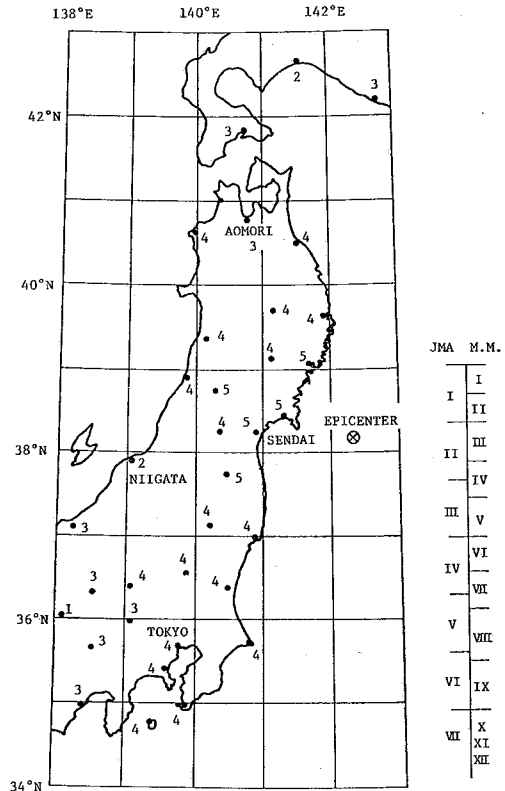


NEWS

\* Professor Shibata attended the Seminar on Probabilistic Seismic Analysis of Nuclear Power Plants held by BAM in Berlin from Jan. 16 to 19, 1978. This seminar was planned by Professors Jeager, Cornell, Newmark and Vanmarcke and the case of Diablo Canyon Station on the west coast of the United States was discussed.

\* A destructive earthquake of magnitude 7.4 struck the northern portion of the Honshu Island at 17:14 (JST) on June 12, 1978. According to the Japan Meteorological Agency, the epicenter was about 100 km to the east of the city of Sendai (142°10'E and 38°09'N) and the focal depth was 40 km. The dimensions of the causative fault plane were estimated as 30 x 80 km, with its longer side approximately in the east-west direction (Seno, T., et al., 1978). Since the reported epicenter is located near the eastern edge of this source area, the shortest distance from Sendai to the source area was 50 to 60 km. The intensity in the Sendai area was V by the JMA scale, which roughly corresponds to VIII on the Modified Mercalli scale. The peak horizontal acceleration recorded on the ground surface or in building basement in Sendai and its surrounding area generally varied between 200 and 300 cm/s<sup>2</sup>.



Sendai, the 14th largest city in Japan with a population of 617,000 on 237 km<sup>2</sup>, was situated almost at the center of the JMA intensity V area, and a variety of damage was sustained by a number of different structures and systems. The overall damage has been estimated at some ¥200 billion, and more than sixty percent of this was sustained in Sendai, where some 700 homes have been reported to have totally collapsed, some 3,400 homes appreciably damaged and some 74,000 homes had minor damage. Six reinforced concrete buildings and nine steel frame structures have been reported to have wholly collapsed. Damage to highway and railway structures was also extensive. Twenty-eight persons lost their lives (thirteen in Sendai) because of damage caused by the earthquake. It was especially noted that sixteen

were killed by collapsing gatepost, masonry or concrete-block walls.

One of the particular features of the 1978 Miyagiken-Okai earthquake was, however, the damage sustained by various lifeline utility systems in the city of Sendai.

Damage caused by this earthquake was surveyed by a number of the members in the Institute of Industrial Science. A paper by Tatsuoka et al. in this Bulletin is one of the outcomes of the ERS members' efforts.

- \* Professor Shibata attended the 6th European Conference on Earthquake Engineering held in Dubrovnik, Yugoslavia. He also attended the 5th Regional Seminar on Earthquake Engineering held in Primorsko, Bulgaria in September.
- \* A high peak velocity shaking table was developed by Professor Shibata's Laboratory in cooperation with the Hitachi Co., Ltd. This project was financially supported by the grant of the Ministry of Education. The shaking table was designed to produce a maximum velocity of some 250 cm/s but preliminary tests have shown that it can even produce a velocity of about 500 cm/s. Although the size (200x200mm) and the capacity (20kg) of the table is small, it is expected that information on the failure mechanism of brittle structural components may be gained by using this new apparatus.
- \* Professor Kubo attended the International Seminar on Earthquake Hazards and Insurance held in Mexico City, Mexico, from December 4 to 8, 1978. This Seminar was organized by the United Nations Educational, Scientific, and Cultural Organization. Some 40 participants from various countries in the world were invited by UNESCO.