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ANALYSIS OF TECHNICAL AND ECONOMIC INDICATORS IN THE INTEGRATED CONTROL SYSTEM

The conditions for optimal operation of an enterprise are determined based on the analysis of its technical and economic performance. Therefore, automation of technical and economic performance analysis is one of the most important functions of the automated control system (ACS) as part of the integrated automated control system (IACS).

For the effective functioning of this subsystem, it is necessary to provide it with a sufficient amount of continuously incoming operational information, comprehensively characterizing the operation of power equipment. Such information can be obtained as a result of using qualitatively new methods of TEI analysis, since the currently used analysis methods allow identifying only a limited number of possible causes and factors affecting the efficiency and reliability of equipment operation. Moreover, after relatively long periods of time and, in most cases, without an appropriate quantitative assessment. The main disadvantages of existing analysis methods include:

A large time interval between analyses is observed, which reduces their effectiveness and efficiency.

The ability to take into account only a limited number of factors affecting the efficiency of equipment operation. This circumstance reduces the depth of analysis, which ultimately complicates the identification of possible reserves for increasing the efficiency of a power plant. It is necessary to develop new methods of analysis and significantly increase the volume of work on collecting and processing initial (primary) information, which the accounting groups existing at most power plants are unable to cope with.

3. It is practically impossible to determine the degree of influence of various categories and groups of power plant workers on its thermal energy performance.

With the growth of the unit capacities of power units, the possibilities for improving the quality and depth of the TEI analysis increase due to the increase in the number of controlled points and, consequently, the volume of primary information. For example, when moving from a 200 MW unit (with a drum steam generator) to an 800 MW unit (with a straight-through steam generator), the total number of information points increases from ~900 to ~4000.

These shortcomings hinder the effective use of the system of planning and economic stimulation of production in the conditions of market relations.

It is possible to organize a qualitatively new analysis of technical and economic indicators – continuous and multifactorial, capable of eliminating the noted shortcomings, only if it is automated. Automation of the analysis of technical and economic indicators is currently practically absent, despite the intensive introduction of modern computer technology. This lag is due to the underestimation of the role of technical and economic indicator analysis as a powerful tool for influencing the economics of production and the imperfection of the methods used to conduct it.

The higher the level of analysis, the lower the cost of production.

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