

METROLOGICAL SUPPLY OF MONITORING OF ENERGY OBJECTS

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Today, in the world practice of operation of NPP and TES, systems of measurement, control, diagnostics or in general monitoring of a number of parameters and characteristics of the environment of stations are widely used. This requires the equipping of monitoring systems with modern technical equipment, depending on the developed requirements for the spatial-temporal distribution of controls and sources of environmental pollution, the quantity of controlled parameters, accuracy and discreteness of observations, which complicates the metrological provision of such systems.

The objective is an improvement of the approach to metrological support for monitoring of the environment of energy objects.

Results. The paper analyzes system of the environment monitoring of heat power objects, including innovative, built on unmanned aerial vehicles in order to identify ways to ensure the reliability of the measurement results. Trends in classical metrology, which were mainly focused on static measurements, were to increase sensitivity of measurements (by improving the metrological element base and developing new physical and technical principles of measurement) and improving the accuracy of measurements. The main tasks facing modern metrology are the need to develop methods for measuring and controlling a large number of heterogeneous parameters and transmitting results to a single analyzer (processor), as well as increasing the degree of automation of individual measurements. For the development of this direction, measuring instruments should not only measure the quantities, but convert them, make the necessary calculations, display the results obtained in the necessary form, transmit them to their destination or store them.

During the study, it was found that it is difficult or impossible to create standards for measurable values for environmental monitoring tasks. Taking into account this, for the realization of the traceability of the measurement results, elemental traceability is proposed for the basic units of physical quantities SI, obtained by direct measurements and the results of which calculate the values of informative parameters. Elemental traceability in practical implementation is established in accordance with the traceability of the quantities included in the equation of mediated measurements.

Conclusions. The use of the proposed approach to building standard will provide measurement of surface heat flux density in the actual dynamic range and create a standard that meets international scientific and technical level.