

The invention relates to wind-power engineering, in particular to devices and methods for predictive monitoring of the wind turbine state and for implementation of countermeasures.

The device, according to the invention, comprises a tower (1), on which is installed a nacelle (2), a rotor (3) with aerodynamic blades (4), connected to a drive shaft (5) of a mechanical multiplier (6), a driven shaft of which is rigidly connected to one end of the rotor of an electric generator (7), on the other end (8) of which being rigidly fixed by means of a coupling (10) a fan propeller (9). Close by the fan propeller (9), in the body of the nacelle (2), is made at least one hole with a control cap (11). On the body of the electric generator (7) is installed at least a temperature sensor (12), and on the aerodynamic blades (4) are installed deformation (14) and temperature sensors (17). Inside the aerodynamic blades (4) is installed an ice layer breaking element (16). The device also contains a monitoring and processing equipment (28), a processor (30), and a control system (29), connected to said sensors.

The method, according to the invention, comprises receiving and measuring a signal regarding the overheating of an electric generator (7), placed inside a nacelle (2) of the wind turbine, by means of at least a temperature sensor (12), a signal regarding the appearance of a microcrack in a composite shell (15) of an aerodynamic blade (4) of the wind turbine by means of at least a deformation sensor (14), a signal regarding the detection of an ice layer (16), formed on the blade (4), by means of at least a temperature sensor (17), and transmitting these signals to a monitoring and processing equipment (28), a processor (30), and to a control system (29) for the control and implementation of countermeasures.

Claims: 6

Fig.: 13

