

ANALYSIS OF WORKING CONDITIONS OF RECUPERATIVE AND HEAT RECOVERY SYSTEMS OF COMPRESSOR-LESS CCGT (COMBINED CYCLE GAS TURBINE)

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A variant developed by the authors of the implementation of the oxygen-fuel cycles- compressorless combined-cycle plants in comparison with combined-cycle power plants is considered. The analysis of the working conditions of heat exchangers of a compressor-less combined cycle gas turbine (CCGT) is carried out. The proposed solution ensures efficient recovery and utilization of the heat of the exhaust working fluid, which ensures the fuel efficiency of the installation as a whole. Process heat utilization in these devices allows you to fully take advantage of the direct-contact heat exchangers. The proposed fundamental solution of the organization of the process of heat and mass transfer of the compressor-less CCGT allows increasing the fuel utilization factor and reducing the amount of harmful emissions into the atmosphere.

Keywords: direct-contact heat exchangers, heat recovery, combined cycle gas turbine (CCGT), clean energy production, carbon dioxide.

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