GEODETIC INFORMATION IN AUTOMATED SYSTEM OF TECHNICAL SUPPORT AND MAINTENANCE

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Two years ago, at the Pavlodar oil chemistry refinery LLP, as part of the modernization of the production process, an automated system for maintenance and repair of equipment (PM) was introduced. This system, consisting of several subsystems, made it possible to monitor the workflow, monitor many production cycles, compile statistics on the performance of various production tasks, identify problematic zones, and also pre-predict the failure of a particular equipment, calculate problematic zones. However, the process of expanding the system of functional maintenance does not stand still. Currently, as part of the digitalization of the production process, the plant is implementing a project to create a 3D master plan for the plant. The article describes in detail the process of phased creation of a digital spatial model and its relationship with the automated control system for maintenance and repair of equipment. One of the main stages of creating a three-dimensional model is described in detail – the process of obtaining high-precision geodetic measurements to create a geodetic base, field work, and the creation of a plan-height justification. The methodology of laser scanning, the process of processing the obtained data, modeling and filling the digital model with attributive data is described. Today it is difficult to dispute the importance of introducing digital spatial modeling in production and the main role in the success of these innovative projects is played by correctly received, processed and implemented initial data in the model. Thus, geodetic support is a key step in the complex technological process of creating a digital spatial double or 3D model of the plant and its operation in the maintenance system.

Keywords: maintenance, equipment repair, geodetic support, vertical-height justification, laser scanning, 3D model, master plan

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