

# Safer at home in earthquakes: a proposed earthquake safety program



**ATC** Applied Technology Council

Funded by  
City of Los Angeles, Department of Building and Safety  
California Office of Emergency Services



# **ATC-50-2**

## **Safer at Home in Earthquakes: A Proposed Earthquake Safety Program**

by

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Funded by

CITY OF LOS ANGELES,  
DEPARTMENT OF BUILDING AND SAFETY  
Los Angeles, California  
Nick Delli Quadri, Project Officer  
and  
CALIFORNIA OFFICE OF EMERGENCY SERVICES  
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# Preface

In September 1998 the Applied Technology Council (ATC) was awarded a contract by the City of Los Angeles, Department of Building and Safety, to develop and test a series of standardized procedures for the voluntary seismic evaluation and rehabilitation of detached single-family wood-frame dwellings (ATC-50 project). The project was prompted by high economic losses resulting from damage to single-family wood-frame dwellings during the 1994 Northridge earthquake. The concept for the project was conceived by the Financial Services Subcommittee of the City of Los Angeles Mayor's Blue Ribbon Panel for Seismic Hazard Reduction, which included representation from the banking and insurance industries.

The project contract called for ATC to:

(1) develop and test a seismic performance grading system for detached single-family wood-frame dwellings that reflected expected economic losses in future damaging earthquakes; (2) develop and test seismic rehabilitation guidelines for detached single-family wood-frame dwellings that would enable a homeowner to improve the seismic grade; (3) prepare a set of examinations for certification of home inspectors, contractors, and design professionals who have been trained to implement the procedures developed under the project, and (4) plan and conduct a seminar to introduce the ATC-50 project products to inspectors, contractors, and design professionals in the Los Angeles area. As part of the project, ATC was also asked to provide guidance on how to develop and implement a market-driven, incentives-based program to encourage homeowner use of the seismic assessment and seismic rehabilitation procedures developed under the project.

This report, ATC-50-2: *Safer at Home in Earthquakes: A Proposed Earthquake Safety Program*, provides recommendations for the development and implementation of a market-driven, incentives-based program to encourage homeowners to have their homes evaluated, and rehabilitated if necessary, using the procedures developed under the ATC-50 project.

The companion ATC-50 report, *Simplified Seismic Assessment of Detached, Single-Family, Wood-Frame Dwellings*, provides inspection procedures and a four-page Simplified Seismic Assessment Form to evaluate detached, single-family, wood-framed dwellings, and to assign to each a seismic grade. Another companion report, ATC-50-1, *Seis-*

*mic Rehabilitation Guidelines for Detached, Single-Family, Wood-Frame Dwellings*, contains prescriptive methods, simplified engineering methods, and fully engineered methods that, if implemented, allow a homeowner to improve the seismic grade.

All three reports were initially completed in 2002 in time to be made available for an introductory training seminar in Los Angeles on the ATC-50 project products. The second printing of this report in 2007 contains minor edits, updated internet references and contact information, and a detailed description of the ATC-50 Simplified Seismic Assessment Form (new Appendix A).

Funding for the ATC-50-2 report was provided by the City of Los Angeles and by a Federal Emergency Management Agency Hazards Mitigation Grant from the California Governor's Office of Emergency Services.

The ATC-50-2 report was prepared by Thomas L. Tobin, consultant to ATC. Ronald T. Eguchi served as Project Director, and overview and guidance were provided by an advisory group consisting of Nick Delli Quadri, Eugene Lecomte (deceased), Mark Leonard, Scott McGill, William Petak, and Perry Singerman. The affiliations of these individuals are provided in the Project Participants List.

ATC gratefully acknowledges the helpful assistance provided by members of the Steering Committee for the ATC-50 project: Susan Dowty, (Chair), S.K. Ghosh Associates, Inc.; John Brown, California Real Estate Inspection Association; Dave Carey, Fannie Mae (Washington DC); Kenneth Cooley, State Farm Insurance; Karl Deppe (retired), Los Angeles Department of Building and Safety; Mike Edwards, California Department of Insurance; Mike Grottkau, California Earthquake Authority; Do Kim, Institute for Business and Home Safety; Eugene Lecomte (deceased), Insurance Industry Consultant; Richard McCarthy, California Seismic Safety Commission; Tim McCormick, City of Santa Monica; Duane McCutcheon, California Real Estate Inspection Association; Dave Nelson, International Conference of Building Officials; Jeff Paggi, Farmers Insurance; William Petak, Univ. of Southern California; Patricia Schumate, Freddie Mac; Earl Schwartz, Structural Engineers Association of California; and Barbara Zeidman, Fannie Mae (Los Angeles).

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