



CONDITION BASED PREVENTIVE MAINTENANCE CONTROL STRATEGY DESIGN

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Abstract- Compared with time based maintenance (TBM), Condition based maintenance (CBM) can improved the availability of the devices and reduced the examining maintenance cost. However, CBM possibly arouse an unexpected interference on production process due to an unplanned maintenance activity in advance so that the stable-state operation of the system was influenced. As the system scale was larger, this accidental disturbance should not be ignored. Based on the viewpoint, we first constructed a full-life cycle four-state model of the device, and then simplified it as three-state model based on some practical considerations in this paper. On the basis of it, the paper analyzed its reliability operation characteristics as the checking items being constants, and then proposed a dynamic real-time iterative control strategy on the checking items according to the practical state of the devices under CBM, and investigated its availability and adaptability. Moreover, the paper still performed devices state evaluation, and analyzed the control error and the selection of control timing, and etc, which further expounded the availability of control strategy. In the end, the paper still conducted probability simulation on it, and some

simulation experiments had been done. The related investigated results and the simulation results show that the proposed method in the paper is effective and available, and can ensure the system normal working not to be influenced by maintenance activities.

Index terms: Preventive maintenance, reliability, control strategy, estimation, Markov.