**Study of Using Weighting Property Index for Selecting the Best Maintenance Management System (MMS) at Power Plants**

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**Abstract**

To make Power Plants (PPs) economical, the maintenance functions should be optimized by carefully selecting and planning the Maintenance Management System (MMS) that will address the maintenance needs of the plant at the least cost. This research was carried out to obtain a clear understanding of the Traditional method and to assess their suitability to selection the management system of maintenance in power plants in Iraq. The objective of the study was to select the most suitable MMS for Maintenance of Electric Power Plants (MEPP) to make the plants operate economically. The traditional method called Weighting Property Index (WPI) used for selecting MMS for MEPP. This method, which is based on weighting property method (WPM) uses a digital logic (DL) due to, makes the result more accurate because it eliminates the problem of the criteria have least important. The research showed, when applied the method (WPI), the results was indicate that the preventive maintenance, is one of the types of planned maintenance, and is the best strategy for MMS in implementation the works (MEPP) in Iraq, where was arranging the alternatives generally according to results which was obtained from the method (WPI) as follows; preventive maintenance is (6.67), predictive maintenance is (6.07), proactive maintenance is (5.89), run to failure is (5.5), and unplanned failure is (5.33). For further research can be used operational KPIs with maintenance KPIs and use of another alternative is design out maintenance with other alternatives.

**Keywords:** Maintenance, KPI, WPI, Preventive maintenance, planned maintenance, digital logic, Maintenance Management System (MMS)