	(15 273)
уменьшение номинальной стоимости акций	3224	( )			x		( )
уменьшение количества акций	3225	( )			x		( )
реорганизация юридического лица	3226						( )
дивиденды	3227	x	x	x	x	( )	( )
Изменение добавочного капитала	3230	x	x				x
Изменение резервного капитала	3240	x	x	x	6 907		6 907
Величина капитала на 31 декабря 20 11 г.	3200	2 448 377	(0)	318 719	16 545	(493 240)	2 290 401
За 20 12 г. Увеличение капитала - всего:	3310	260 554	x	586 246	32 607	3 635	883 042
в том числе: чистая прибыль	3311	x	x	x	x		
переоценка имущества	3312	x	x		x		
доходы, относящиеся непосредственно на увеличение капитала	3313	x	x		32 607		32 607
дополнительный выпуск акций	3314	260 554	x	586 246	x	x	846 800
увеличение номинальной стоимости акций	3315				x	x	x
реорганизация юридического лица	3316						
использование отраслевых резервов на инвестиционные цели	3317	x	x	x	x	3 635	3 635
Уменьшение капитала - всего:	3320	( )		( )	(28 492)	(411 247)	(439 739)
в том числе: убыток	3321	x	x	x	x	(411 247)	(411 247)
переоценка имущества	3322	x	x	( )	x	( )	( )
расходы, относящиеся непосредственно на уменьшение капитала	3323	x	x	( )	(28 492)	( )	(28 492)
уменьшение номинальной стоимости акций	3324	( )			x		( )
уменьшение количества акций	3325	( )			x		( )
реорганизация юридического лица	3326						( )
дивиденды	3327	x	x	x	x	( )	( )
Изменение добавочного капитала	3330	x	x				x
Изменение резервного капитала	3340	x	x	x	4 115		4 115
Величина капитала на 31 декабря 20 12 г.	3300	2 708 931	(0)	904 965	20 660	(900 852)	2 733 704

Форма 0710023 с. 3

2. Корректировки в связи с изменением учетной политики и исправлением ошибок

Наименование показателя	Код	На 31 декабря 20 10 г.	Изменения капитала за 20 11 г.		На 31 декабря 20 11 г.
			за счет чистой прибыли (убытка)	за счет иных факторов	
Капитал - всего					
до корректировок	3400	2 222 037	(428 423)	496 787	2 290 401
корректировка в связи с:					
изменением учетной политики	3410	-	-	-	-
исправлением ошибок	3420	-	-	-	-
после корректировок	3500	2 222 037	(428 423)	496 787	2 290 401
в том числе:					
нераспределенная прибыль (непокрытый убыток):					
до корректировок	3401	(66 447)	(428 423)	1 660	(493 210)
корректировка в связи с:					
изменением учетной политики	3411	-	(30)	-	(30)
исправлением ошибок	3421	-	-	-	-
после корректировок	3501	(66 447)	(428 453)	1 660	(493 240)
другие статьи капитала, по которым осуществлены корректировки: (по статьям)					
до корректировок	3402	2 288 485		495 156	2 783 641
корректировка в связи с:					
изменением учетной политики	3412				
исправлением ошибок	3422				
после корректировок	3502	2 288 485	0	495 156	2 783 641

Форма 0710023 с. 4

3. Чистые активы

Наименование показателя	Код	На 31 декабря 20 12 г.	На 31 декабря 20 11 г.	На 31 декабря 20 10 г.
Чистые активы	3600	6 482 639	3 995 659	3 057 041

Руководитель _____ Павлов С.В. (подпись) (расшифровка подписи)

Заместитель директора по экономике и финансам Киевская Людмила Александровна

Главный бухгалтер _____ Живайкина И.М. (подпись) (расшифровка подписи)

" 20 " февраля 20 13 г.

Примечания

1. Указывается год, предшествующий предыдущему.
2. Указывается предыдущий год.
3. Указывается отчетный год.

Отчет о движении денежных средств
за год 20 12 г.

		Коды		
	Форма по ОКУД	0710004		
	Дата (число, месяц, год)	30	01	2013
Организация ОАО "ГНЦ НИИАР"	по ОКПО	20553876		
Идентификационный номер налогоплательщика	ИНН	7302040242		
Вид экономической деятельности: Научные исследования и разработки	по ОКВЭД	73.10		
Организационно-правовая форма/форма собственности: Открытое акционерное общество / федеральная собственность	по ОКОПФ/ОКФС	47	12	
Единица измерения: тыс. руб./~~млн. руб.~~ (ненужное зачеркнуть)	по ОКЕИ	384		

Наименование показателя	Код	За год 20 12 г.	За год 20 11 г.
Денежные потоки от текущих операций			
Поступление - всего	4110	5 104 434	3 167 636
в том числе: от продажи продукции, товаров, работ и услуг	4111	4 925 519	3 065 349
арендных платежей, лицензионных платежей, роялти, комиссионных и иных аналогичных платежей	4112	2 523	1 997
от перепродажи финансовых вложений	4113	-	-
прочие поступления	4119	176 392	100 290
Платежи - всего	4120	(5 580 158)	(4 173 989)
в том числе: поставщикам (подрядчикам) за сырье, материалы, работы, услуги	4121	(3 516 847)	(2 528 716)
в связи с оплатой труда работников	4122	(1 161 220)	(924 485)
процентов по долговым обязательствам	4123	(145 684)	(81 453)
налога на прибыль организаций	4124	(39 717)	(7 576)
прочие платежи	4129	(716 690)	(631 759)
Сальдо денежных потоков от текущих операций	4100	(475 724)	(1 006 353)
Денежные потоки от инвестиционных операций			
Поступления - всего	4210	32 347	33 781
в том числе: от продажи внеоборотных активов (кроме финансовых вложений)	4211	36	12 735
от продажи акций других организаций (долей участия)	4212	8 412	-
от возврата предоставленных займов, от продажи долговых ценных бумаг (прав требования денежных средств к другим лицам)	4213	-	-
дивидендов, процентов по долговым финансовым вложениям и аналогичных поступлений от долевого участия в других организаций	4214	23 899	21 046
прочие поступления	4219	-	-
Платежи - всего	4220	(1 030 644)	(1 206 655)
в том числе: в связи с приобретением, созданием, модернизацией, реконструкцией и подготовкой к использованию внеоборотных активов	4221	(1 030 444)	(1 199 155)
в связи с приобретением акций других организаций (долей участия)	4222	(200)	(7 500)
в связи с приобретением долговых ценных бумаг (прав требования денежных средств к другим лицам), предоставление займов другим лицам	4223	-	-
процентов по долговым обязательствам, включаемым в стоимость инвестиционного актива	4224	-	-
прочие платежи	4229	-	-
Сальдо денежных потоков от инвестиционных операций	4200	(998 297)	(1 172 874)

Форма 0710004 с. 2

Наименование показателя	Код	За год 20 12 г.	За год 20 11 г.
Денежные потоки от финансовых операций			
Поступления - всего	4310	4 591 334	2 657 557
в том числе:			
получение кредитов и займов	4311	1 537 400	1 088 400
денежных вкладов собственников (участников)	4312	2 718 600	-
от выпуска акций, увеличения долей участия	4313		846 800
от выпуска облигаций, векселей и других долговых ценных бумаг и др.	4314	-	-
бюджетные ассигнования и иное целевое финансирование	4315	335 334	722 357
прочие поступления	4319	-	-
Платежи - всего	4320	(2 904 327)	(526 982)
в том числе:			
собственникам (участникам) в связи с выкупом у них акций (долей участия) организации или их выходом из состава участников	4321	-	-
на уплату дивидендов и иных платежей по распределению прибыли в пользу собственников (участников)	4322	-	-
в связи с погашением (выкупом) векселей и других долговых ценных бумаг, возврат кредитов и займов	4323	(2 896 500)	(520 300)
прочие платежи	4329	(7 827)	(6 682)
Сальдо денежных потоков от финансовых операций	4300	1 687 007	2 130 575
Сальдо денежных потоков за отчетный период	**4400**	**212 986**	**(48 652)**
Остаток денежных средств и денежных эквивалентов на начало отчетного периода	**4450**	**156 213**	**204 865**
Остаток денежных средств и денежных эквивалентов на конец отчетного периода	**4500**	**369 199**	**156 213**
Величина влияния изменений курса иностранной валюты по отношению к рублю	4490	(2 507)	23

Руководитель _____ Заместитель директора по экономике и финансам ОАО "ГНЦ НИИАР" Павлов О.В. (подпись) (расшифровка подписи)

Главный бухгалтер _____ Живайкина И.М. (подпись) (расшифровка подписи)

" 30 " января 20 13 г.

6.3.

AUDIT COMMISSION CONCLUSIONS

Открытое акционерное общество «Государственный научный центр научно-исследовательский институт атомных реакторов»

Заключение

Ревизионной комиссии по результатам проверки финансово-хозяйственной деятельности за 2012 год

г. Москва «___» апреля 2013 г.

В соответствии с Федеральным законом «Об акционерных обществах», Уставом ОАО «ГНЦ НИИАР» (далее - Общество), положением о Ревизионной комиссии Общества в период с 22 апреля 2013 г. по 30 апреля 2013 г. ревизионной комиссией Общества проведена проверка финансово-хозяйственной деятельности Общества за 2012 год.

Ревизионная комиссия избрана решением годового общего собрания акционеров Общества, протокол от «29» июня 2012г. №7, в составе:

- Глинчак Евгений Степанович;
- Кладков Андрей Юрьевич;
- Щенников Владимир Алексеевич.

Требования о проведении внеплановых проверок и ревизий от акционеров и Совета директоров в ревизионную комиссию в течение года не поступали.

В ходе проверки ревизионной комиссией выборочно исследованы следующие виды документов, отражающие существенные стороны деятельности Общества:

- бухгалтерский баланс по состоянию на 31 декабря 2012 год;
- отчет о прибылях и убытках за 2012 год;
- отчет об изменениях капитала за 2012 год;
- отчет о движении денежных средств за 2012 год;
- пояснительная записка.

Ревизионная комиссия в ходе проверки полагается, в том числе, на заключение Аудитора Общества: заключение Общества с ограниченной ответственностью «Финансовые и бухгалтерские консультанты» (ООО «ФБК») от 1 марта 2013 года.

По результатам проверки ревизионная комиссия:

1. Выражает мнение о достоверности данных содержащихся в финансовой (бухгалтерской) отчетности Общества во всех существенных отношениях;
2. Фактов нарушений установленного правовыми актами Российской Федерации порядка ведения бухгалтерского учета и представления финансовой отчетности, а также правовых актов Российской Федерации при осуществлении финансово-хозяйственной деятельности, которые могли бы существенно повлиять на достоверность данных отчетности Общества, не обнаружила.

Члены ревизионной комиссии: Е.С. Глинчак

А.Ю. Кладков

В.А. Щенников

6.4.

AUDIT REPORT ON FINANCIAL RECORDS

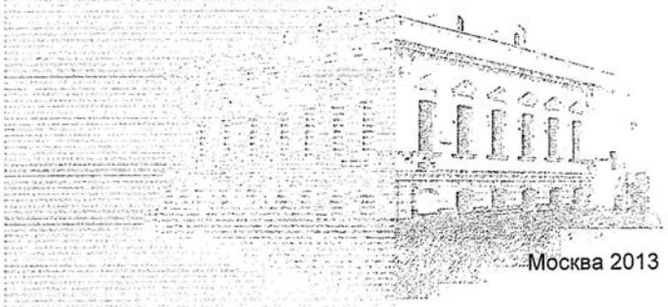
ФБК

■ АУДИТ ■ КОНСАЛТИНГ ■ ПРАВО ■

ОТКРЫТОЕ АКЦИОНЕРНОЕ ОБЩЕСТВО
«ГОСУДАРСТВЕННЫЙ НАУЧНЫЙ ЦЕНТР - НАУЧНО-ИССЛЕДОВАТЕЛЬСКИЙ ИНСТИТУТ АТОМНЫХ РЕАКТОРОВ»

Аудиторское заключение по финансовой (бухгалтерской) отчетности

за период с 01 января по 31 декабря 2012 г.



Москва 2013

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PKF

Accountants &
business advisers

Аудиторское заключение

Акционерам
Открытого акционерного общества
«Государственный научный центр - Научно-исследовательский институт атомных реакторов»

Аудируемое лицо

Наименование:

Открытое акционерное общество «Государственный научный центр - Научно-исследовательский институт атомных реакторов» (далее - ОАО «ГНЦ НИИАР»).

Место нахождения:

433510, Ульяновская область, г. Димитровград-10.

Государственная регистрация:

Зарегистрировано Инспекцией МНС России по №7 по Ульяновской области 1 сентября 2008 г., свидетельство: серия 73 № 002236368. Внесено в Единый государственный реестр юридических лиц за основным государственным номером 1087302001797.

Аудитор

Наименование:

Общество с ограниченной ответственностью «Финансовые и бухгалтерские консультанты» (ООО «ФБК»).

Место нахождения:

101990, г. Москва, ул. Мясницкая, д. 44/1, стр. 2АБ.

Государственная регистрация:

Зарегистрировано Московской регистрационной палатой 15 ноября 1993 г., свидетельство: серия ЮЗ 3 № 484.583 РП. Внесено в Единый государственный реестр юридических лиц 24 июля 2002 г. за основным государственным номером 1027700058286.

Членство в саморегулируемой организации аудиторов:

Некоммерческое партнерство «Аудиторская палата России».

Номер в реестре аудиторских организаций саморегулируемой организации аудиторов:

Свидетельство о членстве в некоммерческом партнерстве «Аудиторская палата России» № 5353, ОРНЗ – 10201039470.

Мы провели аудит прилагаемой бухгалтерской отчетности ОАО «ГНЦ НИИАР», состоящей из бухгалтерского баланса по состоянию на 31 декабря 2012 года, отчета о финансовых результатах, отчета об изменениях капитала и отчета о движении денежных средств за 2012 год, иных приложений к бухгалтерскому балансу и отчету о финансовых результатах.

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Ответственность аудируемого лица за бухгалтерскую отчетность

Руководство аудируемого лица несет ответственность за составление и достоверность указанной бухгалтерской отчетности в соответствии с российскими правилами составления бухгалтерской отчетности и за систему внутреннего контроля, необходимую для составления бухгалтерской отчетности, не содержащей существенных искажений вследствие недобросовестных действий или ошибок.

Ответственность аудитора

Наша ответственность заключается в выражении мнения о достоверности бухгалтерской отчетности на основе проведенного нами аудита. Мы проводили аудит в соответствии с федеральными стандартами аудиторской деятельности. Данные стандарты требуют соблюдения применимых этических норм, а также планирования и проведения аудита таким образом, чтобы получить достаточную уверенность в том, что бухгалтерская отчетность не содержит существенных искажений.

Аудит включал проведение аудиторских процедур, направленных на получение аудиторских доказательств, подтверждающих числовые показатели в бухгалтерской отчетности и раскрытие в ней информации. Выбор аудиторских процедур является предметом нашего суждения, которое основывается на оценке риска существенных искажений, допущенных вследствие недобросовестных действий или ошибок. В процессе оценки данного риска нами рассмотрена система внутреннего контроля, обеспечивающая составление и достоверность бухгалтерской отчетности с целью выбора соответствующих аудиторских процедур, но не с целью выражения мнения об эффективности системы внутреннего контроля. Аудит также включал оценку надлежащего характера применяемой учетной политики и обоснованности оценочных показателей, полученных руководством аудируемого лица, а также оценку представления бухгалтерской отчетности в целом.

Мы полагаем, что полученные в ходе аудита аудиторские доказательства дают достаточные основания для выражения мнения о достоверности бухгалтерской отчетности.

Мнение

По нашему мнению, бухгалтерская отчетность отражает достоверно во всех существенных отношениях финансовое положение ОАО «ГНЦ НИИАР» по состоянию на 31 декабря 2012 года, результаты его финансово-хозяйственной деятельности и движение денежных средств за 2012 год в соответствии с российскими правилами составления бухгалтерской отчетности.

Президент ООО «ФБК» С.М. Шапигузов
(на основании Устава)

ОБЩЕСТВО С ОГРАНИЧЕННОЙ ОТВЕТСТВЕННОСТЬЮ ФИНАНСОВЫЕ И БУХГАЛТЕРСКИЕ КОНСУЛЬТАНТЫ ФБК Г.Р. № 484583 г. МОСКВА

Дата аудиторского заключения:
«01» марта 2013 года

6.5.

LIST OF MAJOR TRANSACTIONS OF JSC "SSC RIAR" AND TRANSACTIONS WHICH JSC "SSC RIAR" HAD INTEREST IN

In the reporting period, the company made no transactions recognized as major according to the Federal Law No. 208 of the Russian Federation "Concerning Joint Stock Companies" dated December 26, 1995.

The list of transactions made by the company in the reporting year and recognized as interested-party transactions according to the Federal Law No. 208 of the Russian Federation "Concerning Joint Stock Companies" dated December 26, 1995 and subject to approval is given below.

List of interested-party transactions

No.	Subject of transaction and its basic terms and conditions	Entity interested in transaction	Managing body of the company that approved transaction
1.	Sublicensing contract No. 5/1641-D dated May 11, 2012 concluded under the following terms and conditions: **Contract parties** The Sublicensor – JSC "Atomenergoprom". The Sublicensee – JSC "SSC RIAR". **Subject of the contract** Within the framework of the contract the Licensee undertakes to provide the Sublicensee with the right to use (simple (non-exclusive) license) the results of intellectual activities (software), and the Sublicensee undertakes to pay to the Licensee the remuneration for providing the right to use the software in the amount and in the times specified by the contract. The Licensee guarantees that at the moment of transfer of the right to use the software the Licensee has all legal rights to grant to the Sublicensee the rights on the basis of sublicensing contract No. SD10 01314/10.4-10/68 concluded with JSC "KROK Incorporated" dated June 18, 2010 and under the present contract the Sublicensee will be provided with the right to use the software only within those rights and those ways of use provided for the Licensee by the sublicensing contract. **Price of the contract and payment procedure** The price of the contract consists of remuneration for granting to the Sub-licensee the right to use the software and makes up 1 788 304 (one million seven hundred eighty eight thousand three hundred four) rubles. Payment of remuneration is performed in full on the basis of the invoice of the Licensee no later than June 30, 2012. **Period of the contract validity** The contract comes into force from the date of its signing and is valid till complete performance of the assumed obligations by the parties	JSC "Atomenergoprom"	Board of Directors of JSC "SSC RIAR" (protocol No. 68 dated March 29, 2012)

No.	Subject of transaction and its basic terms and conditions	Entity interested in transaction	Managing body of the company that approved transaction
2.	Government contract No. N4x.45.90.12.1099 dated June 07, 2012 on the performance of the development work "Developments for justification of the BOR-60 reactor technical upgrading" concluded under the following terms and conditions: **Parties of the government contract** The Governmental Customer – ROSATOM operating on behalf of the Russian Federation. The Executor – JSC "SSC RIAR". **Subject of the government contract** The Executor undertakes to perform the development work according to the terms and conditions of the government contract and to submit in due time to the Customer in the order established by the government contract, and the Governmental Customer undertakes to accept and pay for the development work on the subject "Developments for justification of the BOR-60 reactor technical upgrading". The scope and terms of performance of the development work are defined by the execution list which is an integral part of the government contract. **Price of the government contract and payment procedure** According to the conditions of the government contract, the Governmental Customer pays 100 000 000 (one hundred million) rubles (without VAT) to the Executor for the performed development work according to the approved protocol of the agreement on the contractual price of the development work being an integral part of the government contract and according to the Tax Code of the Russian Federation. **Period of the government contract validity** The government contract comes into force from the moment of its signing and is valid till complete performance of the assumed obligations by the parties	ROSATOM	Board of Directors of JSC "SSC RIAR" (protocol No. 76 dated June 07, 2012)
3.	Contract No. 1/2571-D dated 06.04.2012 signed under the following terms and conditions: **Contract parties** ROSATOM (the Corporation) and JSC "SSC RIAR" (the Company) **Subject of the contract** In 2012, the Corporation allocates to the Company the target financing from the special reserve fund designed for financing the expenses for ensuring physical protection, account and control of nuclear materials, radiation substances and radiation wastes in the amount of 399 000 (three hundred ninety nine thousand) rubles for implementation of the project named "Improvement of Physical Protection System of the Company" included into the approved by the Corporation list of projects financed at the expense of special reserve funds of the Corporation. **Price of the contract and payment procedure** After signing the contract the Corporation, on the basis of the invoice issued by the Company, carries out initial financing of 30% of the sum within 10 working days from the moment of receiving the invoice. The subsequent financing is carried out according to the financing schedule being an integral part of the contract on the basis of the invoices issued by the Company. Financing is carried out after approval by the Corporation of the report on the target use of the received funds. Together with the report on the target use of the received funds, the Company submits to the Corporation the explanatory note about the work performance as a whole or its intermediate stages if those are provided by the technical assignment on the work performance within the period of validity of the present contract and reporting forms No. 5 and No. 6 approved by the Order of the Corporation No. 1-1/80-r-dsp dated September 14, 2010. **Period of validity of the contract** The contract comes into force from the date of its signing and is valid till December 31, 2013	ROSATOM	Board of Directors of JSC "SSC RIAR" (protocol No. 77 dated August 01, 2012)

No.	Subject of transaction and its basic terms and conditions	Entity interested in transaction	Managing body of the company that approved transaction
4.	Contract No. 1/2634-D dated April 06, 2012 signed under the following conditions: **Contract parties** ROSATOM (the Corporation) and JSC "SSC RIAR" (the Company). **Subject of the contract** In 2012, the Corporation allocates to the Company the target financing from the special reserve fund designed for ensuring modernization of the organizations of nuclear power industry and nuclear weapon complex of the Russian Federation, development of nuclear science and equipment, carrying out design and survey work and implementation of other investment projects in the amount of 3 240 000 (three million two hundred forty thousand) rubles for implementation of the project "Design and Survey Work on Modernization of the Automated Monitoring System of the Material Testing Complex Buildings at JSC "SSC RIAR"" included into the approved by the Corporation (Appendix 1 to protocol No.1 dated January 31, 2012) list of projects financed at the expense of special reserve funds of the Corporation. **Price of the contract and payment procedure** After signing the contract the Corporation, on the basis of the invoice issued by the Company, carries out initial financing of 30% of the sum within 10 working days from the moment of receiving the invoice. The subsequent financing is carried out according to the financing schedule being an integral part of the contract on the basis of the invoices issued by the Company. Financing is carried out after approval by the Corporation of the report on the target use of the received funds. Together with the report on the target use of the received funds, the Company submits to the Corporation the explanatory note about the work performance as a whole or its intermediate stages if those are provided by the technical assignment on the work performance within the period of validity of the present contract and reporting forms No. 5 and No. 6 approved by the Order of the Corporation No. 1-1/80-r-dsp dated September 14, 2010. **Period of the contract validity** The contract comes into force from the date of its signing and is valid till December 31, 2013	ROSATOM	Board of Directors of JSC "SSC RIAR" (protocol No. 77 dated August 01, 2012)
5.	Additional agreement No. 2 dated August 16, 2012 to agency contract No. 10.4-10/150 dated April 12, 2010 concluded under the following terms and conditions: **Parties of the additional agreement** The Agent – JSC "Atomenergoprom", the Principal – JSC "SSC RIAR". **Subject of the additional agreement** Within implementation of the agency contract the Principal charges, and the Agent assumes the obligation to conclude with "SAP CIS" Ltd. on its behalf, but at the expense of the Principal, the contract on rendering services on maintenance of the "SAP" software for 2012. **Price of the additional agreement and payment procedure** The cost of services under the additional agreement consists of remuneration for performance of an assignment to conclude with "SAP CIS" Ltd the contract on rendering services on maintenance of the "SAP" software for 2012 which makes 1% (one percent) of the Agent's expenses incurred by the Agent at the expense of the Principal according to the contracts on the goods delivery concluded between the Agent and the third parties (work performance, rendering services), including 18% VAT, and reimbursement of the Agent's expenses incurred by it due to the performance of this assignment. The Principal refunds the Agent's expenses on the basis of the acceptance certificate upon rendering services on maintenance on a quarterly basis. **Period of validity of the additional agreement** The date of execution of the Assignment to conclude the contract for rendering services with "SAP CIS" Ltd. – December 31, 2012. Conditions of the additional agreement cover the Agent's actions taken since December 01, 2011 until signing of the additional agreement	JSC "Atomenergoprom"	Board of Directors of JSC "SSC RIAR" (protocol No. 77 dated August 01, 2012)

6.6.

JSC "SSC RIAR" BOARD OF DIRECTORS REPORT ON THE 2012 ACTIVITIES

No.	Date	Protocol No.	Agenda
1.	03.02.2012	63	Approval of the interested party transaction – conclusion of the agreement on the orders placement between ROSATOM and JSC "SSC RIAR"
2.	17.02.2012	64	1. Enlistment of candidates to be elected to the Board of Directors of JSC "SSC RIAR" at the annual general shareholders meeting of JSC "SSC RIAR". 2. Enlistment of candidates to be elected to the Audit Commission of JSC "SSC RIAR" at the annual general shareholders meeting of JSC "SSC RIAR"
3.	02.03.2012	65	1. Determination of the price of services in the interested party transaction – contract No. 5/1249-D "Providing the Right to Use the "SAP" Software and Rendering Services on Maintenance of the "SAP" Software" dated 05.12.2011 as per the protocol of disagreements concluded with JSC "Atomenergoprom". 2. Subsequent approval of the interested party transaction – contract No. 5/1249-D "Providing the Right to Use the "SAP" Software and Rendering Services on Maintenance of the "SAP" Software" dated 05.12.2011 as per the protocol of disagreements concluded with JSC "Atomenergoprom"
4.	07.03.2012	66	1. Determination of the price of services in the interested party transaction – paid service contract No. 1/1944-D on "Issuing Safety Report for Research Nuclear Facilities of ROSATOM" dated 15.11.2011 concluded with ROSATOM. 2. Subsequent approval of the interested party transaction – paid service contract No. 1/1944-D on "Issuing Safety Report for Research Nuclear Facilities of ROSATOM" dated 15.11.2011 concluded with ROSATOM. 3. Determination of the price of services in the interested party transaction – contract No. 2208-D on providing gratuitous (target) financing dated 01.12.2011 concluded with ROSATOM. 4. Subsequent approval of the interested party transaction – contract No. 2208-D on providing gratuitous (target) financing dated 01.12.2011 concluded with ROSATOM
5.	14.03.2012	67	1. Approval of the Regulations for Purchases in JSC "SSC RIAR". 2. Approval of the terms and conditions of the additional agreement to contract No. 20 "Concerning Delegation of Power of the Sole Executive Body of JSC «SSC RIAR»" to the managing company – JSC "Science and Innovations" dated 02.12.2011
6.	29.03.2012	68	1. Determination of the price of services in the interested party transaction – the Sublicense contract signed with JSC "Atomenergoprom". 2. Approval of the interested party transaction – the Sublicense contract signed with JSC "Atomenergoprom"
7.	09.04.2012	69	1. Determination of the price of placement of additional shares. 2. Calling of a special general shareholders meeting of the company, approval of its agenda, definition of a date to draw up a list of persons having the right to participate in the general shareholders meeting, and solution of other issues related to preparation and holding the general shareholders meeting of the company. 3. Proposal to the special general shareholders meeting of JSC "SSC RIAR" to make a decision on an item included into the agenda of the special general shareholders meeting of JSC "SSC RIAR", and a draft of the decision made
8.	20.04.2012	70	Approval of the transaction on at-a-charge transfer of non-residential premises in the labor union committee building into temporary possession and use to the Department of Federal Security Service of the Russian Federation in Ulyanovsk region
9.	25.04.2012	71	Approval of the terms and conditions of the additional agreement No.2 to contract No. 20 "Concerning Delegation of Power of the Sole Executive Body of JSC "SSC RIAR" to the managing company – JSC "Science and Innovations" dated 02.12.2011

No.	Date	Protocol No.	Agenda
10.	11.05.2012	72	1. Determination of the price of service in the interested party transaction –contract No. 1/2115-D on target financing from the special reserve fund of ROSATOM dated 24.11.2011 concluded with ROSATOM. 2. Subsequent approval of the interested party transaction – contract No. 1/2115-D on target financing from the special reserve of ROSATOM dated 24.11.2011 concluded with ROSATOM
11.	12.05.2012	73	1. Approval of the transaction on at-a-charge transfer of non-residential premises in the labor union committee building into temporary possession and use to the Center of Special Communication and Information of the Federal Security Service of the Russian Federation in Ulyanovsk region. 2. Approval of the transaction on acquisition by JSC "SSC RIAR" of the land plots being in federal property under the real estate units belonging to JSC "SSC RIAR" on the property right from the Local Office of the Federal Agency for State Property Management in Ulyanovsk region
12.	23.05.2012	74	1. Determination of the price of services in the interested party transaction – contract No. 1/2220-D on target financing from the special reserve fund of ROSATOM dated 19.12.2011 concluded with ROSATOM. 2. Subsequent approval of the interested party transaction – contract No. 1/2220-D on target financing from the special reserve of ROSATOM dated 19.12.2011 concluded with ROSATOM. 3. Adoption of changes in the contract with JSC "SSC RIAR" registrar – JSC "R.O.S.T Registrar"
13.	01.06.2012	75	1. Preliminary approval of the annual report of JSC "SSC RIAR" for 2011. 2. Preliminary approval of the annual accounting reports, including the profit and loss report (profit and loss accounts) of JSC "SSC RIAR". 3. Recommendations to the annual general shareholders meeting on distribution of profits, including payment (announcement) of dividends, and losses of JSC "SSC RIAR" by the results of 2011. 4. Determination of the amount of fee to the auditor of JSC "SSC RIAR" for auditing financial (accounting) statements by the results of 2012. 5. Calling of the annual general shareholders meeting of the company, approval of its agenda, definition of a date to draw up a list of the persons having the right to participate in the general shareholders meeting, and solution of other issues related to preparation and holding the annual general shareholders meeting of the company
14.	07.06.2012	76	1. Determination of the price of service in the interested party transaction –the government contract on the performance of the development work "Developments for justification of the BOR-60 reactor technical upgrading" concluded with ROSATOM operating on behalf of the Russian Federation. 2. Approval of the interested party transaction approval – the government contract on the performance of the development work "Developments for justification of the BOR-60 technical upgrading" concluded with ROSATOM operating on behalf of the Russian Federation
15.	01.08.2012	77	1. Election of the chairman of the Board of Directors of JSC "SSC RIAR". 2. Determination of the price of services in the interested party transaction – contract No. 1/2571-D on target financing from the special reserve fund of ROSATOM for implementation of the project "Improvement of Physical Protection System of the Company" dated 06.04.2012 concluded with ROSATOM. 3. Approval of the interested party transaction – contract No. 1/2571-D on target financing from the special reserve fund of ROSATOM for implementation of the project "Improvement of Physical Protection System of the Company" dated 06.04.2012 concluded with ROSATOM. 4. Determination of the price of services in the interested party transaction – contract No. 1/2634-D on target financing from the special reserve fund of ROSATOM dated 06.04.2012 concluded with ROSATOM. 5. Subsequent approval of the interested party transaction – contract No. 1/2634-D on target financing from the special reserve fund of ROSATOM dated 06.04.2012 concluded with ROSATOM. 6. Determination of the price of services in the interested party transaction – additional agreement to agency contract No. 10.4-10/150 dated 12.04.2010 signed with JSC "Atomenergoprom". 7. Approval of the interested party transaction – additional agreement to agency contract No. 10.4-10/150 dated 12.04.2010 concluded with JSC "Atomenergoprom"

No.	Date	Protocol No.	Agenda
16.	09.08.2012	78	Approval of the transaction on at-a-charge transfer of real estate into temporary possession and use
17.	10.08.2012	79	1. Determination of the price of placement of additional shares. 2. Calling of a special general shareholders meeting of the company, approval of its agenda, definition of a date to draw up a list of the persons having the right to participate in the general shareholders meeting, and solution of other issues connected with preparation and holding the general shareholders meeting of the company. 3. Proposal to the special general shareholders meeting of JSC "SSC RIAR" to make a decision on an item included into the agenda of the special general shareholders meeting of JSC "SSC RIAR", and a draft of the decision made
18.	15.08.2012	80	1. Approval of the conclusion by JSC "SSC RIAR" of the contract of gratuitous transfer of real estate unit "Child Daycare Center No. 3 for 135 kids" with the land plot in property of municipal district "Town of Dimitrovgrad". 2. Approval of the conclusion by JSC "SSC RIAR" of the contract of gratuitous transfer real estate unit "Office building" (earlier Child Daycare Center No. 7 for 185 kids) with the land plot in property of municipal district "Town of Dimitrovgrad"
19.	04.09.2012	81	1. Approval of the terms and conditions of the additional agreement to contract No. 20 "Concerning Delegation of Power of the Sole Executive Body of JSC "SSC RIAR" to the managing company – JSC "Science and Innovations" dated 02.12.2011. 2. Calling of a special general shareholders meeting of the company, approval of its agenda, definition of a date to draw up a list of the persons having the right to participate in the general shareholders meeting, and solution of other issues related to preparation and holding the general shareholders meeting of JSC "SSC RIAR". 3. Proposal to the special general shareholders meeting of JSC "SSC RIAR" to make a decision on an item included into the agenda of the special general shareholders meeting of JSC "SSC RIAR", and a draft of the decision made
20.	13.09.2012	82	Adoption of the budget for 2012 and planned indicators of financial and economic activity of JSC "SSC RIAR"
21.	19.09.2012	83	Approval of the decision on additional issue of securities of the JSC "State Scientific Center – Research Institute of Atomic Reactors"
22.	17.10.2012	84	Approval of the conclusion by JSC "SSC RIAR" of the contract of gratuitous transfer of the real estate unit with the land plot to the property of municipal district "Town of Dimitrovgrad"
23.	02.11.2012	85	1. Approval of the transaction on transfer of real estate units belonging to JSC "SSC RIAR" at a public sale. 2. Approval of the transaction on transfer of real estate units belonging to JSC "SSC RIAR" at a public sale

No.	Date	Protocol No.	Agenda
24.	06.11.2012	86	1. Calling of the special general shareholders meeting of JSC "SSC RIAR", approval of its agenda, definition of a date to draw up a list of the persons having the right. to participate in the general shareholders meeting, and solution of other issues connected with preparation and holding the general shareholders meeting of JSC "SSC RIAR". 2. Proposal to the special general shareholders meeting of JSC "SSC RIAR" to make a decision on an item included into the agenda of the special general shareholders. meeting of JSC "SSC RIAR", and a draft of the decision made
25.	09.11.2012	87	Approval of the transaction on transfer of real estate units belonging to JSC "SSC RIAR" at a public sale
26.	14.11.2012	88	Approval of the transaction (prior to its making) the subject of which is the work costing more than ten percent of the balance cost of the assets of the company determined on the basis of its accounting report data by the last reporting date – the contract on carrying out research work for "TerraPower, LLC"
27.	19.11.2012	89	Approval of the transaction connected with the transfer of the real estate unit belonging to JSC "SSC RIAR" at a public sale
28.	23.11.2012	90	1. Approval of the transaction (prior to its making) the subject of which is the work costing more than ten percent of the balance cost of the assets of the company determined on the basis of its accounting report data by the last reporting date - contract on the purchase and sale of shares with JSC "Atomenergoprom". 2. Approval of the transaction on the transfer of real estate units belonging to JSC "SSC RIAR" at a public sale
29.	07.12.2012	91	Participation of JSC "SSC RIAR" in "RIAR – GENERATION" Limited Liability Company

6.7.

CODE OF CORPORATE CONDUCT ADHERENCE*

No	Provision of the Code of Corporate Conduct	Observed or not observed	Comment
	General shareholders meeting		
1.	The shareholders should be notified about holding the general shareholders meeting not less than 30 days prior to the date of its holding irrespective of the items included into its agenda, if another term isn't provided by the legislation	Yes	Notification of the shareholders about holding the general shareholders meeting is done within the period specified by the Federal Law No. 208-FZ "Concerning Joint Stock Companies" dated December 26, 1995
2.	Opportunity of the shareholders to get acquainted with a list of the persons having the right to participate in the general shareholders meeting, starting from the day of notification on holding the general shareholders meeting and until closure of the attendee general shareholders meeting, and in case of the absentee general shareholders meeting – until an expiration date of reception of voting bulletins	Yes	
3.	Opportunity of the shareholders to get acquainted with the information (materials) subject to submission during preparation for holding the general shareholders meeting by electronic means of communication, including Internet	Yes	
4.	Opportunity of the shareholders to include an item into the agenda of the general shareholders meeting or to demand calling of the general shareholders meetings without submission of an extract from the register of the shareholders if the account of its rights to shares is carried out in the system of maintaining the register of shareholders and in case its rights to shares are accounted on the depot account – sufficiency of an extract from the depot account for fulfillment of the above rights	Yes	
5.	Availability in the Charter or internal documents of the company of the requirement for obligatory presence of the Director General, members of the Board of Directors, audit commission and auditor of the company at the general shareholders meeting	No	
6.	Obligatory presence of candidates during consideration at the general shareholders meeting of the issues on election of the members of the Board of Directors, Director General, members of the audit commission, as well as approval of the auditor of the company	No	
7.	Availability of procedures for registration of participants of the general shareholders meeting in the internal documents of the company	No	
	Board of Directors		
8.	Availability in the Charter of the company of the power of the Board of Directors to annually approve the financial and economic plan of the company	Yes	Charter of JSC "SSC RIAR", i. 13.2.32
9.	Availability in the company of the risk management procedure approved by the Board of Directors	No	
10.	Availability in the Charter of the company of the right of the Board of Directors to make a decision on suspension of the power of the Director General appointed by the general shareholders meeting	No	

* Data on adherence to the Code of Corporate Conduct are provided according to requirements of the appendix to the Methodical Recommendations on the Structure and Form of Submission of Data on Observance of the Code of Corporate Conduct in Annual Reports of Joint Stock Companies approved by Order No. 03-849/r of the Federal Commission on Securities of Russia dated 30.04.2003.

No	Provision of the Code of Corporate Conduct	Observed or not observed	Comment
11.	Availability in the Charter of the company of the right of the Board of Directors to set requirements to qualification and amount of remuneration of the Director General, Board members, directors of the main structural divisions of the company	No	
12.	Availability in the Charter of the company of the right of the Board of Directors to approve terms and conditions of contracts with the Director General and Board members	Yes	Charter of JSC "SSC RIAR", i. 13.2.28, i. 14.7
13.	Availability in the Charter or internal documents of the company of the requirement that in approval of terms and conditions of contracts with the Director General (managing organization, manager) and the Board members, the voices of the members of the Board of Directors, being the Director General and Board members, aren't counted in votes counting	No	
14.	Availability in the Board of Directors of the company of no less than three independent directors meeting the requirements of the Code of Corporate Conduct	Yes	
15.	Absence in the Board of Directors of the company of the persons who were found guilty in committing the crime in the sphere of economic activities or crime against the government, interests of public service and service in local governments or to which administrative punishments for offenses in the field of business activities or in the field of finances, taxes, securities market were applied	Yes	
16.	Absence in the Board of Directors of the company of the persons being a participant, Director General (managing director), member of a managing body or employee of a legal entity competing with the company	Yes	
17.	Availability in the Charter of the company of the requirement for election of the Board of Directors by cumulative voting	No	
18.	Availability in the internal documents of the company of an obligation of the members of the Board of Directors to abstain from actions which will bring or are potentially capable to lead to a conflict between their interests and interests of the company, and in case of such conflict – obligations to disclose the information on this conflict to the Board of Directors	Yes	Regulations on the Board of Directors, i. 3.5
19.	Availability in the internal documents of the company of an obligation of the members of the Board of Directors to notify in writing the Board of Directors about an intention to make transactions with securities of the company the members of the Board of the Directors of which or its affiliated (dependent) companies they are, as well as to disclose the information on the transactions they made with such securities	No	
20.	Availability in the internal documents of the company of the requirement for holding meetings of the Board of Directors no less than once in six weeks	No	
21.	Holding meetings of the Board of Directors of the company within a year during which the annual report of the company is prepared, with a frequency no less than once in six weeks	Yes	
22.	Availability in the internal documents of the company of a procedure for holding meetings of the Board of Directors	Yes	Regulations on the Board of Directors, sections 7 and 8
23.	Availability in the internal documents of the company of a provision on the need for approval by the Board of Directors of transactions of the company for a sum of ten and more percent of the cost of assets of the company, except for the transactions made in the course of common economic activities	Yes	Charter of JSC "SSC RIAR", i. 13.2.18
24.	Availability in the internal documents of the company of the right of the members of the Board of Directors to receive from executive bodies and directors of the main structural divisions of the company the information necessary for implementation of the functions, as well as responsibility for failure to provide such information	Yes	Charter of JSC "SSC RIAR", i. 3.1 – 3.3

No	Provision of the Code of Corporate Conduct	Observed or not observed	Comment
25.	Availability of a committee of the Board of Directors on strategic planning or assignment of functions of this committee on another committee (except for the audit committee and personnel and compensation committee)	No	No committees are established
26.	Availability of a committee of the Board of Directors (audit committee) which recommends an auditor of the company to the Board of Directors and interacts with it and the audit commission of the company	No	No committees are established
27.	Availability of only independent and non-executive directors in the audit committee	–	Not applicable
28.	Management of the audit committee by an independent director	–	Not applicable
29.	Availability in the internal documents of the company of a right of access of all members of the audit committee to any documents and information of the company on condition of nondisclosure of confidential information by them	–	Not applicable
30.	Establishment of a committee of the Board of Directors (personnel and compensation committee) the function of which is to identify criteria for selection of candidates for the members of the Board of Directors and development of remuneration policy of the company	No	No committees are established
31.	Management of the personnel and compensation committee by an independent director	–	Not applicable
32.	Absence of officials from the company in the personnel and compensation committee	–	Not applicable
33.	Establishment of a risk committee of the Board of Directors or assignment of functions of this committee on another committee (except for the audit committee and personnel and compensation committee)	No	No committees are established
34.	Establishment of a committee of the Board of Directors on settlement of the corporate conflicts or assignment of functions of this committee on another committee (except for the audit committee and personnel and compensation committee)	No	No committees are established
35.	Absence of officials from the company in the committee on settlement of the corporate conflicts	–	Not applicable
36.	Management of the committee on settlement of the corporate conflicts by an independent director	–	Not applicable
37.	Availability of the internal documents of the company approved by the Board of Directors that provide a procedure for formation and work of the committees of the Board of Directors	No	
38.	Availability in the Charter of the company of a procedure for definition of quorum of the Board of Directors, allowing to provide obligatory participation of independent directors in the meetings of the Board of Directors	Yes	Charter of JSC "SSC RIAR", i. 13.5
	Executive bodies		
39.	Availability of a collegial executive body of the company	–	Not applicable
40.	Availability in the Charter or internal documents of the company of a provision for the need of approval by the Board of Directors of transactions with real estate, receiving credits by the company if the specified transactions don't belong to major transactions and their making doesn't belong to common economic activities of the company	–	Not applicable
41.	Availability in the internal documents of the company of a procedure for coordination of operations which are beyond the financial and economic plan of the company	No	
42.	Absence in the executive bodies of persons being a participant, Director General (managing director), member of a managing body or employee of a legal entity competing with the company	Yes	

No	Provision of the Code of Corporate Conduct	Observed or not observed	Comment
43.	Absence in the executive bodies of the company of persons who were found guilty of committing crimes in the sphere of economic activities or crimes against the government, interests of public service and service in local governments or which administrative punishments for offenses in the field of business activities or in the field of finance, taxes and fees, securities market were applied to. If functions of the sole executive body are carried out by a managing organization or managing director – compliance of the Director General and board members of a managing organization or managing director with the requirements imposed on the Director General and board members of the company	Yes	
44.	Availability in the Charter or internal documents of the company of a prohibition for a managing company (managing director) to execute similar functions in a competing company, as well as to be in any other property relations with the company beside rendering services of a managing company (managing director)	No	
45.	Availability in the internal documents of the company of an obligation of executive bodies to abstain from actions which will bring or are potentially capable to lead to a conflict between their interests and interests of the company, and in case of such conflict – obligations to inform the Board of Directors about it	No	
46.	Availability in the Charter or internal documents of the company of criteria for selection of a managing company (managing director)	No	
47.	Submission by the company's executive bodies of monthly reports of their work to the Board of Directors	No	
48.	Establishment of a responsibility for violation of regulations on the use of confidential and office information in the contracts signed by the company with the Director General (managing company, managing director) and board members	Yes	
	Secretary of the company		
49.	Availability in the company of a special official (the secretary of the company) whose task is to ensure observance by the bodies and officials of the company of the procedural requirements that guarantees realization of the rights and legitimate interests of the shareholders of the company	Yes	
50.	Availability in the Charter or internal documents of the company of a procedure for appointment (election) of a secretary of the company and obligations of a secretary of the company	Yes	Regulations on the Board of Directors, i. 4.2
51.	Availability in the Charter of the company of requirements to a candidate for a secretary of the company	Yes	Regulations on the Board of Directors, i. 4.7
	Significant corporate actions		
52.	Availability in the Charter or internal documents of the company of the requirement for approval of a major transaction before its making	Yes	Charter of JSC "SSC RIAR", i. 12.1.14, i. 13.2.15
53.	Obligatory involvement of an independent appraiser for assessment of the market cost of the property being a subject of a major transaction	Yes	
54.	Availability in the Charter of the company of a ban on taking any actions on protection of interests of the executive bodies (members of these bodies) and members of the Board of Directors of the company at acquisition of a major block of shares of the company (takeover), as well as actions worsening a position of shareholders in comparison with the existing one (particularly, before termination of an estimated term of the acquisition of shares, a ban on the Board of Directors decision making on the issue of additional shares, securities converted into shares or securities providing the right of acquisition of shares of the company even if the right of making such decision is provided by the Charter)	No	

No	Provision of the Code of Corporate Conduct	Observed or not observed	Comment
55.	Availability in the Charter of the company of the requirement for mandatory attraction of an independent appraiser for assessment of a current market cost of shares and possible changes of their market cost as a result of a takeover	No	
56.	Absence in the Charter of the company of a release of the purchaser from a duty to suggest shareholders to sell common shares of the company belonging to them (the issue of securities convertible into common shares) in case of a takeover	Yes	
57.	Availability in the Charter or internal documents of the company of the requirement for mandatory attraction of an independent appraiser for definition of a ratio of converting shares in case of reorganization	No	A required list is specified by the current legislature
	Information disclosure		
58.	Availability of the internal document approved by the Board of Directors and identifying the rules and approaches of the company to the information disclosure (regulations on the information policy)	Yes	Regulations on obligatory information disclosure by JSC "SSC RIAR"
59.	Availability in the internal documents of the company of the requirement for disclosure of the information on the objectives of the placement of shares, persons who are going to get the placed shares, including a major block of shares, as well as whether high officials of the company will participate in purchasing the placed shares of the company	No	
60.	Availability in the internal documents of the company of a list of data, documents and materials to be submitted to the shareholders to solve the issues raised at the general shareholders meeting	No	A required list is specified by the current legislature
61.	Availability of an internet web-site of the company and regular disclosure of the information about the company on this web-site	Yes	
62.	Availability in the internal documents of the company of the requirement for disclosure of the information on transactions of the company with the persons that, according to the Charter, refer to the high officials of the company, as well as on the transactions of the company with the organizations in which the high officials of the company directly or indirectly have twenty and more percent of the authorized capital of the company or on which such persons can otherwise render essential influence	No	
63.	Availability in the internal documents of the company of the requirement for disclosure of the information on all transactions which can influence a market cost of the company shares	No	
64.	Availability of the internal document approved by the Board of Directors on the use of essential information on the activities of the company, shares and other securities of the company and transactions with them which is not open and disclosure of which can render essential influence on a market cost of shares and other securities of the company	No	
	Monitoring of financial and economic activities		
65.	Availability of the internal control procedures approved by the Board of Directors for financial and economic activities of the company	No	
66.	Availability of a special department of the company providing observance of the internal control procedures (auditing service)	Yes	
67.	Availability in the internal documents of the company of the requirement for identification by the Board of Directors of the structure of the auditing service of the company	Yes	

No	Provision of the Code of Corporate Conduct	Observed or not observed	Comment
68.	Absence in the auditing service structure of the persons admitted guilty for fulfillment of crimes in the area of economic activities or crimes against the government, interests of public service and service in local government institutions or to whom administrative punishments for offences in the field of entrepreneurial business or in the field of finance, taxes and tax collections, securities market were applied	Yes	
69.	Absence in the auditing service structure of the persons who are members of the executive bodies of the company, as well as the persons who are participants, Director General (managing director), members of the managing bodies or employees of a legal entity competing with the company	Yes	
70.	Availability in the internal documents of the company of a deadline for submission to the auditing service of documents and materials for assessment of the performed financial and economic operations, as well as responsibility of officials and employees of the company for their non-submission by a specified deadline	No	
71.	Availability in the internal documents of the company of an obligation of the auditing service to inform on the revealed infringements to the Audit Committee and in case of its absence – to the Board of Directors of the company	Yes	
72.	Availability in the Charter of the company of the requirement for a tentative estimation by the auditing service of reasonability to fulfill the operations not stipulated by the financial and economic plan of the company (non-standard operations)	No	
73.	Availability in the internal documents of the company of the procedure for coordination of a non-standard operation with the Board of Directors	No	
74.	Availability of the internal document approved by the Board of Directors defining the procedure for carrying out checks of financial and economic activities of the company by an audit commission	Yes	Regulations on the audit commission
75.	Assessment by the Audit Committee of the auditor conclusion prior to its submission to the shareholders at the general shareholders meeting	No	No audit committee
	Dividends		
76.	Availability of the approved by the Board of Directors internal document which is a guide for the Board of Directors in their acceptance of recommendations about the amount of dividends (regulations on dividends policy)	No	
77.	Availability in the regulations on dividends policy of a procedure for definition of a minimal fraction of a net profit of the company directed on the payment of dividends and conditions under which dividends on preference shares are not paid at all or not paid partially, the amount of dividends specified in the Charter of the company	No	
78.	Publication of the information about the dividends policy of the company and changes to it in a periodical edition provided for by the Charter of the company for publication of information on carrying out the general shareholders meetings, as well as placement of the specified information on a web-site of the company in the Internet	No	

6.8.
GLOSSARY

Absorbing element – a) an assembling unit of a reactor that have a strong sealed cladding, usually in the form of a cylinder or ball, and an absorbing material embedded into it to control the reactor reactivity; b) a key construction part of a shim rod that contains absorbing material.

A-group personnel – contains persons working with man-caused emission sources and getting an average annual effective emission dose of 2.3 mSv/year.

Becquerel (Bq) – the SI-derived unit of radioactivity. One Bq is defined as the activity of a quantity of radioactive material in which one nucleus decays per second.

B-group personnel – contains persons working at a radiation object or within its sanitary-protective territory and being under the effect of man-caused emission sources and getting an average annual effective emission dose of 0.8 mSv/year.

Closed nuclear fuel cycle – a nuclear fuel cycle, in which spent nuclear fuel is reprocessed to recover uranium and plutonium to refabricate nuclear fuel.

Depleted uranium – Uranium containing a lesser mass percentage of uranium-235 than in natural uranium.

Discharge of radioactive substances – controlled discharge of radionuclides to tanks with liquid radwaste at a nuclear facility.

Discharge of radioactive substances – planned and controlled release of (usually gaseous or liquid) radioactive material to the environment as a result of a nuclear facility operation (e.g. NPP).

Enrichment – a) is a content of atoms of a specific isotope in a mixture of isotopes of the same element if it increases the fraction of this isotope in a mixture; occurs in nature (expressed in percentage); b) process resulting in the increase of a specific isotope in a mixture of isotopes.

Fast neutrons – neutrons produced by nuclear fission that have lost little energy by collision; neutrons with a kinetic energy in excess of 0.1 MeV.

Fuel assembly – a set of fuel elements (rods, rodlets, plates, etc.) fixed together by a spacer grid and other components that are non-dismountable during the transportation and irradiation in a reactor. Fuel elements are inserted in the nuclear reactor core.

Fuel element – the most important structural unit of a reactor or fuel assembly containing nuclear fuel and/or breeding material and located either in the reactor core or breeding zone to produce thermal energy and transfer it to coolant.

Fuel pellet – a pellet made from compacted uranium dioxide, the essence of nuclear fuel and located inside a fuel element.

Global Reporting Initiative, GRI – produces one of the world's most prevalent standards for sustainability reporting - also known as ecological footprint reporting, Environmental Social Governance (ESG) reporting, Triple Bottom Line (TBL) reporting, Corporate Social Responsibility (CSR) reporting. Sustainability reporting is a form of value reporting where an organization publicly communicates their economic, environmental, and social performance.

IAEA Safeguards – a system of inspection and verification of the peaceful uses of nuclear materials as part of the Nuclear Non-Proliferation Treaty (NPT), supervised by the International Atomic Energy Agency.

International Standard Book Number (ISBN) – a unique numeric commercial book identifier based upon the 9-digit Standard Book Numbering (SBN) code created or the booksellers and stationers. The 10-digit ISBN format was developed by the International Organization for Standardization (ISO) and was published in 1970 as international standard ISO 2108. ISO has appointed the International ISBN Agency as the registration authority for ISBN worldwide and the ISBN Standard is developed under the control of ISO Technical Committee 46/Subcommittee 9 TC 46/SC 9. In Russia, it is the Central Institute of Bibliography. Along with the library-bibliography classification indices and universal decimal classification and author's number, ISBN is a part of a so-called publishing package mandatory for a book publishing.

MOX fuel – nuclear fuel that contains more than one oxide of fissile material, usually consisting of plutonium blended with natural uranium, reprocessed uranium, or depleted uranium. One attraction of MOX fuel is that it is a way of utilizing surplus weapons-grade plutonium, an alternative to storage of surplus plutonium, which would need to be secured against the risk

of theft for use in nuclear weapons. On the other hand, some studies warned that normalizing the global commercial use of MOX fuel and the associated expansion of nuclear reprocessing will increase, rather than reduce, the risk of nuclear proliferation, by encouraging increased separation of plutonium from spent fuel in the civil nuclear fuel cycle.

Natural background radiation – the ubiquitous ionizing radiation that people on the planet Earth are exposed to, including natural and artificial sources.

Non-Proliferation Treaty – an international treaty whose objective is to prevent the spread of nuclear weapons and weapons technology, to promote cooperation in the peaceful uses of nuclear energy and to further the goal of achieving nuclear disarmament and general and complete disarmament.

Nuclear fuel – fissionable nuclear material in the form of fabricated elements for loading into the reactor core of a civil nuclear power plant or research reactor.

Nuclear fuel cycle – comprises all operations associated with the production of nuclear energy, starting from mining of uranium and finishing with radwaste disposal.

Nuclear power engineering – concerned with the application of nuclear energy for heat and electricity supply proposes.

Nuclear safety – the achievement of proper operating conditions, prevention of accidents or mitigation of accident consequences, resulting in protection of workers, the public and the environment from undue radiation hazards.

Operator – any organization or person applying for authorization or authorized and/or responsible for nuclear, radiation, radioactive waste or transport safety when undertaking activities or in relation to any nuclear facilities or sources of ionizing radiation.

Physical startup – commissioning of an atomic energy object, including reactor fuelling, achievement of criticality and performance of physical experiments at a power, at which heat is removed due natural heat loss.

Power startup – commissioning of an atomic energy object, when it starts producing energy and its performance is checked at different power levels up to the designed one.

Radiation burden – the total of emission doses obtained or to be obtained in the course of operation, maintenance, repair, replacement or dismounting of nuclear facility equipment (e.g. NPP)

Radiation monitoring – involves the measurement of radiation dose or radionuclide contamination for reasons related to the assessment or control of exposure to radiation or radioactive substances, and the interpretation of the results.

Radiation safety – the science and practice of protecting people and the environment from the harmful effects of ionizing radiation. Radiation protection can be divided into occupational radiation protection, which is the protection of workers, medical radiation protection, which is the protection of patients, and public radiation protection, which is protection of individual members of the public, and of the population as a whole. The types of exposure, as well as government regulations and legal exposure limits are different for each of these groups, so they must be considered separately.

Radioactive waste – nuclear materials and radioactive substances for which no future is foreseen.

Reprocessing of radioactive waste – comprises process operations to change the aggregate state and/or physical and chemical properties of radioactive waste to convert them to conditions acceptable for transportation, storage and/or disposal.

Reprocessing of spent nuclear fuel – a set of chemical and technological processes to remove fission products from spent nuclear fuel and regenerate fissile material for re-use.

Research reactor – a nuclear reactor intended for generating data on physics and technology of reactors required to design and develop reactors of such type of their components.

Risk management - identification, assessment, and prioritization of risks followed by coordinated and economical application of resources to minimize, monitor, and control the probability and/or impact of unfortunate events or to maximize the realization of opportunities.

Safety of atomic energy use objects – a property of atomic energy use objects to provide radiation safety both under normal operation and in case of accident for the personnel, population and environment within the designed limits.

Sievert (Sv) – the SI unit for the amount of ionizing radiation required to produce the same biological effect as one rad of high-penetration x-rays, equivalent to a gray for x-rays.

Stakeholder – a person, group, organization, member or system who affects or can be affected by an organization's actions.

Uranium conversion – a chemical-technological process to convert uranium-containing materials into uranium hexafluoride.

Uranium hexafluoride – a chemical compound consisting of one atom of uranium combined with six atoms of fluorine. It is the chemical form of uranium that is used during the uranium enrichment process. Within a reasonable range of temperature and pressure, it can be a solid, liquid, or gas.

VVER – water-water energy reactor that uses water as coolant. The most common type of Russian NPPs has two modifications: VVER-440 and VVER-1000.

6.9.

LIST OF ABBREVIATIONS

ARSMS – automated radiation situation monitoring system.

BN – fast sodium-cooled reactor.

BREST OD-300 – inherently safe 300 MW fast reactor.

CFC – closed fuel cycle.

CIS – Commonwealth of Independent States.

FA – fuel assembly.

FB – federal budget.

FC – fuel cycle.

FMBA – Russia Federal Medical and Biological Agency.

FR – fast reactor.

FSUE – Federal State Unitary Enterprise.

FSUE "Mayak, PA" – Federal State Unitary Enterprise "Mayak Production Association".

FSUE "NIFhI" – Federal State Unitary Enterprise "L.Ya. Karpov Physical-Chemical Research Institute".

FSUE "RFNC VNIIEF" – Federal State Unitary Enterprise "Russian Federal Nuclear Center - All-Russian Research Institute of Experimental Physics"

FSUE "FC NRS" – Federal State Unitary Enterprise "Federal Center for Nuclear and Radiation Safety".

FSUE "RosRAO" – Federal State Unitary Enterprise "Russian RW Management Operator.

FSUE "SSC IPPE" – Federal State Unitary Enterprise "State Scientific Center of the Russian Federation – Institute for Physics and Power Engineering named after A.I. Leypunsky".

Glavgosexpertiza – RF State Expert Review.

GT-MHR – gas-turbine module helium reactor.

IAEA – International Atomic Energy Agency.

IDC – individual dosimetric control.

ISBN –International Standard Book Number.

ITER – international experimental fusion reactor.

JSC – Joint Stock Company.

JSC "«Rosenergoatom» Concern" – Joint Stock Company "The Russian Concern Manufacturing Electric and Thermal Energy at the Nuclear Plants".

JSC "Afrikantov OKBM" – Joint Stock Company "I.I. Afrikantov OKB for Mechanical Engineering".

JSC "Atomenergoprom" – Joint Stock Company "Nuclear Power Generation Complex".

JSC "ChMZ" – Joint Stock Company "Chepetsk Mechanical Plant".

JSC "EMI" – Joint Stock Company "Energomontage International".

JSC "Gidropress" – Joint Stock Company "Experimental and Design Organization «GIDROPRESS»".

JSC "IRM"– Joint Stock Company "Institute of Reactor Materials".

JSC "MSZ" – Joint Stock Company "Machine Building Plant".

JSC "NIITFA" – Joint Stock Company "Institute of Applied Physics and Automation".

JSC "NIKIET" – Joint Stock Company "N.A. Dollezhal Research and Development Institute of Power Engineering".

JSC "SNIIP" – Joint Stock Company "Specialized Scientific Research Institute for Instrumentation Engineering".

JSC "SSC RIAR" – Joint Stock Company "State Scientific Center – Research Institute of Atomic Reactors".

JSC "TVEL" – Joint Stock Company "TVEL".

JSC "V/O Isotope" – Joint Stock Company "All–Region Unit «Isotope»"

JSC "VNIINM" – Joint Stock Company "A.A. Bochvar Hi-Tech Research Institute of Non-Organic Materials".

JSC "VNIPIET" – Joint Stock Company "East-European Scientific Research and Design Institute for Energy Technology"

KASKO (from Spanish "*casco*" – *vessel, vessel carcass; helmet*) – insurance for motor vehicles from damage, theft and hi-jack.

KPI – key performance indicator.

LLC – Limited Liability Company.

LRW – liquid radioactive waste.

MBIR – multi-purpose fast reactor.

MEPhI – Moscow Engineering and Physics Institute.

MiPlaza (Microsystems Plaza) – a part of Philips Research.

MU 2.6.1.16-2000 – methodology instructions "Dosimetric Control of Professional Internal Radiation. General Requirements".

NASA – National Aeronautics and Space Administration

NFP "Sosny", LLC – Limited Liability Company "Sosny".

NPP – nuclear power plant.

NRB–99/2009 – Radiation Safety Norms (SanPiN 2.6.1.2523–09).

OGRN – Principle State Registration Number.

OSAGO – Civil Liability Motor-Vehicle Insurance.

OSPORB 99/2010 – Principal Sanitary Radiation Safety Rules.

PC – personal computer.

PRC – Poly-functional Radiochemical Complex.

PSR – Production System "ROSATOM".

QMS – Quality Management System.

R&D – research and development activities.

RAS – Russian Academy of Science.

RBMK – high-power channel-type reactor.

RF – Russian Federation.

RNF – research nuclear facility.

ROSATOM – State Nuclear Energy Corporation of the Russian Federation.

Roscosmos – Russian Federal Space Agency.

Rosnedra – Russia Federal Agency for Subsoil Usage.

Rostechnadzor – Russian Federal Service for Ecological, Technological and Nuclear Supervision.

RSC "Kurchatov Institute" – Research State Center "Kurchatov Institute".

RW – radioactive waste.

SanPiN – Sanitary Regulations and Standards.

SFA – spent fuel assembly.

SNF – spent nuclear fuel.

SRW – solid radioactive waste.

SVBR – lead-bismuth-cooled fast reactor.

TIN – taxpayer identification number.

UDC – Universal Digital Classification mandatory for the colophon.

US DOE – US Ministry of Energy

VVER – water-water energy reactor.

6.10.

TABLE OF THE GRI STANDARD REPORTING ELEMENTS, PERFORMANCE INDICATORS AND ROSATOM'S PUBLIC REPORTING INDICATORS

No	GRI performance indicator	Performance aspect in the ROSATOM system of public reporting indicators	ROSATOM's public reporting indicators
		Indicators of economic efficiency	
1	EC 1	10.1. Economic efficiency (Chapter 3 "Results of Key Activities", Section "Results of Financial and Economic Activities")	10.1.1. The created and distributed direct economic value, including income, operational expenses, payments to employees, donations and other investments to communities, retained earnings, payments to suppliers of the capital and to the states
2	–	2.1. Economic efficiency (Chapter 3 "Results of Key Activities", Section "Results of Financial and Economic Activities")	2.1.1. Financial efficiency. 2.1.2. Production capacity. 2.1.3. Financial stability
		Indicators of production efficiency	
3	–	2.3. Development of production capacities (Chapter 3 "Results of Key Activities", Section "Results of Financial and Economic Activities")	2.3.1. Investments to the core capital for the reporting period
4	–	5.1. Intellectual capital (Chapter "Sustainable Development Results", Section "Innovation Activities and Knowledge Management System")	5.1.1. Invention activities in the area of nuclear power use. 5.1.2. Efficiency of investments to R&D. 5.1.3. Intellectual property items
5	–	5.2. Support for development of innovative and technological potential (Chapter 3 "Results of Key Activities", Section "Results of Financial and Economic Activities")	5.2.1. Formation of infrastructure of research and engineering complex
6	–	5.4. Development of promising energy technologies (Chapter 3 "Results of Key Activities", Section "Results of Production Activities")	5.4.2. Closed fuel cycle. 5.4.3. Fast neutron reactors
7	–	5.5. Technological developments in related areas (Chapter 3 "Results of Key Activities", Section "Results of Production Activities")	5.5.2. Radiation technologies

No	GRI performance indicator	Performance aspect in the ROSATOM system of public reporting indicators	ROSATOM's public reporting indicators
		Indicators of ecological efficiency	
8	EN 30	11.1. Ecological impact management (Chapter "Sustainable Development Results", Section "Environmental Safety")	11.1.10. Total expenditures and investments to environmental protection (with a breakdown by types)
9	EN1	11.2. Use of materials, energy, water (Chapter "Sustainable Development Results", Section "Environmental Safety")	11.2.1 Used materials (with their mass or volume)
10	EN 2	11.1. Ecological impact management (Chapter "Sustainable Development Results", Section "Environmental Safety")	11.1.13.1. Materials representing reprocessed or re-used wastes
11	EN 3	11.2. Use of materials, energy, water (Chapter "Sustainable Development Results", Section "Environmental Safety")	11.2.2. Direct use of energy (with primary sources)
12	EN 4	11.2. 11.2. Use of materials, energy, water (Chapter "Sustainable Development Results", Section "Environmental Safety")	11.2.3. Indirect use of energy (with primary sources)
13	EN 11	11.2. Use of materials, energy, water (Chapter "Sustainable Development Results", Section "Environmental Safety")	11.2.6. Location and area of lands, being in property, rent, under control of the organization and located in protected natural territories and territories with a high value of a biodiversity out of their borders or adjacent to such territories
14	EN 16	11.3. Environmental impact (emissions, discharges and wastes), except for radiation impact (Chapter "Sustainable Development Results", Section "Environmental Safety")	11.3.5.1. Total direct and indirect emissions of greenhouse gases (with their mass)
15	EN 19	11.3. Environmental impact (emissions, discharges and wastes), except for radiation impact (Chapter "Sustainable Development Results", Section "Environmental Safety")	11.3.7.1. Emissions of ozone depleting substances (with their mass)
16	EN 22	11.3. Environmental impact (emissions, discharges and wastes), except for radiation impact (Chapter "Sustainable Development Results", Section "Environmental Safety")	11.3.10. Total mass of wastes in a breakdown by types and management method
17	EN 23	11.3. Environmental impact (emissions, discharges and wastes), except for radiation impact (Chapter "Sustainable Development Results", Section "Environmental Safety")	11.3.11 Total amount and volume of significant spills

No	GRI performance indicator	Performance aspect in the ROSATOM system of public reporting indicators	ROSATOM's public reporting indicators
18	–	11.3. Environmental impact (emissions, discharges and wastes), except for radiation impact (Chapter "Sustainable Development Results", Section "Environmental Safety")	11.3.15 Payments for emissions of pollutants from stationary and mobile sources to the atmosphere, discharges of pollutants to the surface and underground waters, disposal of production and consumption wastes
19	EN 28	11.4. Compliance with environmental laws (Chapter "Sustainable Development Results", Section "Environmental Safety")	11.4.1. Monetary value of considerable penalties and total number of non-financial sanctions inflicted for non-compliance with the ecological laws and regulations
		Social and labor relations (labor management and decent work)	
20	LA 1	12.1. Employment (Chapter "Sustainable Development Results", Section "Personnel Management and Social Policy")	12.1.1. Total number of manpower by employment pattern, employment contract and region
21	LA 2	12.1. Employment (Chapter "Sustainable Development Results", Section "Personnel Management and Social Policy")	12.1.2. Total number of employees and personnel turnover by age, sex and region
22	–	12.1. Employment (Chapter "Sustainable Development Results", Section "Personnel Management and Social Policy")	12.1.4. Number of specialists younger than 35 years old 12.1.5. Average age of employees (by categories). 12.1.8. Average salary in relation to an average level in the labor market
23	LA 13	12.1. Employment (Chapter "Sustainable Development Results", Section "Personnel Management and Social Policy")	12.1.3.1. Managing bodies and personnel of the company by their sex, age and other diversity indicators
24	LA 14	12.1. Employment (Chapter "Sustainable Development Results", Section "Personnel Management and Social Policy")	12.1.6. The ratio between basic salaries of men and women by employee categories
25	LA 4	12.2. Relations among employees and top managers (Chapter "Sustainable Development Results", Section "Personnel Management and Social Policy")	12.2.1. Number of employees involved in collective agreements. 12.2.3. The ratio between an average salary of 10 % of the least paid and 10 % of the most paid employees in the company
26	–	12.3. Social support for employees (Chapter "Sustainable Development Results", Section "Personnel Management and Social Policy")	12.3.4. Total expenditures for personnel. 12.3.5. Total expenditures for social programs. 12.3.6. Welfare payments per year for one employee
27	LA 7	12.4. Health and safety at workplace (Chapter "Sustainable Development Results", Section "Labor protection, radiation and industrial safety")	12.4.2. Levels of occupational injuries and occupational diseases, lost day rates, absence at a workplace, total number of fatal cases connected with work in a breakdown by regions
28	–	12.4. Health and safety at workplace (Chapter "Sustainable Development Results", Section "Labor protection, radiation and industrial safety")	12.4.5. Monitoring of a personnel dose rate. 12.4.6. Expenditures for personnel safety and health

No	GRI performance indicator	Performance aspect in the ROSATOM system of public reporting indicators	ROSATOM's public reporting indicators
		Development of personnel capital (training and education for implementation of strategic goals)	
29	LA 12 (доп.)	9.1. Provision with qualified competent personnel (Chapter "Sustainable Development Results", Section "Personnel Management and Social Policy")	9.1.2. Training of employees. 9.1.2.1. Number of employees assessed periodically for their efficiency and career development
30	LA 10	9.1. Provision with qualified competent personnel (Chapter "Sustainable Development Results", Section "Personnel Management and Social Policy")	9.1.2. Training of employeesю 9.1.2.2. Average number of training hours per one employee in a year in a breakdown by employee categories. 9.1.2.3. Expenditures for employees training
31	PR 1	14.3. Responsibility for products (Chapter "Sustainable Development Results", Section "Quality Management")	14.3.1. Life cycle stages at which an impact on health and safety of products and services is estimated for improvement, and a share of essential products and services subject to such procedures
32	PR 5	14.3. Responsibility for products (Chapter "Sustainable Development Results", Section "Quality Management")	14.3.5. The practices related to consumer satisfaction, including the results of research activities on the assessment of a degree of the consumer satisfaction
33	PR 9	14.3. Responsibility for products (Chapter "Sustainable Development Results", Section "Quality Management")	14.3.7.1. Monetary value of the essential penalties imposed for non-compliance with laws and regulations concerning provision and use of products and services

6.11.

FEEDBACK QUESTIONNAIRE

You opinion about the Public Annual Report of JSC "SSC RIAR" is very important for us. Please, fill in the questionnaire below.

1. What group of interested parties do you refer to?

- ☐ ROSATOM, JSC "Atomenergoprom"
- ☐ Partners (customers, suppliers, subcontractors)
- ☐ Personnel of JSC "SSC RIAR"
- ☐ Federal, regional and local authorities
- ☐ Regulatory bodies
- ☐ Educational Institutions
- ☐ Resident population
- ☐ Mass media

2. Did you find out anything new about JSC "SSC RIAR"?

- ☐ Yes
- ☐ No

Your comments _____

3. Could you get information you were interested in?

- ☐ Yes
- ☐ No

Your comments _____

4. What section was the most interesting for you?

Your comments _____

5. How satisfied or dissatisfied are you with the objectiveness and reliability of data presented in the Report?

- ☐ Very satisfied
- ☐ Satisfied
- ☐ Dissatisfied
- ☐ No opinion

6. How satisfied or dissatisfied are you with the Report exposition?

- ☐ Very satisfied
- ☐ Satisfied
- ☐ Dissatisfied
- ☐ No opinion

7. How satisfied or dissatisfied are you with the Report design?

- ☐ Very satisfied
- ☐ Satisfied
- ☐ Dissatisfied
- ☐ No opinion

8. How satisfied or dissatisfied are you with the Report significancy?

- ☐ Very satisfied
- ☐ Satisfied
- ☐ Dissatisfied
- ☐ No opinion

9. What do you find the most prominent advantage of the Report?

Your comments _____

10. What is the most prominent disadvantage of the Report ?

You comments _____

11. What information should the Report be added with?

Your comments _____

Please, send the filled questionnaire to:

- by post: 433510, Russian Federation, Ulyanovsk region, Dimitrovgrad-10;
- by fax: +7 (84-235) 3-58-59;
- by e-mail: niiar@niiar.ru

6.12.
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