

Preface

Chemical industries are very important for our daily lives since we need various products for personal hygiene and health care, fuels for cooking and vehicles, paints and dyes, petrochemicals, synthetic fibres, water treatment chemicals, fertilisers, insecticides and pesticides for agriculture, etc. Chemical industries also make a large contribution to national economies. However, many of these industries produce or handle dangerous and highly polluting chemicals which must be very carefully controlled. Hence, the governments of all countries insist on compliance with the strict rules and regulations which are enacted to ensure the safety of personnel and the control of environmental pollution.

It is necessary that management, and all those shop floor engineers working in chemical industries (who are looking after the process and maintenance) should operate their plants in a safe, pollution free manner along with an all-around efficiency in order to keep the pollution and the production costs in control while meeting the required product quality and delivery schedules for their products.

Some of their main activities are given as follows:

- Market survey to estimate demand for the product mix
- Setting up new production units, expand/diversify running units, or revive idle units
- Ensuring safe operations and maintenance by Hazid and Hazop studies
- Compliance with statutory rules and regulations
- Procuring materials and machinery
- Environmental pollution control by minimising effluents and treating them properly
- Production of chemicals as per specifications of quality control checks
- Dispatch as per the delivery schedules agreed with clients

The author has attempted to present information generally needed by these engineers (and managers) about technical matters in a bullet format (rather than lengthy explanations) for an analysis of their plants and for proceeding further. It is seen that the main points are easily noted when checklists are given in this manner.

It is hoped this format will enable them to quickly prepare reports for plant expansion, diversification, and purchase of new equipment for presenting to the higher management for approval and sanctions.

Suitable explanatory notes instead of lengthy descriptions are added only at appropriate sections (in the relevant chapters of the book).

There are many excellent books available for researchers. However, I have placed more emphasis on safety, environmental pollution control, and energy efficiency while writing the book and hence request the persons carrying out research to always consider these issues while developing new processes and products.

The book is thus meant for use by production managements, shop floor engineers, and for students who wish to join the chemical industries.

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