

Chemical Disasters

Need for improved safety measures

*From the European Regional Programme on Chemical Safety
World Health Organization*

The accidental release of methyl isocyanate in Bhopal, India, resulting in more than 2,500 deaths, has tragically highlighted the urgent need for every country to develop adequate response systems for dealing with chemical emergencies. With the ever-increasing volume of chemicals being extracted, manufactured, transported, stored, used or disposed of as wastes, it is inevitable that such accidents will happen with increased frequency all over the world.

The ways in which countries deal with accidents in general are highly variable and reflect differences in governmental structure, culture and history. Most countries have some sort of emergency response system or set of systems for traditional accidents. However, the accidental release of toxic chemicals adds a requirement for information and expertise for which most emergency response systems are not prepared.

Any emergency response system is designed to reduce the impact of an accident by rapid containment. In the case of toxic chemical accidents, it is also necessary to know the nature of the chemicals, how to deal with them, the toxic, physical and chemical properties of the materials and the level of risk

tact, both for the emergency crews and the adjacent population. In this manner, an accident involving the release of potentially toxic or hazardous chemicals is different from other emergencies (traffic accident, fire, train derailment, etc.).

Chemical emergencies may arise in a number of ways. Some of the more important types are as follows:

- disaster/explosion in a plant handling or producing potentially toxic substances;
- accidents in storage facilities handling large quantities of various chemicals;
- accidents during the transportation of chemicals;
- misuse of chemicals, resulting in contamination of foodstuff, the environment, overdosing of agrochemicals, etc ;

- improper waste management, such as uncontrolled dumping of toxic chemicals, failure in waste management systems or accidents in wastewater treatment plants.

Emergency Response Systems

Main objectives of emergency response systems

Accidents can occur in any industry and in almost any activity in spite of efforts to prevent them. In particular, those industries or activities dealing with toxic chemicals have a high potential for loss or damage

The main subject of an emergency response system is to minimize any possible adverse impacts of accidents on people, environment and property. This requires the establishment of a system

which makes optimum use of all available resources for speedy containment of the incident, protecting the health and safety of the people, both nearby residents and workers, as well as minimizing damage to the environment and property. The emergency response system must also provide adequate and accurate information to all relevant auth-

