



EARTHQUAKE HAZARD STUDY for the Corning Taichung and Tainan Plants

PROJECT DESCRIPTION

There are two Corning plants located in Taiwan. The first, the one in Taichung City, is located on the western side of the island, close to the center of the island. The second, the one in Tainan, is located close to the western coast in the lower fourth of the island. Multiple possible seismic sources are close to the sites, and pose a seismic hazard. A study was conducted to gather information about the seismic hazard that different sources pose to the site.

THE SOLUTION

Earth Consultants International conducted an extensive search and review of literature, compiled available data, and consulted with Taiwanese colleagues and international scientists that are actively studying the faults in the area. We also used a database created by the Central Geologic Survey of Taiwan to identify and characterize faults that have the potential to generate earthquakes that could damage the plant site, and placed the faults into a probabilistic matrix. We considered historical earthquakes recorded over the past century and paleoseismic data on faults creating possibly damaging earthquakes, as well as network seismology from the Central Weather Bureau and crustal strain measured by GPS studies.

THE RESULTS

Through our efforts we identified a total of twelve faults that pose a risk of damaging the two sites. Even though they are a little over 150 km away from each other, there are multiple faults that pose a risk to both sites. All of the data collected is summarized in the tables below and to the right.

Fault Name	Fault Type	Slip Rate (mm/yr)	EQ Magnitude	Recurrence Intervals	Most Recent EQ
Changhua fault	R	16.3 ± 4.1	7.1-7.4	300-400	1848 ?
Chelengpu fault	R	12.9 ± 4.8 16.3 ± 4.1	7.6	300-400	1999
Chukou fault	R	10-15	7.6	300-400	n/a
Tuntzuchia fault	SS	10	7	200	1935
Sanyi fault	R	8-16	7	n/a	n/a
Shuangtung fault	R	0-8	>7	400	n/a
Tainan fault (north)	R	16	7.5	200	n/a

Table 1 (above): Principal seismic sources within 50 km of the Corning Taichung City Plant Site. Fault type: SS: strike slip, R: reverse, N: normal, NA: information not available

Table 2 (right): Principal seismic sources within 100 km of the Corning Tainan City Plant Site. Fault type: SS: strike slip, R: reverse, N: normal, NA: information not available

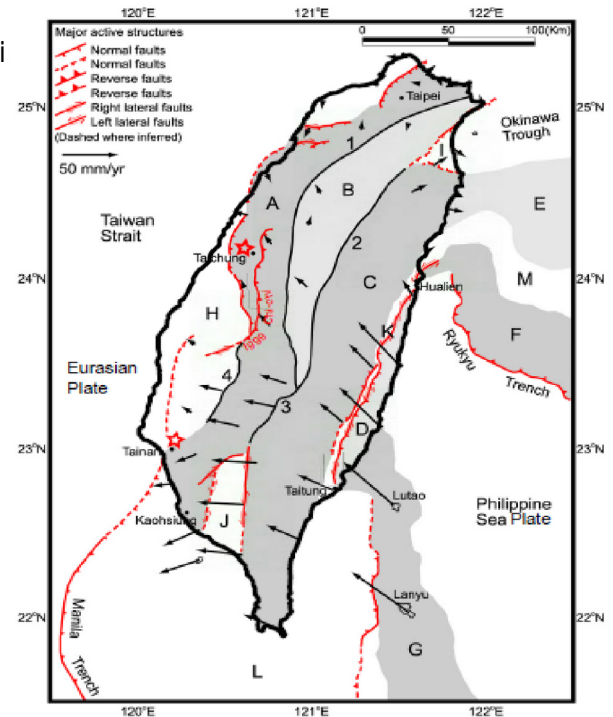


Figure 1 (above): Neotectonic map of Taiwan. The two plant sites are located with the red star. Arrows show velocity vectors measured by GPS data normalized relative to the relatively stable Eurasian Plate

Fault Name	Fault Type	Slip Rate (mm/yr)	EQ Magnitude	Recurrence Intervals	Most Recent EQ
Chaochou fault	R	25	7.7	300-400	n/a
Onland portion only	SS/R	25	7.1		
Connecting with Hengchun fault	SS/R	25	7.3		
Connecting with offshore fault	R/SS	25	7.3		
Chelengpu fault	R	12.9 ± 4.8	7.6	300-400	1999
Chukou fault	R	10-15	7.6	300-400	n/a
Hsinhua fault	SS	9.7±4.7	6.8	200	1946
Manila Trench	R	40	7.7	200	n/a
Meishan fault	SS	10	7	200	1906 & 1999
Tainan fault (south)	R	16	7.7	200	n/a
Tainan fault (north)	R	16	7.5	200	n/a

