

Modernization of the control system of flue gas fans at unit 1 in the scope of supply and installation of frequency converters 6kV in a lignite-fired power plant, with a total installed power of more than 2000MW

Comprehensive modernization of the existing direct power supply of flue gas fan motors, using PowerFlex 7000 medium voltage converters (current type). In the application, the existing 2600kW motors each driving the flue gas fans were left (without modernization). This is an application of the largest of the series of air-cooled units in the B-frame, with an output rated current of 302A, where the DC reactor current reaches a value of the order of 400A. Due to the power plant's significant space limitations for equipment foundation, the scope of work included the delivery of an external container station. Among other things, the station included medium-voltage frequency converters, bypass switchgear for the converters, 400V switchgear for auxiliary needs, and a cooling system with a cooling capacity of 196kW. The scope of the task included all electrical work related to the modernization, including MV and LV power cabling, along with signal wiring. The modernization was aimed at reducing the energy consumption of the unit's own needs, reducing the noise generated by the exhaust gas extraction system, increasing the quality and range of control, and enabling fan braking and stopping in emergency conditions and during regulation

The scope of work carried out:

- Preparation of project documentation in the modernized scope
- Delivery of an external container station for the installation of equipment: medium-voltage frequency converters, medium-voltage bypass switchgear, 400V switchgear of own needs, cooling system with cooling power of 196kW
- Delivery of two PowerFlex 7000 (current type) 302A, 6kV inverters from Rockwell Automation
- Construction work, assembly work, electrical installations
- Guidance on control algorithms
- Commissioning and optimization of equipment operation in the flue gas fan - frequency converter system
- Participation of Introl Automatyka engineers in commissioning of the entire unit after modernization and during tests and significant commissioning events after the first synchronization of the unit with the National Grid
- Delivery of complete as-built documentation in the modernized scope
- Training on operation and maintenance