

MAY 02 1989

MEMORANDUM FOR: Ronald L. Ballard, Chief
 Technical Review Branch, DHLWM

THRU: Philip S. Justus, Section Leader
 Geology/Geophysics Section, HLGP

FROM: Michael E. Blackford
 Geology/Geophysics Section, HLGP

SUBJECT: TRIP REPORT- ATTENDANCE AT 1989 EARTHQUAKE ENGINEERING
 RESEARCH INSTITUTE ANNUAL MEETING

LOCATION: Gateway Holiday Inn, San Francisco, California

DATES: February 9-11, 1989

BACKGROUND AND PURPOSE:

The Earthquake Engineering Research Institute (EERI) holds an annual meeting to provide an opportunity for scientists and engineers to report on their investigations and research related to earthquakes of significant engineering and social consequence. In addition, EERI sends teams of investigators to sites of earthquakes of engineering significance shortly after their occurrence. The results of these investigations are presented in timely briefings at other times throughout the year as part of the EERI "Learning from Earthquakes" program.

As DHLWM seismologist I attended the annual meeting for the purpose of keeping abreast of ongoing studies of strong ground motion and its effects on engineered structures. I also attended a meeting of the EERI Tsunami Committee in my capacity as NRC ERT tsunami evaluator in order to ascertain whether any actions of this committee would affect tsunami contingency plans for west coast nuclear power plants.

MEETING FORMAT:

The meeting was divided into three themes and each of the themes was divided into topics. Speakers made their presentations relating to a particular topic and then written questions from the audience were fielded by the speakers. A copy of the program is attached to this memorandum.

NRC STAFF IMPRESSIONS:

Because of the excellent organization of this meeting a large amount of information was presented in a relatively short time. The speakers adhered to

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the schedule so it was possible to skip some discourses in order to view the poster presentations. Also the banquet and luncheons, which were included in the registration fee, provided additional time for presentations and EERI business.

Topics of NRC interest, in particular, included: California Preparednes - A Status Report, under the Earthquake Preparedness and Response Theme, and Interpretation and Limitation of Strong-Motion Data for Design, under the Special Sessions Theme. In his talk on the implications of revised USGS estimates of earthquake occurrence probabilities, Lloyd Cluff indicated that the northern portion of the Hayward fault currently presents the greatest hazard for the San Francisco Bay Area and that the Coachella Valley segment of the San Andreas fault presents the greatest hazard for parts of southern California. Bruce Bolt's presentation on the recording of strong ground motion by dense arrays of accelerometers highlighted the capability of such data to contribute to the resolution of a number of questions concerning the complex wave interaction affecting structures in the near-source region.

The Tsunami Committee meeting was attended by only one other person other than Jane Preuss, who is the committee chair, and myself. Jane Preuss discussed the status of an EERI tsunami response manual that is under preparation at this time. I will attempt to have Ms. Preuss send me a draft copy for possible NRC review.

REFERENCES:

Abstracts of the author's presentations, together with various EERI committee reports, committee rosters, and a participant list were provided to the attendees in a notebook entitled "1989 EERI Annual Meeting". My copy of this notebook is available at my work station.


 Michael E. Blackford
 Geology/Geophysics Section, HLGP

Attachment
As Stated

DISTRIBUTION:

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**EERI ANNUAL MEETING
THURSDAY, FEBRUARY 9**

**THEME I: MEXICO AND CHILE RESEARCH - IMPLICATIONS FOR DESIGN,
PLANNING, AND RESPONSE**

- 8:30-9:00 a.m.
Emerald Ballroom
Lobby Level
- Welcome - **FRANK E. McCLURE**, President
THALIA ANAGNOS, Annual Meeting Program Chair
ROBERT D. HANSON, President-Elect
- 9:00-10:30 a.m.
Emerald Ballroom
Lobby Level
- Topic: *What Has the Structural Behavior of Buildings Told Us About Our Building Codes?*
Organizer: **VITELMO BERTERO**, University of California, Berkeley
- METE SOZEN**
University of Illinois
VITELMO BERTERO
University of California,
Berkeley
- Good Performance of Redundant and Shear Wall Buildings in Chile
Problems with Flexible Buildings in Mexico City
- 10:30-11:00 a.m.
- Break - Lower Level
- 11:00-12:30 p.m.
Emerald Ballroom
Lobby Level
- Topic: *Strong Ground Motion in Mexico City and Chile - Are There Applications to U.S. Design?*
Organizer: **NEVILLE DONOVAN**, Dames and Moore
- RICARDO DOBRY**
Rensselaer Polytechnic
G. RODOLFO SARAGONI
University of Chile
H. BOLTON SEED
University of California,
Berkeley
- Geotechnical Aspects of Mexico City Response
Chile Earthquake - Impact on Building Codes
Need for an S_r Factor?
- 12:30-2:00 p.m.
Gold Rush Room
Lower Level
- LUNCHEON**
Speaker: **J. MARK LOIZEAUX**, Loizeaux Group International
Topic: *Demolition by Explosives in Mexico City - An Investigative Opportunity?*
- 2:00-3:30 p.m.
Emerald Ballroom
Lobby Level
- Topic: *Societal Aspects of the Mexico and Chile Earthquakes*
Organizer: **PAUL FLORES**, Southern California Earthquake Preparedness Project
- JELENA PANTELIC**
NCEER
E. L. QUARANTELLI
University of Delaware
MICHAEL E. DURKIN
Michael E. Durkin & Associates
- Reconstruction Housing - Opportunity and Success
Short-Run and Long-Run Individual Responses to the Mexico Earthquake
Injuries Caused by Building Damage
- 3:30-4:00 p.m.
Emerald Ballroom
Lobby Level
- WINNER OF THE FIRST ANNUAL EERI STUDENT PAPER COMPETITION**
JOHN OSTERAAS, Stanford University
Topic: *Behavior of Steel Buildings in the 1985 Mexico Earthquake*
- 4:00-6:00 p.m.
Redwood Room and
Washington Room
Lower Level
- POSTER SESSION**
Focus on Latest Mexico and Chile Research
(Posters and software displays may be viewed all day Friday in Redwood Room.)

**EERI ANNUAL MEETING
FRIDAY, FEBRUARY 10**

7:30-8:45 a.m.

Breakfast Committee Meetings - Lower Level

9:00-10:30 a.m.

**Emerald Ballroom
Lobby Level**

Topic: *Structural Repair and Strengthening of Buildings in Mexico and Chile*
Organizer: LORING WYLLIE, JR, H. J. Degenkolb Associates

JESUS IGLESIAS

UAM, Azcapotzalco

JAMES JIRSA

University of Texas

LORING WYLLIE, JR

H. J. Degenkolb Associates

Post-Earthquake Reconstruction in Mexico City

Test Results of Building Repair Schemes: Implications for U.S. Practice

Post-Earthquake Reconstruction in Chile

10:30-11:00 a.m.

Break - Lower Level

THEME II: EARTHQUAKE PREPAREDNESS AND RESPONSE

11:00-12:30 p.m.

**Emerald Ballroom
Lobby Level**

Topic: *California Preparedness - A Status Report*

Organizer: L. THOMAS TOBIN, Seismic Safety Commission

LLOYD CLUFF

Pacific Gas & Electric Co.

JAMES GOODFELLOW

Seismic Safety Commission

FRED TURNER

Seismic Safety Commission

BRIAN STONER

Seismic Safety Commission

Implications of Revised USGS Estimates of Earthquake Occurrence Probabilities

California Earthquake Hazard Reduction Program

Senate Bill 547 - Unreinforced Masonry Buildings

California Seismic Safety Commission Research Plan

12:30-2:00 p.m.

**Gold Rush Room
Lower Level**

LUNCHEON - ANNUAL BUSINESS MEETING

Speaker: WALTER HAYS, U.S. Geological Survey

Topic: *U. S. National Decade for Natural Disaster Reduction*

2:00-3:30 p.m.

**Emerald Ballroom
Lobby Level**

Topic: *After the Shaking Stops - Problems, Needs, and Solutions*

Organizer: CHARLES SCAWTHORN, EQE Incorporated

FRED KRIMGOLD

Virginia Polytechnic

ROBERT REITHERMAN

The Reitherman Company

FRANK BLACKBURN

San Francisco Fire

Department

Search and Rescue in Collapsed Buildings

Earthquake-Induced Hazardous Material Releases

**San Francisco Fire Department Auxiliary Water Supply System:
A Unique Solution to Fire Following Earthquake**

3:30-4:30 p.m.

Lobby Level

Airport Shuttle Arrangements

4:00-5:30 p.m.

**Main Entrance
Van Ness Avenue**

FIELD TRIP - Buses to San Francisco Waterfront

San Francisco Fire Department Pump Station #2

Emergency Response Demonstration

6:00-9:30 p.m.

**Emerald Ballroom
Lobby Level**

RECEPTION AND BANQUET

Speaker: WILLIAM MOORE, Dames and Moore

Topic: *A Spoken History of Earthquake Engineering*

**EERI ANNUAL MEETING
SATURDAY, FEBRUARY 11**

7:30-8:45 a.m.

Breakfast Committee Meetings - Lower Level

THEME III: SPECIAL SESSIONS

9:00-10:30 a.m.
Emerald Ballroom
Lobby Level

Topic: *Interpretation and Limitation of Strong-Motion Data for Design*
Organizer: EERI STRONG-MOTION INSTRUMENTATION COMMITTEE

BRUCE BOLT
University of California,
Berkeley
MEHMET CELEBI
U.S. Geological Survey
ANSHEL SCHIFF
Stanford University
ANTHONY SHAKAL
California Mines/Geology

Dense Array Free Field Data

Dense Array Structural Data

Strong-Motion Data

Variability of Time Histories and Spectra Due to Processing of Data

10:30-11:00 a.m.

Break - Lower Level

10:30-11:30 a.m.
Lower Level

Airport Shuttle Arrangements

11:00-12:30 p.m.
Emerald Ballroom
Lobby Level

Topic: *Experimental Research - Practical Application Is the Goal*
Organizer: EERI EXPERIMENTAL RESEARCH COMMITTEE

STEPHEN MAHIN
University of California,
Berkeley
GARY HART
University of California,
Los Angeles
JAMES KELLY
University of California,
Berkeley
PETER GERGELY
Cornell University
METE SOZEN
University of Illinois

Trends in Experimental Research

Research on the Design of Masonry Structures

The Role of Experimental Research in Validating Base Isolation

Seismic Performance of Lightly Reinforced Concrete Frames

Some Design and Analysis Implications from Experimental Results

12:30-2:00 p.m.
Gold Rush Room
Lower Level

LUNCHEON

Speaker: RICHARD EISNER, Bay Area Regional Earthquake Preparedness Project

Topic: *A Short-Term Earthquake Alert in California - How the Region Responded*

SATURDAY (continued)

2:00-3:30 p.m.
Emerald Ballroom
Lobby Level

KARL DEPPE
Los Angeles Building
Department
DOC NGHIEM
Los Angeles Building
Department
MELVYN GREEN
Melvyn Green & Associates
RAY STEINBERG
Steinberg & Associates

Topic: *Existing Unreinforced Masonry Buildings - The Retrofit Experience*
Organizer: EERI EXISTING BUILDINGS COMMITTEE

Expectations on Survivability of Strengthened URM Buildings

Performance of Retrofitted Buildings During the Whittier Earthquake

Overview of the Problem

The ABK Methodology: An Objective View of an Innovative Approach

ARMENIA EARTHQUAKE UPDATE

3:30-5:30 p.m.
Emerald Ballroom
Lobby Level

Speakers:

Topic: *Briefing by Members of the U.S. Reconnaissance Team*
Organizer: LORING WYLLIE, JR., H. J. Degenkolb Associates

MIHRAN AGBABIAN, University of Southern California - *Codes and Standards*

ROGER BORCHERDT, U.S. Geological Survey - *Seismology*

FRED KRIMGOLD, Virginia Polytechnic Institute - *Search and Rescue*

DENNIS MILETI, Colorado State University - *Emergency Response*

ANSHEL SCHIFF, Stanford University - *Lifelines*

LORING WYLLIE, JR., H. J. Degenkolb & Associates - *Building Performance*

Document Name:
414.8/MB/89/04/25

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Document Comments:
eeri annual meeting trip report