

IMPROVING THE EFFICIENCY OF PRIMARY COKE OVEN GAS COOLING IN COKE OVEN RECOVERY SHOPS

© **S.O. Kravchenko**, Ph.D. in technical sciences, **M.O. Solovyov**, Ph.D. in technical sciences, **A.A. Konarev** (STATE ENTERPRISE "STATE INSTITUTE FOR DESIGNING ENTERPRISES OF COKE OVEN AND BY-PRODUCT PLANTS" (SE "GIPROKOKS"), 60 Sumska str., Kharkiv, 61002, Ukraine)

The article provides a brief analysis of existing schemes and equipment for primary cooling of coke oven gas, lists their advantages and disadvantages. The importance of the technological stage of primary cooling, which solves a whole range of tasks, is shown and taken into account: reducing the volume of coke gas and reducing energy consumption for its further compression in gas blowers; condensation of water vapour contained in it, consisting of coal charge moisture, pyrogenetic water, and water vapour coming from the evaporation of overburden water during irrigation of gas collectors; achieving the optimum temperature for the recovery of benzene hydrocarbons, hydrogen sulphide and ammonia from coke gas. In addition, the primary gas coolers release most of the mist-like resin, which not only increases the yield of marketable products but also eliminates further contamination of equipment for capturing chemical coking products.

It is shown that irrigation of the intertube space of primary gas refrigerators (PGR) with a water-resin emulsion is a necessary measure of their sustainable and efficient operation. At the same time, the disadvantages of the existing system of irrigation of the intertubular space of refrigerators with water-resin emulsion, especially for high-capacity devices, are indicated. "SE GIPROKOKS" has developed a new scheme for flushing the intertube space of the PGR from deposits, which has significant advantages over the existing system. A number of structural elements and components of gas refrigerators were also improved.

The new system of flushing the intertubular space of the GCF from deposits designed by "SE GIPROKOKS" is also an environmental protection measure that reduces the volume of wastewater due to the reduction in the number of steams of the unit.

Keywords: coke production, coke oven gas, primary cooling, primary gas refrigerator, efficiency, intertube space, flushing, water-resin emulsion, irrigation system.

Corresponding author M.S. Solovyov, e-mail: solovjov.gpk.ua@gmail.com

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