

Should I Do the Preventive Maintenance Now?

MA Cabarcas-Romero and B Rodríguez-Álamo

Industrial Engineering Department
University of Puerto Rico at Mayagüez
Mayagüez, PR, USA

Corresponding author's Email: maria.cabarcas@upr.edu

Abstract: Proper preventive maintenance (PM) scheduling requires a myriad of information and data sharing from various system components. The problem is exacerbated for industries that perform maintenance during work shifts, ensuring minimum cost while considering capacitated resources. This research is focused on developing a cost-minimizing scheduling model that could be used as a practical tool for those who perform their maintenance during production time, and maintenance events are dominated by events that are triggered by suggested time-based frequency. This study presents a non-linear programming model for solving the preventive maintenance scheduling problem in companies that face the challenge of efficiently allocating their resources, considering production requirements and capacity and resource constraints. The objective is to minimize total costs, including earliness cost, tardiness cost, preventive maintenance cost, and overtime cost. Preliminary results and managerial insights are presented.

Keywords: Preventive Maintenance Scheduling, Time-Based Frequency, Maintenance Cost