INTRODUCTION

Development of the NEHRP Recommended Provisions
NATIONAL EARTHQUAKE HAZARDS REDUCTION PROGRAM

Instructional Material Complementing FEMA 451, Design Examples

Introduction to NEHRP 8a - 2
San Fernando, 1971

- Damage to Olive View Hospital
  - Stair tower separated from building
  - Near collapse in second story
Responses to San Fernando

- 1972  Workshop - Improve codes
- 1974  SEAOC - Quick Change
  - Higher forces
  - Soil factor
  - Importance factor
- 1974-76  ATC-3 Project
  - Fundamental changes
- 1977  Earthquake Hazard Reduction Act
Creation of NEHRP

• Public Law 95-124: EHRA of 1977
  - “to reduce risks to life and property from future earthquakes in the United States.”
• Construction
• Model codes
• Plus response, recovery, and many other concerns
Principal NEHRP Agencies

• Federal Emergency Management Agency

• National Institute of Standards and Technology (new lead agency)

• United States Geological Survey

• National Science Foundation
ATC-3 Report

- 1978 Publication of ATC / NSF / NBS
- New approaches:
  - Nationwide
  - Probabilistic
  - Inelastic behavior
  - Strength level
  - Nonstructural
  - Existing Buildings
Standards for Structural Design vs. ATC’s Provisions

Coverage of Then Current Standards

Dead
Live
Wind
Earthquake
Snow

Coverage of ATC’s Provisions

Reinforced Concrete
Steel
Lumber
Plywood
Masonry

FEMA Instructional Material Complementing FEMA 451, Design Examples
Building Seismic Safety Council
BSSC

• Private, voluntary
• A council of NIBS
• National forum for issues:
  ▪ Technical
  ▪ Social
  ▪ Economic
• 60+ organizational members
• Consensus process
BSSC Members

Building Community Organizations

Examples:
ACI    AF&PA    AIA    AISC
AISI   AITC     APA    ASCE
ASME   BIA      EERI   ICC
NCMA   NCSEA    NFPA   PCA
SEAOC  TMS
BSSC Organization

MEMBERS

BOARD

COMMITTEES

STAFF
History of *NEHRP Recommended Provisions* for New Buildings

- 1974-78 ATC 3 Tentative Provisions
- 1979-80 Review Committees
- 1981-84 Trial Designs
- 1985 Edition (first edition to be “Recommended”)
Context and Use of the *NEHRP Recommended Provisions*

- Building codes and standards

- Organizations generating standards and model codes

- Role of BSSC
Information Flow Through Building Codes

- Prestandards
- National standards
- Model code
- Building Code
- Design
- Construction
- Research

Information flow diagrams connecting these elements.
Model Code Organizations

- International Conference of Building Officials
  - Uniform Building Code
- Building Officials and Code Administrators
  - National Building Code
- Southern Building Code Congress
  - Standard Building Code
- International Code Council
  - International Building Code
- National Fire Protection Association
  - NFPA 5000