Figure 3-10: A main road between Cairo and Asiot settled about 0.5 meters due to lateral spreading.

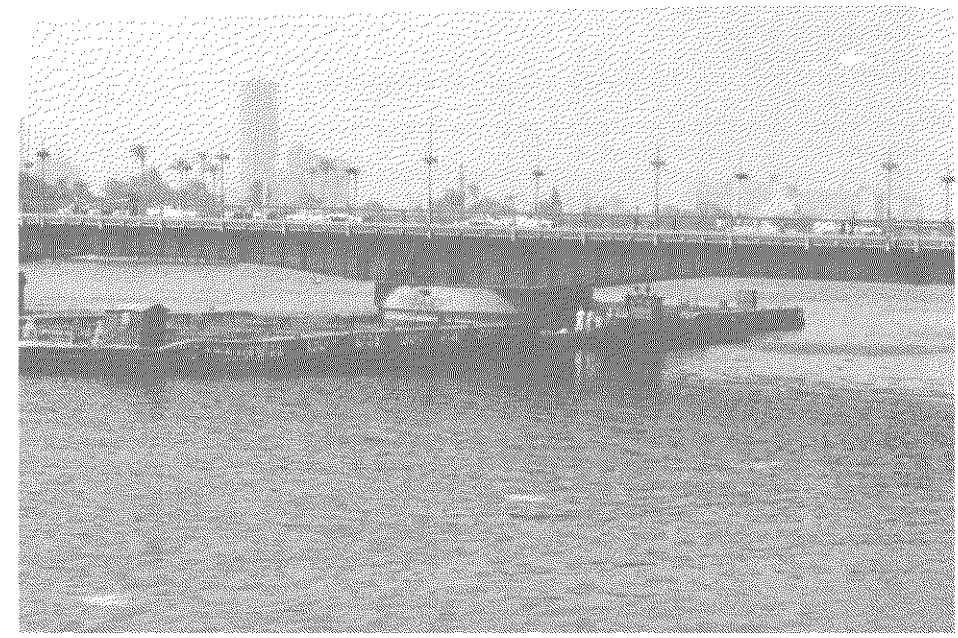

Figure 3-11: An old steel girder bridge with concrete deck lost part of the concrete deck.

Figure 3-12: The roofing system of this elevated water tank in the City of Giza was damaged during the earthquake.

Electric System

The primary source of power generation in Cairo is hydroelectric plants located at the High Dam (about 750 km from the epicenter). Long-distance transmission is by a system of 500-kilovolt lines and primary substations. Primary substations step power down to 230, 115, and 69 kilovolts for local transmission.

Experience from past earthquakes has shown that high-voltage substations are normally the weak link in earthquakes. The tall ceramic columns on high-voltage switchyard equipment have a tendency for brittle fracture and collapse. Additional problems are caused by the interaction of ceramic columns through rigid busbar connections, or by loads imposed on ceramic columns by *cable whip* from overhead lines.

The electric system in Cairo performed well during the earthquake. For most of Cairo, electricity was not lost during or after the earthquake. Some villages around Cairo lost power for few hours. A 115-kilovolt substation a few kilometers from the village of El-Aiyat had very minor ceramic damage. (Author's personal observation.)

Telecommunication System

In general, the telephone system performed well during and after the earthquake. The flood of calls that normally follow an earthquake immediately overloaded the system. Some private phone lines were temporarily blocked in order to free access to emergency lines such as hospitals, fire stations, or police headquarters. Some batteries fell off their racks in the Local Exchange Carrier (LEC) and Inter Exchange Carrier (IEC) telephone switching centers in Cairo, which caused loss of telephone lines in some areas of Cairo. (Personal communictaions, Telephone Company employees.)