

CHAPTER 1

Introduction

Problems associated with the management of solid and hazardous waste in developing countries are diverse and complex. Rapid development, urbanization, and population growth, problems pertaining to the effective management of solid waste, have escalated to a great extent. There are five distinct facets to the management of solid wastes:

1. identifying and categorizing the source and nature of the waste
2. segregation, storage, and collection of the waste
3. transport of the waste
4. processing (including resource recovery) of the waste
5. ultimate disposal of the waste

Until recently disposal was the only technical and economical option that could be taken in the management of these wastes. The technology for resource recovery and recycling was not considered because of its economical impracticability and its low quality for use as raw material in production. However, the time has come when recycling needs to be considered as a strong alternative against disposal for the reasons that the present waste management techniques are not adequate to prevent environmental pollution. Technology development is key to ensure environmental protection and legal compliance. Environmental policy includes the will to use cleaner technologies or best-available technologies. Skills and competences of the labor force have to be sufficiently updated and balanced with technology used. Objectives and targets have to be designed taking into account environmental performance (planned and actual) and technology changes. Operational control and noncompliance management require a periodic assessment and review of the technological means. The auditing process and team shall correspond to the technology development of the organization. Several environmental technologies are presented, covering the following issues:

1. Municipal solid waste
2. Plastic waste
3. Biomedical waste
4. Hazardous waste

5. Electronic waste

Waste management is one of the most important environmental problems of the world. Various different technologies exist to apply to management of the waste that human activities generate. The best option to combat the waste accumulation problems is always a reduction in generation of wastes, then the reuse of wastes, and finally the recycling of wastes. Recent advancement is to recover. Sometimes it is necessary to treat and dispose the wastes.

The techniques used to manage wastes are of three types:

- volume reduction technologies (mechanical, physical, and chemical)
- treatment and disposal of waste technologies (biodegradation, solidification, stabilization, disinfection, destruction, dismantling, etc.)
- ultimate disposal of wastes

Quantification, characterization and categorization, and technologies to manage the above wastes are presented in the following chapters.