Abstract

This thesis focuses on the integration of maintenance and production in process industries. Earlier research shows that coordinating maintenance plans with production plans is more important in flow manufacturing. The overall aim of this thesis is to identify important factors when integrating maintenance with production, as well as to develop and improve the Crespo Márquez (2007) maintenance management framework.

Research is based on three multiple case studies at Swedish process industries. These cases provide a foundation for identifying the factors influencing integration of maintenance and production. The first multiple case study analysed whether process industries perform holistic maintenance management. It also shows what elements of maintenance management the process industries focus on. The second multiple case study presents production planning at tactical level in process industries. The final multiple case study presents the levels of production planner consideration of maintenance in their planning processes.

This research shows that only one out of three of the process industries analysed used a holistic view of their maintenance management. The maintenance management frameworks used by the companies are either too detailed or complicated to use, or too loosely formulated. This research also shows that these process industries are fairly flexible in their production planning.

The factors which influenced the integration of maintenance and production most were summarised as a list of the five most important. The first integrating factor is top management’s interest in maintenance management, followed by transparency within departments. The third factor is the importance of understanding other departments’ needs in order to perform well and using Computerised Maintenance Management Systems (CMMS) properly. The final integrating factor is working with the production assets in systems rather than as components and using cross-functional knowledge in teamwork. The further development of the maintenance management framework also indicated the importance of leadership and organisational issues, as well as the application of CMMS and work with Safety, Health and Environment (SHE) which the Crespo Márquez (2007) maintenance management framework did not include, even though this is vital to success.