

GUIDE DOCUMENT
EARTHQUAKE VULNERABILITY OF WATER SYSTEMS

EARTHQUAKE ENG. DIV.
Univ. of Calif. - 453 R.F.S.
1301 So. 46th St.
Richmond, CA 94804-4698 USA
(510) 231-9403

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by:

**KENNEDY/JENKS CONSULTANTS
ENGINEERS AND SCIENTISTS
530 South 336th Street
Federal Way, Washington 98003**

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**Workshops hosted by subsections
of the Pacific Northwest
American Water Works Association**

EARTHQUAKE VULNERABILITY OF WATER SYSTEMS AGENDA

24 June 1993

8:00-8:30	Opening and Introduction
8:30-9:00	Seismicity and Earthquake Hazards
9:00-9:15	Break
9:15-10:45	Water System Component Vulnerability Assessment, Mitigation, and New Design
10:45-11:00	Break
11:00-11:30	System Vulnerability Assessment
11:30-12:00	Earthquake Hazard Information Sources
12:00-1:00	Lunch
1:00-2:00	Example of System Vulnerability Assessment/Hazard Mapping Application
2:00-2:30	Emergency Planning
2:30-2:45	Break
2:45-3:45	Breakout Session - Assessment of Workshop Participant's Systems
3:45-4:00	Workshop Evaluation/Closing

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Much of the text in this document was originally developed by the author in previous publications, and by others in publicly funded projects. Some of the hazard description text in Chapter 2.0, Earthquake Hazards, and the dam subsection in Chapter 3.0 were developed in the Federal Emergency Management Agency publication, *A Model Methodology for Assessment of Seismic Vulnerability and Impact of Disruption of Water Supply Systems*, and modified for this document.

Many of the photographs included in this document were taken by the author and other members of TCLEE during various earthquake reconnaissance trips. Expenses for those trips have been funded by NCEER, ASCE, and National Science Foundation (NSF) through the Earthquake Engineering Research Institute. Many of the photograph captions reference earthquake locations. Specific earthquakes referenced by those locations and their respective year of occurrence, magnitude, photographer, and reconnaissance trip funding source are listed below. For earthquakes listed with no photographer references, either no photographs are included for those earthquakes, or the photographer is unknown.

- Luzon, (Dagupan, Baguio), Philippines, 1990, Magnitude 7.8
Photographs - D. Ballantyne, NCEER, ASCE, EERI/NSF
- Limon (Moin), Costa Rica, 1991, Magnitude 7.5
Photographs - D. Ballantyne, ASCE
- Erzincan, Turkey, 1992, Magnitude 6.8
Photographs - D. Ballantyne, NCEER, ASCE
- Landers/Big Bear, California, 1992, Magnitude 7.4
Photographs - M. O'Rourke, NCEER
- Cape Mendocino, California, 1992, Magnitude 7.1
- Scotts Mills, Oregon, 1993, Magnitude 5.6
Photographs - W. Elliott, DOGAMI.
- Seattle, Washington, 1965, Magnitude 6.5
Photographs - Seattle Water Department
- San Fernando, California, 1971, Magnitude 6.5
- Coalinga, California, 1984, Magnitude 6.7
- Whittier, California, 1987, Magnitude 5.9
- Loma Prieta (San Francisco), California, 1989, Magnitude 7.1
Photographs - D. Ballantyne, TCLEE, funding ASCE, NSF

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