


Integration of a Maintenance Management Model (MMM) Into an Asset Management Process: Relationship Between the Phases of the MMM and the Requirements of ISO 55000

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EXECUTIVE SUMMARY

The chapter explains in detail the maintenance management model (MMM) taken as a reference for the development of the book. The chapter is based on the eight phases of the MMM. The first three blocks determine the effectiveness of the management; the following blocks assure the same efficiency and continuous improvement in the following way: Blocks 4 and 5 include actions for the planning and scheduling of maintenance, including, of course, the capacity of planning of department of maintenance. Blocks 6 and 7 are dedicated to the evaluation and control of the maintenance and the cost of assets throughout their life cycle. This chapter of introduction briefly summarizes the process and the reference frame necessary for the implementation of the MMM. This chapter also presents the relationship between the eight phases of the maintenance management model proposed and the general requirements of the asset management standard ISO 55000 to show how the gradual implementation of the MMM largely covers the requirements of the standard ISO 55000.

1. INTRODUCTION

Asset management consists of processes and tools to effectively use company's assets to gain value. Asset management systems should align with the objectives of the organizations to help to build a successful enterprise. By implementing asset management processes, businesses can realize benefits like lower operating costs, lower cost of product, higher return-on-investment (ROI) and extended equipment useful life. Maintenance management systems are part of the asset management systems and ensures that equipment remains available when needed over its planned lifetime, preventing unexpected repairs and operational downtime. Nowadays intelligent maintenance management systems track resources such as labor, material and equipment to make important decisions in improving maintenance management processes. Maintenance management and asset management are technically different, but they are very much interrelated and work well together (Crespo et al., 20218, Parra and Crespo, 2020).

Maintenance management helps to ensure functionality and health of the assets while asset management benefit of that to obtain the maximum value, out of them, over their life cycle. Asset management and maintenance management are both necessary and valuable for every organization. Both practices can help maintenance managers come to better and more informed decisions in the day-to-day business practices. The maintenance management should get to align the activities of maintenance in accordance with the key business strategy, which must be designed under the comprehensive approach of an asset management process (Crespo et al., 2018). The design of the strategy will be developed in three levels of activity in the company: strategic or direction, tactical or processes and operational. After having transformed the priorities of the business into priorities of maintenance, maintenance managers shall make their medium-term strategies to tackle potential weaknesses in the maintenance of the equipment, in accordance with these objectives. In this way a generic maintenance plan in the company is obtained which then needs to be developed. The development of this plan will entail, as a fundamental point, specifying a series of policies to be carried out for assets that are deemed critical. At this same level, another series of actions can be provided on aspects that have to do, for example, with the requirements for skills and technologies to be used for the improvement of the effectiveness and efficiency of maintenance at a micro level, but require investment consideration. Now what has been previously commented becomes concretized in a simple and practical manner, always bearing in mind enabling the maintenance managers to carry out the implementation of the above concepts (Parra et al., 2021).

A proposal for a generic maintenance management model (MMM) is thus presented which takes into account and integrates many of the models found in the literature to date, or of employees in practice in companies of long tradition and excellence in this field (Crespo et al, 2009, Parra et al., 2020). The proposed maintenance management model (MMM) consists of eight blocks (Figure 1), which distinguish and characterize specific actions to be followed in the different steps of the process of maintenance management. It is a dynamic and sequential closed loop trying to accurately characterize the course of actions to carry out in this management process to ensure the efficiency, effectiveness, and continuous improvement.

The book to be developed is based on the 8 phases of the model presented in the figure of reference of MMM (Parra and Crespo 2020). The first three blocks determine the effectiveness of the management; the following blocks assure the same efficiency and continuous improvement in the following way: blocks 4 and 5 include actions for the planning and scheduling of maintenance, including, of course, the capacity of planning of department of maintenance. Blocks 6 and 7 are dedicated to the evaluation and control of the maintenance and the cost of assets throughout their life cycle. Finally block eight focuses on actions

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