Final Project Summary — PEER Lifelines Program

Project Title—**ID Number**	*Update Ground Motion Database with Data from Turkey and Taiwan*—**1E01**		
Start/End Dates	06/1/00 — 6/30/01	Budget/ Funding Source	$30,000 / PG&E-CEC
Project Leader (boldface) and Other Team Members	**Walter Silva (PEA)**		

1. Project goals and objectives

This project was to provide additional strong motion data for the PEER NGA project. Specifically to process and make available data from the recent Chi-Chi, Taiwan as well as Koaceli and Duzce, Turkey earthquakes.

2. Benefits of the results of this project to develop technologies and protocols to mitigate the vulnerability of electric systems and other lifelines to damage directly and indirectly caused by earthquakes. Also, benefits to develop assessment techniques to evaluate damage to electric systems caused by earthquakes and to assess fiscal impacts due to the loss of electric service to the community.

Data from these earthquakes increased five fold the world wide recordings of earthquakes with magnitude greater than 7 and distances within 20 km, typical design cases for California.

3. Brief description of the accomplishments of the project

Addition of some 400 processed recordings to the PEER strong motion database to constrain near fault motions at large magnitude as well large distance fall-off of motions, both necessary for the PEER NGA project.

4. Describe any instances where you are aware that your results have been used in industry

Data set of processed records have been used on several projects to characterize time histories for engineering design.

5. Methodology employed

Records were processed to remove instrument response and both high and low-frequency noise.

6. Other related work conducted within and/or outside PEER

This data set complements a larger data set which comprises the PEER strong motion data base, also developed by Pacific Engineering for PEER.

7. Recommendations for the future work: what do you think should be done next?

Data from subduction zone earthquakes as well as eastern North America should be added to have, in one place, a complete repository of consistently processed data of strong ground motions.

8. <u>Author(s), Title, and Date</u> for the final report for this project

Walter Silva

Update Ground Motion Database with Data from Turkey and Taiwan.