

Proceedings of
ATC-35 Seminar on New Developments in
Earthquake Ground Motion Estimation and
Implications for Engineering Design Practice

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by

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Preface

In January and February 1994, the Applied Technology Council (ATC) conducted a series of five regional seminars on "New Developments in Earthquake Ground Motion Estimation and Implications for Engineering Design Practice." The seminar series served as the initial activity in a larger U. S. Geological Survey-sponsored project to "Transfer U. S. Geological Survey Research Results into Engineering Design Practice" (ATC-35 Project).

The five initial seminars, designed for practicing structural and geotechnical engineers, were conducted in Los Angeles, California (January 26, 1994), San Francisco, California (January 27, 1994), Seattle, Washington (February 2, 1994), New York, New York (February 9, 1994), and Memphis, Tennessee (February 10, 1994). The purpose of each seminar was to provide comprehensive, but practical *region-specific* information on earthquake potential and the characteristics of expected ground shaking, with a special emphasis on issues relevant to the determination and mapping of design ground motions.

This report contains the technical papers presented at the initial five seminars. Specific paper topics included:

- Regional earthquake risk (focused on the region in which the seminar was conducted);
- Strong ground motion estimation (new techniques for estimating ground motions as a function of earthquake source, travel path, and site parameters, with emphasis on problems specific to the particular region); and

- Implications of new knowledge and new developments for engineering practice (specifically applicable to geotechnical engineering and structural engineering--the design of buildings and bridges).

The complete program for each seminar location, which contains paper titles, authors and panelists, is provided in Appendix A.

Applied Technology Council gratefully acknowledges the many individuals who contributed to the success of the seminar series. Maurice Power, Project Director and Co-Principal Investigator, Charles C. Thiel, Co-Principal Investigator, and Chris D. Poland, Structural Engineering Consultant, developed the seminar program and identified paper authors. Steering Committee members Arthur D. Frankel, Thomas H. Heaton, Thomas L. Holzer (USGS Project Officer), I. M. Idriss, Klaus H. Jacob, William B. Joyner, Helmut Krawinkler, Bijan Mohraz (ATC Board Representative), Allan R. Porush, Paul G. Somerville, Randall G. Updike, and Nabih Youssef provided overall guidance and direction. The affiliations of these individuals are provided in Appendix B.

Applied Technology Council also gratefully acknowledges the ATC staff for their assistance in planning and conducting the seminar. Patty Christofferson, Manager of Administration and Public Relations, selected the seminar meeting sites and organized the publicity effort. Staff members Karen Johnson and Bernadette Mosby distributed announcements and registered participants.

Christopher Rojahn
ATC Executive Director

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