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CASE STUDIES ON PLANT TURNAROUND MAINTENANCE IN MALAYSIA

Based on the study undertaken empirically, an extensive descriptive analysis of several companies was conducted. Areas covered include organizational context, structure, structuring processes, and organizational performance of the turnaround maintenance of the companies that are involved in the study.

This gives a brief account of the background of the six groups of companies that are identified by their manufacturing activities, the overall size of the companies, and the number of years they have been in operations. It also describes the size of the turnaround maintenance events that is represented by the cost of the turnaround, its planning duration, and the number of workforces required in executing the event. Based on the survey data, it uncovers the salient characteristics of the plant turnaround maintenance, for instance, the typical scope of work of the turnaround maintenance work, the frequency of turnaround maintenance, duration of the turnaround, and the way the companies organise their turnaround events. The various turnaround organizational structures and the number of levels of hierarchy that are established among these companies are highlighted. There is also a brief account of the use of contractors in implementing the turnaround maintenance activities.

BACKGROUND OF THE COMPANIES

Fifty eight companies are included in this study located nationwide. As shown in Table 3.1, a vast majority (close to 90.0 percent) of the companies are located in Peninsular Malaysia while the remaining companies are found in East Malaysia; namely Sarawak and the Federal Territory of Labuan. These companies differ not only in the plant technology that they employed in conducting their business operation, but also in other prevailing characteristics that include, among others, the size of manpower, the number of years in service, the frequency of their turnaround maintenance, costs of the turnaround, planning duration of the turnaround, and duration of the turnaround events.

Table 3.1 Location of the Companies by States

State	Frequency	Percentage
Johor	11	19.0
Perak	11	19.0
Terengganu	10	17.2
Melaka	6	10.4
Pahang	5	8.6
Negeri Sembilan	5	8.6
Selangor	2	3.4
Kedah	3	5.2
Sarawak	2	3.4
Labuan	2	3.4
P. Pinang	1	1.7
Total	58	100

These companies are classified into six categories based on their main manufacturing activities, vis-à-vis the final products that they produced. These categories represent various plant technologies employed by the companies.

The 43.1 percent of the companies covered in the study consist of manufacturers of petroleum-based products. This is followed by eight electric power plants that form 17.4 percent of the sample. The