

## 6.2. PRODUCTION ACTIVITIES (MANUFACTURED CAPITAL)

### 6.2.1. RESULTS OF PRODUCTION ACTIVITIES

Production activities are core activities of the Division's enterprises. As a whole, the responsibility for it is assigned to the Deputy CEO — Business Operations Director, V.P. Razin.

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Results of the production activities are primarily assessed based on the two KPIs: Fulfillment of contractual obligations and Completion of production plans (in 2013, the average figures for the Division amounted to 94% and 97.4% respectively). Based on the results of 2013, these KPIs have been met.

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### NUMBER OF COMPLETE PRODUCTS IN THE REPORTING PERIOD

Plant name	Produced/supplied equipment
Leningrad NPP-2, unit 1	SUZ-ShEM-3 drive, barboter, MCP components*, ECCS Accumulators
Leningrad NPP-2, unit 2	SHS, HPH
Belarusian NPP, unit 1	Core melt localization device
Rostov NPP, unit 3	Main circulating pump unit
Novovoronezh NPP-2, unit 1	Internal turbine piping and valves, high-pressure pipes, main circulating pump unit*, transport gate, fuel assembly rack, spent fuel pool racks, SHS* and HPH*
Novovoronezh NPP-2, unit 2	ECCS Accumulators, PCFS, MCP components*, SHS, HPH

\* Equipment was produced in 2012 but shipped in 2013

“ Over the past year, we managed to significantly improve the discipline of fulfillment of the contracts by enterprises, reduce excessive administration and strengthen cooperation within the Division. The priority at this stage is to continue the work to improve contracting and to control quality plans during production ”

Andrey Nikipelov,  
CEO of OJSC Atomenergomash

### 6.2.2. QUALITY AND SAFETY

Quality and safety are important system strategic indicators in using nuclear energy. The level of security is conditional on choosing to use this type of energy by the entire world community and the prospects of the nuclear power industry as a source for meeting the mankind's energy needs.



 EQUIPMENT PRODUCED IN 2013



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The growing security requirements for the nuclear facilities being built and operated impose special obligations on to all enterprises of the Division regarding product quality, where safety assessment becomes an integral element in the manufacturing of all kinds of products.

Product quality means the prestige of the Company and an increase in its profit and prosperity. Therefore, the work on quality management is an essential activity for all employees, from the heads to the responsible officers.

A prerequisite for achieving safety in the operation of nuclear facilities, energy and gas and petrochemical industry facilities, i.e. the consumer safety, is the quality control of the products being manufactured.

In its daily practice, the Company and its SASC are governed by the principles and requirements adopted in the international and national quality standards and the Quality Policy of Rosatom State Corporation approved by Order No.1/787-P dated of 08/28/2012 "On introduction of the Quality Policy of Rosatom State Nuclear Energy Corporation for use of nuclear energy for peaceful purposes".

The Company is a customer-focused company. In accordance with the Quality Policy of OJSC Atomenergomash approved by Order No.33/3976-P dated 11/18/2013 "On introduction of the quality management system documents of OJSC Atomenergomash", the priority area of the Company's activity is the ongoing improvement of quality of supplied products in order to guarantee compliance with all applicable and necessary regulations regarding nuclear, radiation and industrial safety.



All SASC which design and manufacture products in the field of nuclear energy utilization have developed quality assurance programs (hereinafter referred to as QAP) for their activities. In 2014, all SASC and the Company will have to review their QAPs in accordance with NP 090-11 "Requirements for quality assurance programs for nuclear facilities" and the requirements of general quality assurance programs in the field of nuclear energy utilization.



The QMS in following SASCs are ISO 9001 certified:

- CJSC ATM
- CJSC AEM Technologies
- OJSC ARAKO
- OJSC Venta
- OJSC VNIAM
- OJSC GSPI
- OJSC ZiO-Podolsk
- OJSC ZIOMAR EC
- OJSC IFTP
- OJSC OZTMiTS
- OJSC Afrikantov OKBM
- OJSC PZM
- OJSC SverdNIKhimmash
- OJSC SNIIP
- OJSC TsKBM
- OJSC TsNIITMASH
- OJSC OKB Hidropress
- LLC ALSTOM Atomenergomash

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- LLC NGSS
- LLC EMKO
- LLC STEP
- OJSC Energomashpetsstal

In addition, several SASC hold certificates of the Maritime Register, international certificates of ASME, API, certificates of approval issued by technical qualification societies, such as the American Bureau of Shipping, Germanischer Lloyd, Lloyd's Register, Det Norske Veritas, Bureau Veritas, RINA, and RMRS.

“ The goal that unites us is the Customer satisfaction and stability of the Company. The quality system covers all units of the enterprise involved in the production process. The confirmation of the high product quality at OJSC Energomashpetsstal are the certificates of approval issued by technical qualification societies. The certification is constantly expanded due to launching new products made of new grades of steel and increasing product range ”

Nina Nosenko,  
Deputy Executive Director for Quality  
at OJSC Energomashpetsstal

In 2013, OJSC Atomenergomash has also developed, implemented and certified a quality management system (QMS) for provision of services of packaged supply of power engineering products for nuclear facilities, energy and gas and petrochemical industry facilities, including design, development, manufacturing, contract supervision, contract commissioning, engineering and maintenance of equipment.

Compliance of the OJSC Atomenergomash QMS with the requirements of GOST ISO 9001-2011 (ISO 9001:2008) has been confirmed by the Certification Association Russian Register. The QMS of OJSC Atomenergomash takes into account the requirements of GOST ISO 9001-2011 (ISO 9001:2008) and NP 090-11 “Requirements for quality assurance programs for nuclear facilities”.

The Deputy CEO — Business Operations Director, V.P. Razin has been appointed the quality assurance representative.

The Company has adopted key performance indicators of quality, for example, Completeness in detecting quality defects.

Issues of nuclear and radiation safety are related only to OJSC OKB Hidropress and OJSC Afrikantov OKBM who conduct experimental activities in the field of nuclear energy utilization.

Results as of the end of 2013:

- The nuclear and radiation conditions met the requirements of regulatory documents regarding nuclear and radiation safety;
- There were no failures of systems and equipment operating in critical test facilities, no operating limits were exceeded;
- There were no incidents of personnel exposure to doses exceeding the test doses in 2013 or incidents during handling nuclear materials and sealed radioactive sources. There were no persons with individual radiation risk exceeding the standard level. Maximum individual radiation dose for personnel did not exceed 2 mSv.





In 2013, the following measures were implemented in the field of nuclear and radiation safety:

- OJSC OKB Hidropress made a decision to decommission its low pressure seven cassette test facility; work covering comprehensive engineering and radiation inspection of the test facility, and development of a program for decommissioning of the facility is under way;
- OJSC Afrikantov OKBM, preparing the project for modernization of the test facilities, began work to establish a system for structured monitoring of critical test facilities' engineering systems;
- OJSC OKB Hidropress implemented measures to transfer the RAW from the enterprise to FSUE Radon for a range of works covering transportation, processing, conditioning and temporary storage for further transfer to the National Operator;
- OJSC Afrikantov OKBM has prepared and submitted to the Central Committee for Consolidation and Conversion of Nuclear Materials of Rosatom State Corporation an expert opinion "On the presence of unneeded nuclear materials" upon review of which a decision was made to transfer these materials to FSUE NII NPO Luch. In addition, FSUE RosRAO received from OJSC Afrikantov OKBM two spent sealed radioactive sources for long-term storage.

### 6.2.3. OPTIMIZATION OF PRODUCTION PROCESSES

Implementation of Rosatom Production System (hereinafter referred to as RPS) which is an industry project with the objective to establish, using the best examples of the domestic and foreign experience, a universal system for managing the comprehensive optimization of production and administration processes at the enterprises of Rosatom State Corporation. RPS aims to improve performance of the industry's companies, including reduction of costs and increasing labor productivity to the level of the Russian and foreign competitors.

“ We regard the RPS primarily as an essential tool for increasing competitiveness and, ultimately, an ability to continuously improve our offer to the customer ”

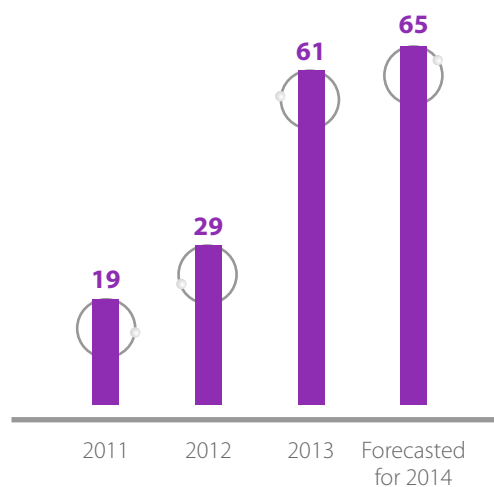
Andrey Nikipelov,  
CEO of OJSC Atomenergomash

For introduction of the RPS, the main regulatory documents are the Charter of the "Comprehensive optimization of production at nuclear industry enterprises" Project, RPS Guidelines developed by Rosatom State Corporation, Terms of Reference for Units, and Provisions on the Motivation developed by SASC.

Responsibility for implementation of the RPS at the enterprises is assigned to Chief Executive Officers, and to the Deputy CEO, Business Operations Director, V.P. Razin, at the Division.

Currently, the RPS is being implemented at 16 main enterprises of the Division.

### NUMBER OF RPS PROJECTS



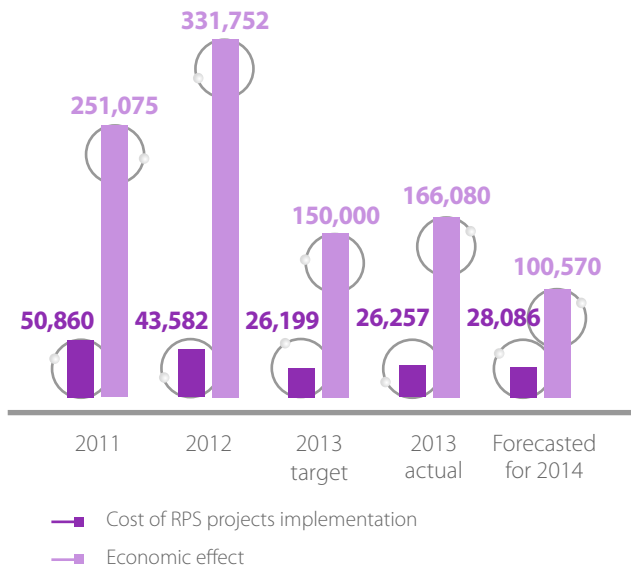
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### RPS COSTS AND ECONOMIC EFFECT FROM RPS, THOUSAND RUBLES

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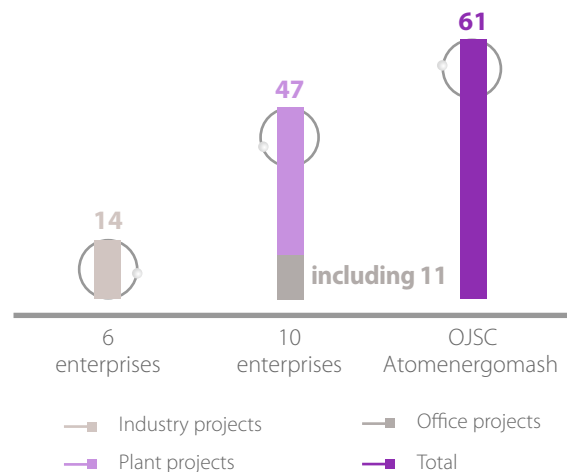


“ We followed the path of ongoing improvement before implementation of the RPS as well. We thoroughly studied the experience of Toyota’s production system; at the end of last year, OJSC Energomashspetsstal held a seminar participated by a Japanese expert; our specialists were trained in the Japanese Kaizen practice at Komatsu College. Nevertheless, it is the RPS that we highly rely on as both adapted and tested system today ”

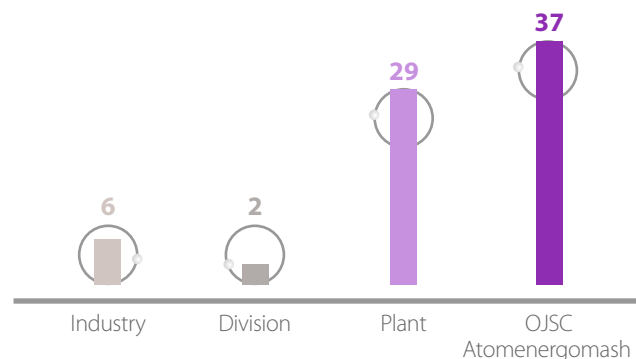
Vitaly Gnezditsky,  
Executive Director — First Deputy CEO  
of OJSC Energomashspetsstal

A part of the most cardinal transformations (that “are on the surface”: relocation of equipment, aligning of flows, establishment of sites operating based on the cycle time) were implemented in 2011–2012. This is why these had the largest economic effect. Since 2013, a totally new approach to implementation of the RPS projects is being introduced, with separating them into industry, divisional and plant projects. These projects are implemented on the most critical production and office processes and require deepening into the essence of the problem and detailed study of the improvements being made. At that, individual enterprises, for example, OJSC OKB Gidropress and OJSC Afrikantov OKBM demonstrate steady growth of the effect from RPS.

### PROJECTS OF 2013



### PROJECTS OF 2014 (1<sup>ST</sup> HALF OF THE YEAR)





A list of RPS projects for each SASC specifying target parameters for the new approach is drawn up for each half of the year. According to the results of 2013, the targets for industry and plant RPS projects have been achieved.

In order to achieve the goals of the RPS projects, the enterprises create working groups of employees of the enterprises responsible for achieving the goals. The working groups are trained in the RPS principles, methods and approaches (in 2013, 2361 employees were trained). Every employee has the opportunity to submit his/her proposal regarding improvement of efficiency of processes in the enterprise.

Performance efficiency in this aspect is assessed based on the KPIs "The level of the effect from RPS industry projects" and "Development of RPS leaders". In 2013, the goals for these indicators have been achieved.

In 2013, 9 RPS projects were focused on reducing the amount of incomplete production. As a result of the implementation, the reduction in amount of incomplete production in some areas was from 10 to 50%.

Key results of RPS in 2013:

- Duration of casings production for the control and protection system of solenoid stepper drive-3 at OJSC OKB Gidropress reduced by 22%;
- Equipment changeover time at OJSC Arako reduced by 71%;
- Deviations during welding of connections at OJSC PZM reduced by 75%;
- Duration of technical and commercial proposals preparation at OJSC ZIOMAR EC reduced by 57%.



1 EXAMPLES OF PROJECTS FOR 2014

2 POST REPORTING DATE EVENTS

In 2013, implementation of the measures within the Comprehensive Efficiency Improvement Program (hereinafter referred to as CEIP) aimed at improvement of competitiveness of the Division's enterprises was continued. The key objectives of the program are product specialization of the sites, increasing the revenue and capacity utilization, reduction of permanent expenses as well as meeting the deadlines of orders.

#### IMPLEMENTATION OF PLANS<sup>1</sup> IN RESPECT OF THE CEIP FOR 2013, AVERAGE FOR THE DIVISION

Indicator	%
Revenue	91.77
EBITDA	94.32
Optimization of personnel numbers	100.78
Reduction of occupied areas and premises	102.94
Income from optimization of asset and real estate complexes	110.69
Reduction of occupied land areas	106.25
Optimization of inventory	105.07
Growth of inventory turnover	87.44
Optimization of accounts receivable	120.67
Growth of accounts receivable turnover	111.31

<sup>1</sup> Inclusive of factors beyond control.

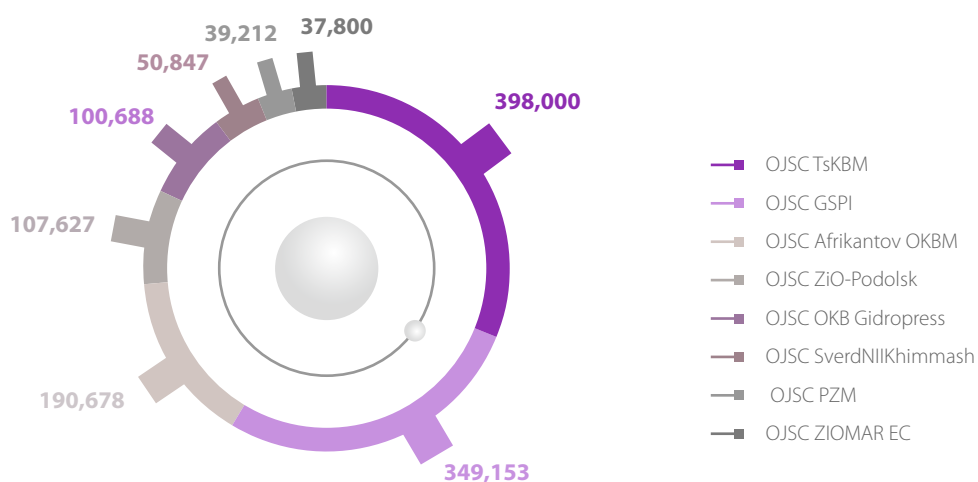
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## INCOME FROM RESTRUCTURING OF NON-CORE ASSETS



Company/facility	2012	2013	Forecast for 2014
<b>TOTAL</b>	<b>49,203</b>	<b>143,937</b>	<b>1,274,005</b>
OJSC TsKBM			398,000
OJSC GSPI			349,153
OJSC Afrikantov OKBM		39,841	190,678
OJSC ZiO-Podolsk			107,627
OJSC OKB Hidropress			100,688
OJSC SverdNIIKhim mash	48,898	101,290	50,847
OJSC PZM			39,212
OJSC ZIOMAR EC			37,800
OJSC VENTA		2,806	
ARAKO	305		

## INCOME FROM RESTRUCTURING OF NON-CORE ASSETS (FORECAST FOR 2014)



1 DELIVERED FACILITIES, THOUSAND RUBLES

2 POST REPORTING DATE EVENTS



#### 6.2.4. DESCRIPTION OF KEY STRATEGIC RISKS AND OPPORTUNITIES

№ <sup>1</sup>	Risk	Risk factors	Control measures/opportunities
6	Lack of competitiveness of the current products and technologies	<ul style="list-style-type: none"> <li>• Increased cost of products due to appreciation of production factors</li> <li>• Stricter requirements to parameters of the power equipment</li> </ul>	<ul style="list-style-type: none"> <li>• Comprehensive production modernization under approved projects</li> <li>• Implementing production efficiency improvement and reconfiguration programs</li> <li>• Expansion of RPS implementation</li> </ul>
11	Physical damage to the company's assets	<ul style="list-style-type: none"> <li>• Natural and industrial disasters</li> </ul>	<ul style="list-style-type: none"> <li>• Development of the industrial safety system</li> </ul>



<sup>1</sup> Hereinafter, means the position number in the Risk Map.