

Supply of 26 transformers and reactors for NEC "Ukrenergo"

The project is financed by EBRD within the scope of Energy Strategy of Ukraine

«Zaporozhtransformator» PJSC has signed the contract for complex delivery of transformers and reactors for SEW NEC «Ukrenergo». Based on the contract terms «Zaporozhtransformator» PJSC will manufacture 7 autotransformers 333 MVA, 750/330 kV, 11 transformers 92 MVA, 110 kV, 2,5 MVA, 35 kV, 2,5 MVA, 10 kV, and 8 reactors 110 MVA, 750 kV and 0,27 MVA, 35 kV, as a part of project for construction of power transmission line 750 kV NPP Zaporozhskaya – Kahovskaya with substation «Kahovskaya» 750 kV (Ukraine, Kherson region). Also, the delivery set includes Monitoring System manufactured by «Zaporozhtransformator» PJSC.

The Customer of the equipment is one of strategic partners of «ZTR» PJSC at Ukraine territory – SE NEC «Ukrenergo». Power transmission line project is generally aimed to improvement of operational duty safety of consolidated power



system of Ukraine. The project is financed by European Bank of Reconstruction and Development.

ZTR equipment is successfully operated at NEC «Ukrenergo» sites and proves itself to be the high-level equipment. It became one of the factors for decision-making as for selection of transformers and reactors supplier in favor of «Zaporozhtransformator» PJSC.

Currently the order is under production. Dispatch is scheduled for 2015.

This project is a component part of Energy Strategy of Ukraine till the year 20130 and planned construction of South ring of main lines rated for 750 kV. Owing to «ZTR» PJSC equipment, safety operation of power networks of the region will be ensured, as well as possibility of parallel operation with European power systems, which finally should be resulted in increasing of electric power export.



«Zaporozhtransformator» PJSC invests into production and development of technologies

«Zaporozhtransformator» PJSC has summarized the investment projects of the year 2014 pertaining to implementation of new technologies into production process.

In the current year significant investments have been directed to improvement of insulation production. Introduction of new high-technology equipment under investment budget

ensures development of laminate cardboard reprocessing, improvement of production technology of individual types of insulation parts, enhancement of insulation production efficiency, reduction of workplace number.

Five-axial processing center MX5 3038 Px5 is manufactured by CMS, Italy. Price of the project made up USD 275, 94 thsd. Introduction of the center is aimed to enhancement of functional abilities of existing equipment. New processing center is purposed for manufacture of transformer insulation parts made of glued pressed and laminated cardboard as well as wood laminated



plastic. The parts are processed by means of universal work-head with 5 axes operated by computerized control. Owing to this, it is possible to obtain any profile of the part, the opening and the groove. Size of the working table ensures processing of the parts with linear dimensions up to 3000 mm, as well as pressing rings with diameter up to 3000 mm.

Machine is operated from operator's interface by means of computerized system. Control programs are developed by software engineers and transferred to the machine via LAN. The machine safety system ensures protective fences and blockings, preventing stay within processing area. Great attention is paid to fastening of the parts.

Depending on configuration of the workpiece, it could be fixed directly on the working table using vacuum, or in various available devices: vertical and horizontal pneumatic grippers, vacuum suckers. Processing center also equipped with tool magazine for 16 places, with toll automatic replacement within processing stage. Also, the range of tools is wide and dictated by different types of processing: straight-trough and two-dimensional milling cutters, saws, drills.



In 2014, slitting-cut processing center MD TOP L, manufactured by COMEC, (Italy) was commissioned. Price of the project made up USD 140,20 thsd. Introduction of new equipment solves the specific problem of step production for the framework insulation parts. Installed machine completely corresponds to the requirements; it is highly effective and ensures excellent quality and accuracy measures. The steps are processed by saw discs located on the travelling carriage in inter-perpendicular movable planes. Machine is operated from the board according to control program and human intervention is stipulated only for installation and removal of the workpieces. Operations of the workpieces' processing, pressing and waste removal are completely automated.

Also we introduced the moulding machine Weinig Powermat-1200 (Germany). Price of the project made up USD 454,43 thsd. This machine allows solving of complex problem of manufacture as referred to calibrated trips for spacers and production of winding tee bars. Due to absence of equipment, up to this time, the strips of electric cardboard spacers were purchased from Weidmann (Switzerland), Enpay (Turkey). Introduction of the machine allows giving-up of procurement and organize own production of the strips, effectively employ the cardboard residuals for their manufacture.

In the scope of investment program of 2014, technology of production of winding tee bars of laminated cardboard was implemented and allowed reduction of production cycle and improvement of accuracy parameters. At selection of the equipment to solve assigned tasks, technical departments of the Company set up special requirements to the manufacturer:

- possibility of processing of electric insulation cardboard and laminated cardboard;

- processing accuracy $\pm 0,05$ mm;
- minimum thickness of the material under processing – 1,2 mm.

Only single manufacturer was able to solve the assigned task - Weinig (Germany). As a result, delivered machine combines



the features of woodworking and ensures accuracy parameters inherent to metalworking. The machine is equipped with seven independent spindles provided with tool. Selection was decided on glazier's diamond tool of company Leitz (Germany). Wide spectrum of functions allows manufacture of all required range of calibrated strips and winding tee bars.

Also, within introduction of new technologies machine ALPHA manufactured by EiMa (Germany) was purchased and commissioned. Price of the project made up USD 485,58 thsd. New machine allowed

solving of the problem related to manufacture of spacers by milling method. This allows excluding of punching of these parts as well as using of numerous range of toggle presses, reduction of workplace number, improvement of parts' quality at the expense of avoiding of separating particles on the surfaces/ New machine completely corresponds to the requirements required by ZTR. The whole process is automated; processing parameters are set using control board monitor. Using the machine it is possible to process simultaneously the stack of workpieces with thickness up to 300 mm. Selection of tools required for processing are also organized from well-known German manufacturers: Leitz and Horn.

Consistently, ZTR continues to implement investments and realize new projects. Introduction of new equipment means one more step to quality improvement, increase of production effectiveness and enhancement of ZTR products' competitiveness.

ZTR has been successfully audited by National Accreditation Body of Ukraine

In November 2014 «Zaporozhtransformator» PJSC test laboratory passed the first supervisory audit carried out by representatives of National Accreditation Body of Ukraine (NABU). Audit became the confirmation of compliance with requirements of DSTU ISO/IEC 17025:2006 (ISO/IEC 17025:2005) «General requirements of test and calibration laboratories' competence» in the field of testing of transformers and reactors.

According to Senior Specialist of Transformer Testing Department, Mr. Valentin Fedorenko, NABU is the associated member and the subscriber of bilateral agreement with European Accreditation Cooperation (EA) as well as affiliated member of International Laboratory Accreditation Cooperation (ILAC). «Owing to system of International arrangement, ZTR test laboratory has international acknowledgement and contributes to acceptance of data which support the exported goods in the foreign market. This significantly decreases the costs for the expense of reduction or elimination of needs in re-testing of the goods in another countries, as well as facilitates participation of the company in tenders», - said Mr. Valentin Fedorenko; TTD Senior Specialist also noted that since 2006 the standard

has been adopted for all test laboratories which stipulates a single approach pertaining to estimation of competence of testing complexes. Accreditation certificate holders are automatically assessed for the customers and the partners as companies which possess the trained, skilled staff, proper equipment, etc. ZTR complies with all listed criteria.

Within audit, National Accreditation Body of Ukraine has registered correspondence of test laboratory with declared parameters:

- documents of management system demonstrates compliance with standard requirements and ensures required structure for introduction and maintenance of laboratory management system in line with DSTU ISO/IEC 17025:2006 (ISO/IEC 17025:2005);

- key testing methods declared in the field of accreditation are realized according to the requirements of International standards; monitoring of test performance quality is carried out; correspondence of methods is confirmed by test reports.

Based of audit results, NABU has decided that ZTR test laboratory is able to continue its activity according to declared accreditation field with confirmation of the certificate which ensures acknowledgement of the test reports pertaining to transformers and reactors, carried out by ZTR according to International level.

