

Metinvest to double the basic oxygen furnace durability at its Yenakiiye Steel Works

Within the framework of production continuous improvement, reconstruction and modernisation programme Metinvest is preparing the 160-tonnes BOF vessel at Yenakiiye Iron and Steel Works for the overhaul. Replacement of the vessels's shell of and modernization of the gas exhaust duct during the overhaul will double the durability of the vessel. The Project investments will amount to about UAH 100 mln.

Currently large-size units assembly of new BOF vessel shell is in progress. Seven units with the total weight of more than 400 tonnes were manufactured at OJSC "Azovmash" (Mariupol) according to the proprietary technology. Replacement of steel making equipment casing will reduce operational costs at the least by 50% in terms of energy and water consumption alone.

During the modernization of the gas exhaust duct the old heat-recovery boiler will be replaced with a brand new gas-tight water-heating gas cooler¹. The new cooler will be equipped with automated control, alert and locking system designed to almost double (up to 30 thousand heats) fault tolerance of ecological equipment and ensure the reliability of operation. Sustainable operation of this unit will reduce BOF air emissions almost two-fold.

During repair works the oxygen lance with the rate of 2,000 m³/min is to be installed. Similar units have been already installed in the other BOF vessels of the plant and have proven their efficiency. A fixed two-station machine for top oxygen blowing is to reduce the time between oxygen lances replacement from 45 to 10 minutes.

The overhaul is planned to be carried out during June-July 2011. Quality preparation and large-size units pre-assembly will minimize repair duration and prevent the substantial cuts in production.

"High quality of repairs is one of the crucial goals to be attained in the process of operational efficiency improvement", noted Alexander Podkorytov, the General Director of Yenakiiye Steel. "In preparation and carrying out of such major activities, as the BOF overhaul, nothing shall be left to chance. We have thought through all the aspects to make a modern and highly productive unit possible. And, of course, we paid much attention to improving the working conditions of the personnel and increasing safety of BOF operation" added he.

Reference:

Gas-tight WHT (water-heating cooler) for BOF gases is meant for BOF off-gases heat cooling and recovery and saturated steam generation. Heating surfaces arrangement ensures accessibility and immediate repair of any unit of a boiler. All the boiler's heating surfaces are supplied as the transportable large-sized blocks entailing erection duration reduction. Control automation, alert and locking system of boilers ensure reliable operation of the plant in a design mode, emergencies prevention and plant's stoppage in case of emergency. BOKT-160 project development and supervision was carried out by Ukrainian State Science and Technical Centre "Energostal". Equipment manufactures were identified: gas exhaust duct – OJSC "Kotlurboprom" (Kharkov), supply and adjustment of oxygen lancing drive automation – "Siemens" (Germany). Service life of new equipment under installation will increase threefold – up to 10 years.

YENAKIIYE IRON AND STEEL WORKS is a fully integrated iron and steel producer consisting of JSC Yenakiiye Iron and Steel Works and JV Metalen LLC which jointly operate at a single production site. It is one of the world's leading concast billet producers. The enterprise is a part of Metinvest's Steel and rolled products division and manufactures concast billet being one of the world leaders in the field, as well as various long products (beams, channels, angles bars, etc) of carbon, structural, and low-carbon and low-alloyed steel grades.

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