1.8.24. MODEL OF THE ALGORYTHMS FOR OPERATING ACTIONS AND MODELS OF THE PROCESSES IN THE FUZZY SYSTEMS OF VIBRODIAGNOSTICS MAIN PUMP UNITS

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The task of increasing the operational reliability of the main pump units in connection with the prolonged non- failure operation time and overhaul periods is very urgent nowadays. The application of scheduled maintenance system is of no effect as there are no formal and heuristic diagnostic models adequate to real processes in main pump units and in the environment. The task of examining the unit's technical state (the estimation of technical condition of elements and groups (assemblies) of the main pump units) becomes complicated as the cavitation processes influence the change of informative signs. In this case the problem of research and optimisation of vibration -based diagnostic system under the influence of random dithering factors can be solved. This results in the fuller and more efficient use of vibroinformation, the increased reliability of diagnostic statement and leads to maintenance of mechanism according to it's real state.

The problem of increasing accuracy, speed and reliability of technical conditions of MPU NPC in works [1 – 3] was partly solved at the expense of Markov's theory of optimal nonlinear filtration. These research works show the materials of new mathematic models of a useful signal and algorithms for operating actions for the purpose of maintaining work of a system out of specific characterictic zone. However in real life there is no full aprioristic information and change of parameters of signals in a random way leads to a change of equations of conditions and measurements.

Therefore the problem of maintenance service of MPU lies in insufficient efficiency of diagnostic models of processes. For this case the algorithm for operating actions in diagnostic systems can be realised in the form of indistinct (logical – linguistic) models. This report (article) also deals with the problems of development of the new models of processes taking place in the fuzzy system of vibrodiagnostics on the basis of logical linguistic approach.

References:

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