

# EARTHQUAKES

## Performance of Lifelines

### PASADENA EARTHQUAKE - DECEMBER 3, 1988

Most of the south coastal plain of Southern California, a 40,000 square kilometer (15,000 square mile) area with a population of 10 to 15 million people, was jolted by an earth-

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each, including tax, handling and shipping (UPS or First Class Post in North America; airmail post outside North America). However, prior to publication, an EERI member may order one copy for **personal use** for \$75 each (prepaid). Institutions may place a prepaid, pre-publication order at \$150 each. Contact SSA Headquarters at 201 Plaza Professional Bldg., El Cerrito, CA 94530; (415) 525-5474 for information and institutional order forms. Prepay for the first volume by April 1, 1989, and for the second by October 1, 1989.

### NGDC Data Dissemination

The National Geophysical Data Center (NGDC) has produced 2 fliers (SE-0303, SE-0305) dated October, 1988, describing digital strong-motion data available for dissemination:

SE-0303: Digital Strong-Motion Data for the Whittier, California, Earthquake of October 1, 1987. This describes the first sets of data from the USGS NSMIN program and CDMG's SMIP program.

SE-0305: USSR Aftershock Digital Strong-Motion Data. This describes aftershock sequences from Gazli, March 19, 1984, and Pap, February 17, 1984.

Write NGDC, NOAA E/GC1, 325 Broadway, Boulder, CO 80303 for fliers; USGS Code 977, 345 Middlefield Rd., Menlo Park, CA 94025 and CDMG CSMIP, 630 Bercut Dr., Sacramento, CA 95814 for data reports; and subsequently NGDC for tapes.

quake early Saturday morning, December 3, 1988. The earthquake occurred at 3:38 AM, PST, and had a magnitude of 5.0. It was centered at the junction of two faults, at a depth 18 kilometers (11 miles), in the vicinity of downtown Pasadena. This is an urban area, with many lifeline facilities, near the cities of South Pasadena and Los Angeles.

Earthquake damage was minor and limited to broken windows, dumping shelves and minor power outages. All lifelines (water, energy, communications and transportation) systems performed satisfactorily for this event. Essentially no structural damage occurred to any lifeline system and only short duration power outages occurred due to the automatic tripping of electric relays which were reconnected within a few minutes. Telephone service experienced no overload situation, because of the time of the event in the early morning.

An electrical isolated post insulator was broken at a sub-station in the Eagle Rock area. There was no disruption of service, because of the redundancy of the sub-station. In the Van Nuys area electric service was out for approximately 90 minutes for approximately 1,000 customers due to a sub-station requiring an inspection before reconnecting the relay. There was no damage to the facility.

The good performance of lifelines in this moderate-sized event is due in part to the lessons learned from past earthquakes, especially the 1971 San Fernando and 1987 Whittier Narrows earthquakes.

This preliminary investigation of the performance of lifelines during the Pasadena earthquake was a cooperative effort between the ASCE-Technical Council on Lifeline Earthquake Engineering (TCLEE) and the EERI-Learning from Earthquakes (LFE) Project. Jack Meehan is Project Manager of EERI-LFE, and Anshel Schiff is chairman of the TCLEE Investigation Committee. The LFE Project is

funded by the National Science Foundation.

--LeVal Lund (EERI, 1973)

The Preliminary Determination of Epicenters (PDE) adds: Dec. 3, 1988, 11:38 Gmt, 34.142N, 118.160W, magnitude (local, Richter) 5.0 (both PAS and BKY).

## LEARNING FROM EARTHQUAKES SEMINAR

A seminar on **Learning from Earthquakes, Lessons Learned to Reduce Earthquake Hazards** will be held at the National Academy of Sciences Auditorium in Washington, D.C. on March 9 and 10, 1989. Jointly organized by EERI's Continuing Education Committee and the federal Interagency Committee for Seismic Safety in Construction (ICSSC), the multidisciplinary presentations will be especially oriented toward the information needs of technical and policy-making staff of federal government agencies involved in earthquake hazards reduction. The seminar is open to the participation of all interested persons. For further information, contact: Charles Yancey, ICSSC, National Institute of Standards and Technology, Building 226, Room B150, Gaithersburg, Maryland 20899, phone (301) 975-6073; or Maurice S. Power, Geomatrix Consultants, One Market Plaza, #717 Spear Street Tower, San Francisco, California 94105, phone: (415) 957-9557.

## CUREe Membership Meeting

The first annual meeting of members of CUREe will be held during the EERI 1989 annual meeting. The details are: Friday, February 10, in the Goldrush Ballroom, Golden Gateway Holiday Inn, from 3:30 to 4:30 pm.

Business at the meeting includes: (1) nominations for four at-large Directors to the Board from Participating Universities, (2) a progress report and (3) a call for program suggestions. All members are asked to attend.

--Bruce A. Bolt, Secretary