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INVESTIGATION OF THE VELOCITY FIELD OF AIR FLOWS OF EVAPORATIVE COOLING TOWERS OF THERMAL POWER STATIONS BY THE METHOD OF OPTICAL VISUALIZATION

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The results of experimental researches of visualization of inlet air flows on evaporative cooling towers received in performance of the works on thermal power stations of Republic of Belarus, the CIS countries and China are presented.

The information on the velocity distribution of the inlet air flow in the cooling tower allows to use its energy for an increase in cooling ability of the evaporative cooling towers. The energy of a wind stream can be used for swirling of entering air flow in the bottom part of the cooling tower, which is realized by means of aerodynamic vortex makers.

It is shown that an increase in the cooling efficiency of circulating water can be reached as a result of the optimum way of formation of the inlet flow both at the input and in the interior of the cooling tower.

The results of natural researches of the mutual aerodynamic influence of closely-spaced cooling towers are presented. Under calm conditions, the mutual influence of the cooling towers does not occur. With an increase in the speed of an external wind an asymmetry in the distribution of the velocity field of the inlet air flow arises, which should be considered in designing of an aerodynamic vortex maker.