Our mission is to be a leader who develops machine building, metallurgy and power engineering of the world market by way of providing customers with reliable and top quality products that completely meet market requirements. This is a basis for long-term and steady growth of profitability at PJSC Energomashspetsstal.

Vitaliy Gnezditskiy, General Director of PJSC Energomashspetsstal

Strategic goals:

- Anticipation of customer’s demands
- Growth of profitability and efficiency of the enterprise
- Industry leadership
- Technological development
- Improvement of enterprise management system
Our power is in our history!

1962
The construction of the plant started

1970ies
The millionth ton of steel was melted

1980ies
The highest production indicators of the USSR’s times:
- steel – 204 th. tones
- casting – 29 th. tones
- forgings – 73 th. tones

1990ies
Fall in production economic indicators
Production equipment breakdown

2000 - 2010
New shareholders.
Equipment repair, stabilization of production
Start of plant renewal

2011 - 2018
Ingot of 415 t was cast
Development of parts production for reactor vessel under the project ВВЭР-ТОМ

Implementing the program for modernization and technical upgrading of all productions
JSC Atomenergomash joining
Main types of output products

**Power industry, Nuclear Power Station**
- Components for nuclear reactor
- Rotors, generators and bodies of steam turbines
- Rotors for wind mills
- Hydro shafts, bodies, blades, hubs of runners; cylinder bodies

**General machine building and oil-gas-and-chemical industry**
- Different types of cylinders
- Traverses
- Body casting
- housings
- Pinions and gear rings
- Crossbars, plugs

**Metallurgy**
- Backup rolls of hot and cold rolling
- Working rolls of hot rolling
- Rollers
- Spindles
- Slag ladles
- housings and main bases of mills
- Die holders

**Shipbuilding and semi-products**
- Propeller shafts
- Intermediate shafts
- Rudder spindles
- Stern shafts
- Propeller blades and hubs
- Components of electrical machines
- Forgings of round and rectangular section
- Ingots
PJSC Energomashspetsstal is an enterprise of **complete production cycle**: from steelmaking to machining.
Structure of Production

Electric-furnace steel-melting
- Charging materials
  - Melting in EAF
  - Refining of steel (LF) (VD)

Steel-melting
- Bottom pouring of ingot
  - Ingots with weight up to 500 t
- Pouring of ingot in vacuum chambers
  - Castings with weight up to 150 t

Press forging production
- Press-forging treatment
- Heat treatment

Machining production
- Machining of parts with weight up to 300 t
Complete production cycle by the example of shell of fitting pipe area for Belarus Nuclear Power Station

- Metallurgical production
- Forging
- Machining
- Heat treatment production
Arc-Furnace Melting Shop
Arc-Furnace Melting Shop

**Electric arc furnace (EAF-70)**
- Nominal capacity: 70 t
- Transformer: 52 MVA
- Reactor: 14.2 MVar
- Wall-type combined
- GOB (gas-oxygen burner): 3 pcs
- Door oxygen
  - Carbon manipulator: 1 pc
  - Carbon injectors: 3 pcs

**Ladle-furnace** is a complex for out-of-furnace refining
- Capacity: 100/130 t
  - 18 MVA, two-single-stream wire feeding machine
- Capacity: 100/130 t
  - 24 MVA, two-stream wire feeding machine

**Chamber ladle degassing unit (VD/VOD)**
- Capacity: VD/VOD - 100/130
  - Vacuum: less than 1 mbar;
  - two-stream wire feeding machine for supplying flux cored wire.

New high-performance EAF with capacity of 70 t enables to:
- Provide slagless output;
- Melt charging material in a power saving mode (long arcs);
- Make semi-finished product under foamed slag

Ladle-furnace complexes enable to:
- Obtain extra-low content of sulfuration of metal providing mass content of sulphur [S] not more than 0.005%;
- Process steel with inert gas to refine from gases and nonmetallic inclusions;
- Process steel with reagent powders;
- Heat liquid metal at the rate of 5 degrees/min.

Ladle degassing unit enables to:
- Perform vacuum degassing of steel with ensured obtaining of the following content of gases:
  - [N] ≤ 70 ppm; [H] ≤ 1 ppm; [O] ≤ 25 ppm
- Melt high-alloy stainless steel grades with mass content of carbon [C] ≤ 0.025% by method of alloyed scrap remelting.

**Shop capability:**
- Melting of low-, medium and high-alloy grades of steels according to native and foreign standards as well as Customer’s specifications;
- Manufacture of polygonal, round, rolled and hollow ingots with weight distribution up to 500 t;
- Guarantee of high requirements imposed to qualitative characteristics of products.
Steelmaking

Technical capabilities of Steelmaking:

- Castings are made of carbon and alloyed steel grades: 15 – 45Л, 08ГДНФЛ, 20ГСЛ, 35ХМЛ, 15Х1М1ФЛ, 06Х12НЗДЛ, etc., with ensured level of mechanical properties.
- Weight of castings is in the range from 5 to 180 t.
- Maximum overall dimensions of castings are 13m x 7.5m x 3.6m.
- Castings are tested with different types of examinations including non-destructive methods (MPI, DPI and UT Test).

Equipment:
- Continuous mixers of 10t/h and 60 t/h capacity (produced by IMF);
- Area for regeneration of burnt sand and separation of chromite sand (produced by IMF);
- Shot-blasting chamber (produced by Rosler);

Engineering:
- 3D designing of critical and intricate shape castings is performed in Solid Works with the following modeling of cast processes in MAGMASOFT.
Press-Forging Shop
Press-Forging Shop

15 000 tf automated forging complex
- 15000 tf press
- manipulator with 170t lifting capacity
- forging crane with 800 t lifting capacity

15 000 tf automated forging complex:
- 15000 tf press
- manipulator with 170t lifting capacity
- forging crane with 800 t lifting capacity

3150 tf automated forging complex
- 3150 tf press
- manipulator with 30t lifting capacity
- forging crane with 150t lifting capacity

Heating and heat-treating furnaces:
There are 14 heating furnaces.

There are 20 heat-treating bogie furnaces.

Quenching unit Rademacher
Tank volume is 150m3
Quenching medium is polymer/ water

Capabilities:
Press-forging capacities at PJSC EMSS allow manufacturing of forgings weighting up to 300 t from carbon, alloyed, corrosion resistant and heat resistant steels using ingots weighting up to 415 ton.
Heat-Treatment Shop

Fleet of heat-treating furnaces
- Bogie furnaces - 4 pcs.
  - 5.3 m x 11.5 m H=3.2 m - 3 pcs
  - 6 m x 8.5 m H=6.1 m - 1pc
- Pit furnaces - 6 pcs.
  - ø5.58 m H=4.6 m
- Vertical furnaces - 4 pcs.
  - ø2.3 m L=10.5 m

Site of differential heat treatment of mill rolls
- Includes:
  - Fast heating furnace (lifting capacity 75 t)
  - Spray quenching unit (lifting capacity up to 240 t)
  - Thermal bell-type furnaces
  - Lifting capacity: up to 130 t, max=960°C

Quenching tanks
- ø9 m H=10 m, quenching medium - water
- ø9 m H=10 m, quenching medium - bischofite
- ø6.8 m H=10 m, quenching medium - water
- ø6.8 m H=10 m, quenching medium - oil
- 5 m x 5 m x 9 m, quenching medium - water

Heat treatment production enables to:
- Perform preliminary and final heat treatment of blanks.
- Achieve results in regard to the level of mechanical properties which satisfy Customer's requirements owing to the following equipment:
- Site of differential heat treatment of mill rolls, Site of rotor vertical quenching and heat stability testing.

Site of rotor vertical quenching and heat stability testing
- Includes:
  - Site of rotor vertical quenching
  - Site of rotor heat stability testing
Machining Production

Has a wide fleet of modern metal-cutting machines: which enable to process parts of weight up to 300t and with 7th grade of accuracy. Total fleet of metal-cutting equipment contains more than 60 units.

<table>
<thead>
<tr>
<th>Turning lathes</th>
<th>Boring machines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turning lathes – 18 (including CNC lathes - 10)</td>
<td>Deep boring machines: 2</td>
</tr>
<tr>
<td>Enable to process parts having dia. up to 4000 mm and length of 20000 mm, weight up to 250 t with an accuracy up to 8th grade. Enable to obtain accuracy according to 7-8 grade and manufacture profiled surfaces having dia. up to 2800 mm, length up to 18000 mm and weight up to 300 t.</td>
<td>Horizontal boring machines: 12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Roll-turning machines</th>
<th>Boring and turning machines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roll-turning machines with CNC – 1</td>
<td>Boring and turning machines – 12 (including CNC machines - 5)</td>
</tr>
<tr>
<td>Herkules NWD 1500x18000CNC enables to process products with weight up to 300 t and maximum length of 18 000 mm.</td>
<td>Enable to process parts having dia. up to 8000 mm and height up to 6000 mm with maximum weight of the part 250 t.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Roll-grinding machines</th>
<th>Other machines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roll-grinding machine – 1</td>
<td>Honing machine – 1</td>
</tr>
<tr>
<td>Herkules UWS 600x90x8000CNC</td>
<td>Band saw machine – 8</td>
</tr>
<tr>
<td>Enables to process surfaces of rolls and of other parts with 6-7 grade of accuracy and with maximum dia. of 1600 mm and length of 8000 mm and with maximum weight of 90 t.</td>
<td>Enable to perform the following operations: honing, sawing, cutting shafts and plates up-to-size, sample taking.</td>
</tr>
</tbody>
</table>
Modernization of Production
Results of modernization in new capabilities

1. Increase in EAF production capacity
   - Melting duration up to **55 minutes**
   - Reduction of specific energy consumption

2. Technical capability for pouring large-tonnage ingots weighing up to **500 t** for work-pieces of reactors in nuclear power engineering, for large-tonnage rolls, other forgings and castings

3. Manufacture of stainless steel grades with very low content of \([C] \leq 0.03\%\) (in comparison with the achieved at present time - \([C] \leq 0.08\%\))

4. Capability to perform differential heat treatment, ensuring working layer of barrel up to **120 mm**.
   - Length of rolls reaches **11 m** and diameter reaches **2.4 m**

5. Capability to perform quenching in vertical position of turbine and generator rotors with the length up to **11 000 mm**
   - Assured obtaining of stable set of mechanical properties in a wide range

6. Capability to expand the nomenclature of casting in design complexity and accuracy

7. Machining of parts weighing up to **300 ton**
   - Capability to perform 5-axis machining of parts
   - Capability to perform finish machining of parts of nearly any complexity

8. Unique processing of holes with depth up to **18 m** inclusive
Modernization and technical upgrading

**Metallurgical production:**
- EAF -70
- Ladle-furnace unit
- Steel degassing unit
- Gas cleaning complex
- Regeneration system
- Shake-out grid

**Forging and heat-treatment production:**
- Modernization of Automated forging complex of 15000 t-f
- Construction of new heating furnaces
- Production of accessory for stamping out fitting pipes

**Machining production:**
- Milling-machining centers
- NC lathes
- Turning-and-boring lathes
- Roll turning lathe “Herkules”
- Roll grinder “Herkules”
- Horizontal boring machines
- Deep-boring machine “TACCHI”

- Increase of Arc Furnace Melting Shop efficiency up to 76 t per hour
- Melting duration up to 55 minutes
- Reduction of specific energy consumption up to 100 kWh/t of accepted production
- Manufacture of stainless steel grades with very low content of [C] ≤0.03%
- Capability to expand the nomenclature of casting in design complexity and accuracy using Solid Works and Magmasoft

- Technical capability for pouring large-tonnage ingots weighing up to 500 t for work-pieces of reactors in nuclear power engineering, for large-tonnage rolls, other forgings and castings
- Capability to perform differential heat treatment, ensuring working layer of barrel up to 120 mm.
- Length of rolls reaches 11 m and diameter reaches 2.4 m
- Capability to perform quenching in vertical position of turbine and generator rotors with the length up to 11 000 mm
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- Machining of parts weighing up to 300 ton
- Capability to perform 5-axis machining of parts
- Capability to perform finish machining of parts of nearly any complexity
- Unique processing of holes with depth up to 18 m inclusive
Products with the brand of EMSS

**Year 2012**
- 32,00% (Ukraine)
- 31,00%
- 12,00%
- 3,00%
- 60,7%*

**Year 2013**
- 46,43% (Russia and CIS)
- 23,93%
- 24,14%
- 20,00%
- 19,49%
- 69,7%*

**Year 2014**
- 45,31% (Non-CIS countries)
- 44,63%
- 23,93%
- 24,14%
- 4,46%
- 72,2%*

* % of production with deep machining

**Ukraine:**
- JSC "Turboatom"
- JSC "Electrotyazhmash"
- JSC "Arcelor Mittal"
- GP "Electrotyazhmash"
- JSC "Maryupil Metallurgical Combine named by Ilich"
- JSC "Azovstal"
- JSC "Plant Dnepropress"
- JSC "Zaporizhstal"
- CJSC "Azovmash"

**Russia and CIS:**
- JSC "Petrozavodskmash"
- CJSC "AEM-Technologies"
- SSC RF NPO "TSNIITMASH"
- LLC "Alstom Atometnorgomash"
- The branch of JSC "AEM-Technologies" "ATOMMASH", Volgodonsk
- JSC "Machine-Building Plant "ZIO-Podolsk"
- EDBM named by I.I. Afrikantov

**Non-CIS countries:**
- Siemens Energy Inc.
- Toshiba
- BHEL
- Alstom Hydro Co.
- General-Electric
- ThyssenKrupp Materials
- Shanghai Electric
- Rolls-Royce
- Man-Diesel
Equipment for Nuclear Island

Steam generator components
Shell of steam generator, collectors housings, tubes

Pressure compensator components
Shells of pressure compensator, necks, etc.

Components of main circulation pipeline
Pipes and elbow of main circulation pipeline (MCP)

Components of reactor housing
Shells of tubes of reactor vessel
Shells of reactor housing, bottom, tubes

Year 2008:
Production mastering of components of the main circulation pump, thrust bearing rings

Year 2009-2010:
Production mastering of housings of steam generators (shells and tubes), flanges of the top cover of the reactor vessel, main coolant pipe (pipes and elbows), parts of the steam generator collector

Year 2011-2012:
Production mastering of components of the reactor vessel shell, shell zone tubes, parts of thermal control protective tubes and partitions, bottom of the reactor housing

Years 2013-2018:
Production mastering of components of the reactor vessel under the project VVER-TOI

Components of main circulation pump
Housing of main circulation pump
Elbow of main circulation pump
Equipment for Turbine Island (Steam Turbine)

**Ukraine:**
- "Turbotom" housings, high and medium pressure rotors, shafts, discs for low pressure rotors
- GP "Electrotiazhmash": generator rotors

**Russia:**
- JSC "Siloviye Mashiny": Turbine rotors of high, medium and low pressure, impellers
- JSC "Kaluga Turbine Plant": medium pressure rotors
- LLC "NPO" Privod": generator rotors

**Non-CIS countries:**
- General Electric: generator rotors
- BHEL: medium and high pressure housings, rotors of high, medium and low pressure
- Alstom Switzerland: rotors of high, medium and low pressure
- Shanghai Electric: low-pressure rotors
- Siemens: generator rotors

**Timeline:**
- **Year 2010:** Mastering the production of rotors with heat stability testing. Product differentiation and provision of guaranteed quality, as well as the development of the whole product campaign.
- **Year 2011:** Production mastering of housings of high and medium pressure with machining. Production mastering of rotors with vertical quenching on spray type installation allowed to achieve improvement of quality during rotors heat treatment.
- **Year 2014:** Production mastering of equipment for low-speed turbine Arabelle of Alstom company. Turbine parts for nuclear power plants Akkuyu (Turkey).
PJSC “EMSS” produces equipment for wind turbines. The largest customers for wind turbines are the world-known concerns General Electric, Fuhrlander and etc.

Rotor shafts for wind turbines.

Wind power is an upcoming sector in the energy market.

International Energy Agency (IEA) predicts that in the absence of active measures in the field of energy saving the world energy demand will be increased 60% by year 2030.
Rolls Production

Forged mill rolls for various rolling mills - one of the main products of PJSC "EMSS". Our customers include such companies as: Arcelor Mittal, Thyssen Krupp, Voest Alpine, Laiwu Steel Group, Severstal, MMC, Metinvest, ISD.

Production capacities of Energomashspetsstal allow manufacturing rolls with weight up to 250 ton, with full technological cycle.

In year 2013, PJSC "EMSS" produced the largest backup roll with weight 226 ton.

Back-up rolls for plate mills

Back-up rolls for hot strip mills and cold rolling

Work rolls for crimping, profiled and sheet (roughing stands) hot-rolling mills.

Up to 10000 ton of mill rolls are annually produced by PJSC “EMSS”
Spare parts for metallurgical industry

Products for metallurgy slag pots, beds and mill shoes, anvils and die holders, spindles and couplings, chills.

- Forged and assembled spindles
- Solid forged anvil
- Forged and cast die holders
- Cast slag pots
  With volume from 11.0 up to 16.5 m³

In year 2013, the EMSS produced solid forged anvil from 415 ton ingot

Up to 150 pcs of slag pots are produced by Energomashspetsstal per year
Equipment for gas, oil and chemical industry and general machining

Products of PJSC "EMSS" for gas, oil and chemistry: castings and forgings as rough, so machined. These products are used in gas compressor stations and in the construction of pipelines, and represented by the following products: cylinders, covers, crosses, plugs, and other accessories.

Products for general engineering: shafts, hubs, gears, gear rims, end walls, fan shafts, gear shafts.

In year 2013 it was mastered production of new products for our Company - petrochemical shells.

6,77% of total products sales at the end of year 2013 were sales of products for gas, oil and chemical industry (in value terms).
PJSC "EMSS" produces workpieces for all types of vessels.

Our products for shipbuilding:
- Propeller shafts, intermediate shafts, rudder stocks, stern tube shafts, main shafts of stern tube device, blades and the propeller hubs, parts of electrical machines, as well as details of the nuclear power plant of nuclear icebreakers, case molding.

In year 2013, PJSC "EMSS" produced workpieces for nuclear power plant of icebreakers of type ПХ-60B, including parts of the reactor vessel.

- **Propeller blades, hubs, nacelles of stern bosses**
  - Diameter up to 10 000 mm,
  - Weight from 3 ton up to 100 ton

- **Propeller shafts, stern tube shafts, intermediate shafts**
  - Diameter from 300 mm up to 2000 mm,
  - Length up to 22000 mm;
  - Weight from 1 ton up to 150 ton

- **Case casting**
  - Supporters, stern posts, stems, mortars, steering devices
  - Weight from 1t up to 200 t
**Forgings with round cross-section**

With machining and without machining.

Used steel grades: structural, high-alloyed, stainless steel, tool steels

**Square / rectangular forgings**

With machining and without machining.

Used steel grades: structural, high-alloyed, stainless steel, tool steels

**Ingots from 3,0 t up to 415 t**

Round and polygonal ingots

Used steel grades: construction, high-alloyed, corrosion-resistant
Rosatom Production System
Rosatom Production System (RPS)

PJSC "EMSS" in year 2013 started the implementation of RPS. During this period the Company has implemented more than 40 projects aimed at improving efficiency and reducing losses in production, 207 suggestions were submitted for improvement and 146 of them were implemented. The economic effect from the implementation of projects and suggestions for improvement is more than 1 mln hrn. 126 technical workers and managers of various levels were trained in the basics of "Rosatom" production system.

The key objective of the RPS is improving the efficiency of the enterprises of industry. The system was developed based on the well-known experience of the Japanese company Toyota Production System and is based on system of "Kaizen" (continuous improvement of the system).

The philosophy of the production system
- First of all, think about the customer
- People - this is the most valuable asset
- Culture of continuous improvements
- All the attention to the production site

Tools of the production system
- System 5C
- Continuous improvement
- Production analysis
- Visualization;
- Standardized work;
- Value Stream Mapping

Reference: Rosatom Production System (RPS) is implemented into more than 90 enterprises of the State Corporation "Rosatom" in Russia, Ukraine and Hungary
Quality Strategy - program of continuous improvement as continuous process

Audit, process control or signal of the need of improvements

**Implementation**
Documenting the process (standardization) and verification of compliance

**Planning**
Actions are planned. This step includes an analysis of the actual state, information on potential improvements and the development of planning concepts

**Control**
Monitoring and results check

**Implementation**
Piloting, testing and optimization of the adopted concept by quickly implemented and simple tools
Quality Control and Central Plant Laboratory performs control of manufactured products using modern measuring techniques by highly-qualified specialists. Destructive and non-destructive inspection methods allow to fully evaluate the quality of products and detect the presence of internal and surface defects. It is certified staff of QCD and CPL, as well as all measurement and control procedures used during tests.

Quality Control and Non-destructive Control Departments perform the following process and acceptance control:
- Visual control
- Linear and angular measurements
- Hardness measurements on heat treated work pieces
- Visual control of axial bores by means of television system TCKT-30 (borescope)
- Residual stresses measurement
- Surface roughness control

Department of Non-destructive Control performs also control as follows:
- Ultrasonic control by manual and mechanized method
- Dye penetrant control
- Magnetic particle control of closed and open end axial bore
- Magnetic particle control of external surface
- Measurement of residual magnetizing
- Measurement of magnetic performances
Central Plant Laboratory

Non-destructive Testing Department

Mechanical Test Laboratory

X-ray Spectrum Analysis Laboratory

Metallographic Test Laboratory

Chemical Analysis Laboratory

Molding Materials Laboratory

Expert Researches Laboratory

Mechanical Test Laboratory performs the following tests:
- tensile
- impact bending
- hardness measurement
- bend test
- hardenability test
- shearing test
- gauging the level of residual stresses by a ring core
- definition of zero ductility temperature (NDTT)

Metallographic Test Laboratory performs the following inspections:
- non-metallic inclusions control
- grain size control
- macrostructure control
- corrosion tests
- microstructure control
- determination of ferrite phase content in stainless steels

Molding Materials Laboratory performs:
- determination of physical and mechanical and technological properties of molding compounds
- quality control of the raw materials for the molding mixture

X-ray Spectrum Analysis and Chemical Analysis Laboratories are determining the chemical composition of steel, ferro-alloys and Fe-Ni-based by methods:
- extraction-photometric
- gravimetric
- titrimetric
- potentiometric
- spectrophotometric
- photometric
- IR spectroscopy
- photoelectric method of spectral analysis
- reduction melting method
- heating method in an inert gas stream

Expert Researches Laboratory executes following studies and investigations:
- computer modeling with software QForm v8.0.5 of forging, stamping and heat treatment of products on the technology development stage
- laboratory simulation of large-scale models of the final heat treatment regimes with a view to optimizing
Quality Management System

The Quality Management System of PJSC "EMSS" was certified for accordance to ISO 9001 since year 2004. Compliance of management system with ISO 9001: 2008 was confirmed by the certification body TUV Thuringen e.V. registration number of the certificate TIC 15 100 107094 dd. 21.08.2013.

High level of production, as well as the quality of products with the brand PJSC "EMSS" is confirmed by:

Approval Certificates issued by classification and technical societies:
Russian Maritime Register of Shipping (RMRS), American Bureau of Shipping (ABS), Lloyd's Register, Germanischer Lloyd, Det Norske Veritas, RINA, Bureau Veritas, TUV Thuringen

Attestation Certificates of Laboratory of Industrial Sanitation and Nature Protection and Central Plant Laboratory issued by Ministry of Industrial Policy of Ukraine

Attestation Certificates of Quality Control Department and Central Plant Laboratory issued by the Main branch of Attestation Commission of Nuclear Power Objects of Ukraine (GIOAK), "Ministry of Energy and Coal Industry of Ukraine"

Letter of European Alliance about receiving preliminary registration of chemical substances in the regulations system REACH;
Letters from business customers TOSHIBA, GE, ABB, Alstom about passing supplier qualification

Full list of testimonials, diplomas, certificates and licenses of technical classification societies and letters of business customers:
http://emss.ua/o-kompanii/kachestvo/sistema-kontrolya-kachestva/
Staff
Staff is the most valuable resource of the enterprise

Staffing policy covers:
- requirements for staff;
- quantitative and qualitative staff planning;
- marketing staff, i.e. its employment and its reduction or increasing;
- staff training;
- staff control;
- incentive policy;
- social policy;
- information (or communication) policy.

2013 people work at Energomashspetsstal

Structure of professions

- Management: 307 people
- Skilled staff: 475 people
- Workers: 1231 people

Intellectual potential of the enterprise

- PhD: 5 people
- Postgraduate students: 3 people
- Two or more higher education: 311 people
- Getting higher education: 112 people
Terms of corporate culture

Our priorities:

- formation and preservation of favorable moral and psychological climate due to the development of corporate culture
- provide to employees the opportunities for improvement, advanced training and professional development; promotion of creativity and healthy lifestyle
- creation of sense of belonging to a single, powerful and significant on the one hand and the awareness of self-importance in its structure

Key programs of Energomashspetsstal for the corporate culture development

- We are the part of the corporation
  Contests: "Man of the Year of Rosatom", "Innovative leader", "Nuclear Kids", "Olympics of JSC Atomenergomash" and etc.

- Follow healthy lifestyle
  Sports competitions, contests for children of employees, brain-ring tournaments, photo competitions, master classes

- EMSS’s tradition to transfer an experience
  Transfer of knowledge and experience of the older generation to younger, professional skills competitions, scientific and technical conferences

- Prepare worthy substitution
  Practice of students, target training, retraining and skills development at the expense of the company
Occupational Safety and Health

Safety Department of PJSC “EMSS” performs effective monitoring of the state of labor protection at the enterprise and compliance with the normative legal acts on labor protection.

PJSC “EMSS” obtained the permission from authorities of the State Service of Mining Supervision and Industrial Safety of Ukraine for execution of works and of increased danger equipment handling. At present the regulatory documents on labor protection are revised for the purpose of certification of existing OSH management systems (OSHMS) for compliance with the international standard OHSAS 18001: 2007.

Top management, senior specialists, specialists of the Occupational Health and members of the Permanent Commission of the enterprise have been trained and safety knowledge assessment in the State enterprise “The Main Training Center of State Service of Mining Supervision and Industrial Safety of Ukraine”

For more information about occupational safety and health see the company's website: http://emss.ua/o-kompanii/ohrana-truda/
Ecology and Environmental Protection

Environmental Management System is certified for compliance with ISO 14001:2004 by certification body QSCert B.V. Germany – Slovakia, registration number E-6974/12 dated 02.05.2012 valid till 01.05.2015.

Environmental protection department of PJSC “Energomashspetsstal” provides effective control of ecological aspects, reduction of negative influence on environment and efficient use of natural recourses.

Industrial sanitation and nature protection laboratory of environmental protection department provides quality control of surface, waste, ground and artesian waters, pollutant emissions into outside air from stationary sources of PJSC “Energomashspetsstal”.

Specialists of the laboratory are certified by the Ministry of Industrial Policy of Ukraine for measuring and have advanced level of professional training and vast work experience.

Preservation of life and health of employees and environmental protection are the main priorities of plant’s activity.
Ecology and environmental protection

Environmental management service is certified according to ISO14001:2004 (QSCert B.V.).

Start up of the new purification system for an complex EAF-70 made it possible to reduce specific air emissions (on the basis of 1 t of steel being produced) under the main constituents: CO, NO, ferric, manganese, silicon, calcium etc. oxides.

2,5 kg/t ➔ 0,8 kg/t ➔ 3.1 times

This level of specific air emissions meets the European regulations and entitle PJSC “Energomashpetsttal” to be considered as one of the environmentally safest industrial enterprises of the region.

The dynamics of investments related to the improvement of the environmental performance of production

<table>
<thead>
<tr>
<th>Year</th>
<th>Investment (in amount)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>63</td>
</tr>
<tr>
<td>2009</td>
<td>43</td>
</tr>
<tr>
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<td>2014</td>
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Payments for environmental tax

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<tr>
<td>2009</td>
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<tr>
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<td>2013</td>
<td>421</td>
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<td>2014</td>
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ENERGY EFFICIENCY

Energy Efficiency

PISC “Energomashpetsstal” - Ukraine’s first industrial enterprise of full cycle of production with certified energy management system according to ISO 50001 standard.

Since 2011 Energomashpetsstal is actively involved in Interstate project "Energy efficient and aimed at reducing climate changes modernization of industry in Donetsk region"
The key to success of Energomashspetsstal is experience of generations multiplied by the innovative technologies.
Welcome to cooperate!

Public Joint Stock Company “Energomashpetsstal”