SECTION I
INTRODUCTION

During the Michoacan earthquake of September 19, 1985, the water supply and distribution systems of Metropolitan Mexico City were severely damaged. The disaster left an estimated 5.3 million people without water, a condition never previously experienced in a major city.

Damage to above ground structures was of enormous proportions, capturing most of the international interest. However, the amount of physical damage to the water system as well as the effects this damage had upon the population also represent a very important issue. It is quite possible that catastrophic consequences would have resulted if adequate actions had not been taken. This fact makes evident the necessity of investigating and learning from the experience of Mexico City. Through an analysis of this event, the main factors involved in the seismic vulnerability of water systems can be understood, problem areas and solutions can be identified, and recommendations for the seismic design of new systems and the upgrading of the existing systems can be proposed.

This report presents a thorough investigation of the available information on underground lifeline damage caused by the Michoacan earthquake in both the epicentral region and in Metropolitan Mexico City. For Mexico City, information is presented for the Federal District as well as the part of the city within the State of Mexico. The resulting reduction in supply and distribution capability as well as some of its effect on the population are given. Statistics on breaks/leaks occurring in aqueducts, distribution networks and and service connections are presented. Where appropriate, observed damage is correlated with local soil conditions and earthquake characteristics. The available information is presented and general conclusion regarding water system seismic vulnerability are drawn.