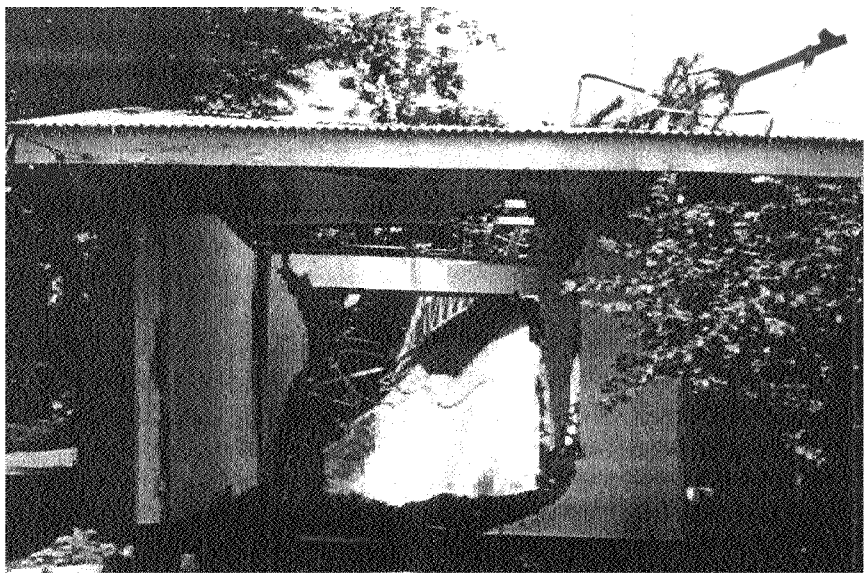
Chapter 1

Overview

Water utilities are charged with providing high-quality drinking water and meeting the quantity demand of their customers. Disruptions in water quality and delivery will occur as the result of natural disasters (Figure 1-1), accidents, and intentional acts. To meet their charge, utilities must eliminate or reduce the effects of these emergencies. The best way to do this is by preparing for emergencies. To provide general guidance for such preparation, AWWA Manual M19 has been developed This manual presents the principles, practices, and guidelines for water utility emergency planning.



Source: D.B Ballantyne.

Figure 1-1 During a 1990 earthquake near Umingan, Philippines, this 50,000-gal (190,000-L) elevated steel water tank collapsed. The rushing water went through an adjacent police station.

The 1974 Federal Safe Drinking Water Act (SDWA) briefly refers to "emergency circumstances" in Section 14.13, Subsection A:

> For purposes of this title, a State has primary enforcement responsibility for public water systems during any period for which the Administrator determines (pursuant to regulations prescribed under Subsection B) that such state . . has adopted and can implement an adequate plan for the provision for safe drinking water under emergency circumstances.

While primary enforcement agencies throughout the country can be expected to devote considerable attention to the standards addressed by the SDWA, water utilities should not wait for agencies to mandate emergency planning. Water utilities should consider themselves responsible for providing water under emergency circumstances. Regardless of their size and location, utilities should prepare for emergencies before they happen and should be able to quickly restore water service

CONCEPTS AND DEFINITIONS

The following concepts and terms are used throughout this manual.

Emergency. An emergency includes any event that may degrade the quality or quantity of potable water supplies available to serve customers.

Minor emergencies. Water utilities routinely experience minor emergencies. Examples are numerous — pipe bursts, a valve sticks, a hydrant breaks, or power goes out for a few minutes Minor emergencies can also be described as routine, normal, or localized. They usually affect few consumers Utilities plan for minor emergencies and should have staff and material available to take care of them. If resolved quickly, minor emergencies will not become major emergencies.

Major emergencies. Major or extraordinary emergencies are disasters that affect an entire or large portions of a water system, lower the quality and quantity of the water, and put the health and safety of a community at risk. Water utilities infrequently experience major-emergency disasters.

Natural disasters. Natural disasters are caused by natural forces or events that create water utility emergencies. Earthquakes, forest or brush fires, firestorms, hurricanes, tornados or high winds, floods, and other severe weather conditions, such as freezing or drought, are examples

Human-caused disasters. These disasters caused by intentional or accidental acts create water utility emergencies. Human-caused disasters may be the result of employee error, transportation accidents, employee work stoppage, vandalism, civil disorders, terrorism, biological contamination, hazardous chemical spills, equipment failures, explosions and incendiary fires, and nuclear power plant accidents or nuclear bomb blasts.

Lifeline concept. Lifelines are the infrastructure of networks and facilities that provide essential services to citizens, businesses, and industry (Oregon Seismic Safety Policy Advisory Commission 1992). Lifelines are necessary for disaster recovery. Lifelines include utilities such as water, wastewater, electric, gas, and fuel. Transportation networks, communication systems, medical-care facilities and equipment, fire and police facilities and equipment, and emergency operations centers can also be considered lifelines.

HOW TO USE THIS MANUAL

Planning for disaster may at first seem difficult because it is planning for the unpredictable. For example, despite steady progress in earthquake prediction and