

Team 6 Maintenance Management in the Oil and Gas Industry

Executive Summary

Maintenance, in its narrow sense, includes all activities related to maintaining a high level of system availability and reliability and its ability to perform at a high level of quality. The objective of this paper is to identify important strategies that are **undertaken by maintenance departments in the oil and gas industry in Canada**. An overview of the industry is presented by dividing the process into 3 phases of oil and gas production: up-stream, mid-stream, and down-stream. After briefly describing each phase, different maintenance strategies are discussed and their respective advantages and disadvantages highlighted. With this information, the scope of this project was to develop a strategic plan for major maintenance activities such as scheduled and unforeseen shutdowns which incur some of the largest expenses of a process plant.

Various project management techniques such as: Work Breakdown Structure, scheduling and prioritization are discussed. The critical chain method is recommended as the replacement to critical path method. This will improve the project by reducing schedule and decreasing cost. Risk based maintenance is discussed in relation to reliability-centred maintenance and a new prioritization index is introduced. The prioritization index will reflect the criticality of the various tasks and the maintenance manager can take an informed decision on how to allocate the resources.

Human Resource Management discusses the problems that arises during schedule compressed maintenance. Some of the main issues are safety incidents, planning issues, and different types of conflicts that occur during the project. Most of the information was based on key issues pointed out by the interviewee, who works in maintenance department in oil and gas.

Recommendations for human resource planning includes identifying important managerial skills required such as safety, team management, and different types of leadership styles. Finally, different methods of resolving conflict were explained using diagrams from Project Management Framework, depending on the conflict situation.