New challenges: Repowering of K5 boiler of Pątnów Power Plant in ZE PAK S.A. to reduce NOx emission

In June 2012, the test run of the deNOx system at K5 boiler type OP-650b was completed in Pątnów Power Plant, and according to the contract the system was handed over to be put in service. The Consortium executing the contact based on Nalco Mobotec technology met contractual requirements, which allowed to complete another project stage. K5 boiler repowering project started in January 2011 in accordance with the contract from December 2010, and it assumed the execution of the flue gas denitrification system on a turnkey basis with application of combined primary and secondary non-catalytic methods. The project also included the installation of the afterburning grate and partial sealing of the combustion chamber.

The boiler repowering plans were very ambitious: NOx emission reduction with non-catalytic measures to the level below 180 mg/m^3_n, and with primary measures to the level below 200 mg/m^3_n (at 6% of oxygen content in dry flue gas) for the power unit load range within 150-200 MWe, while keeping the existing commercial parameters of combustion by-products. Consortium executed the project with application of **ROFA** technology, which optimizes the combustion process, and **Rotamix** technology as the secondary non-catalytic method, with the use of aqueous urea solution. Both these methods are recognized and proven many times - also at facilities in Poland - technologies of nitrogen oxides emission reduction.

Owing to the commitment of all parties involved in this project, we managed to fulfil contractual obligations according to the schedule. This result allows to look into the future with optimism and focus on execution of next projects, including those already started:

- installation of SNCR Rotamix™ system at BC1 boiler in ZEC Kogeneracja Wrocław S.A. (being a part of EDF Polska Group), in order to reduce emission below 190 mg/m^3_n and
- repowering of boilers no. 1, 2 and 3 in PGE Elektrownia Turów S.A. (being a part of PGE GIEK S.A.), in order to reduce NOx emission below 190 mg/m^3_n.