

**ATC/BSSC REGIONAL TRAINING SEMINAR:
NEHRP GUIDELINES FOR THE SEISMIC REHABILITATION OF BUILDINGS
(FEMA 273)
Oakland, California
August 6th and 7th, 1999**

Program

Friday, August 6, 1999, 3:00 p.m. - 7:00 p.m.

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| 1. Introduction
Seminar purpose and agenda; guidelines development process and participants; seminar handouts; companion volumes | 3:00 p.m. | Moderator:
Gerald Brady,
ATC |
| 2. Issues in Seismic Rehabilitation
Why rehabilitate? Historic performance of buildings; their seismic deficiencies; observations; evaluations of four example buildings; average costs. | 3:15 p.m. | Christopher
Poland |
| 3. Overview of the Guidelines—New Seismic Hazard Maps
Purpose; relation to other documents; significant new features — performance levels, rehabilitation objectives, systematic and simplified rehabilitation, and new analysis procedures; new hazard maps; process flow chart. | 4:00 p.m. | Daniel Shapiro |

Coffee Break

4:40 p.m.

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| 4. Simplified Rehabilitation—Overview and Example Applications
Why a simplified method is needed; incorporation of existing evaluation tools; limitations; procedures; value and usefulness. | 4:55 p.m. | Christopher
Poland |
| 5. In-Depth Discussion
Process for choosing systematic rehabilitation; determination of seismic site hazards and as-built conditions; selection of rehabilitation objective and strategy; selection of analysis procedure; modeling; acceptance criteria and design; use of new technologies. | 5:35 p.m. | Daniel Shapiro |
| 6. Systematic Rehabilitation—Basics of Structural Dynamics, Nonlinear Response, and Acceptance Criteria
Earthquake response of building structures; capacity and demand concepts for seismic rehabilitation; seismic analysis in the context of rehabilitation. | 6:15 p.m. | Jack Moehle |

Saturday, August 7th, 1999, 8:00 a.m. – 4:00 p.m.

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| 7. Day 2 Introduction
<i>Guidelines'</i> future development (BSSC case studies, ASCE standard). | 8:00 a.m. | Gerald Brady |
| 8. Systematic Rehabilitation—Analysis Techniques
Using displacements to predict performance; nonlinear behavior; four procedures: linear static, nonlinear static, linear dynamic, and nonlinear dynamic; procedure choice. | 8:10 a.m. | William
Holmes |
| 9. Systematic Rehabilitation—Foundations and Geotechnical Considerations
Identification of site soils and seismic hazards; mitigation of site seismic hazards; evaluation of foundation strength and stiffness, with examples; soil foundation rehabilitation. | 9:30 a.m. | Craig
Comartin |

Coffee Break

10:10 a.m.

10. Rehabilitation of Nonstructural Components

Procedural steps; behavior and acceptance criteria for acceleration- and deformation-sensitive nonstructural components; analytical and prescriptive procedures.

10:25 a.m.

William
Holmes

11. Application of the Systematic Rehabilitation Method to Steel Components and Buildings

Overview of steel chapter contents; material properties and condition assessment; analysis and modeling of steel structures; acceptance criteria; new features applicable to steel components and buildings; application to 3-story building example, including condition assessment, selection of rehabilitation objectives, lateral force distribution, and capacity checks for selected components.

11:25 a.m.

James Malley

Lunch Break

12:25 p.m.

12. Application of the Systematic Rehabilitation Method to Masonry Components and Buildings

Overview of masonry chapter contents, including scope, historical perspective, in-place material properties, condition assessment, knowledge factor, types of masonry walls, anchorages, strength definitions, and acceptance criteria for the linear and nonlinear static analysis procedures; application to a 1-story building example, including selection of rehabilitation objectives, and estimation of seismic loads and capacities for selected components.

1:25 p.m.

Daniel
Abrams

13. Application of the Systematic Rehabilitation Method to Concrete Components and Buildings

Concrete framing types; material properties and condition assessment, general assumptions and requirements; application to a 4-story concrete frame building example, including review of initial considerations, selection of rehabilitation objective, selection of initial approach to risk mitigation, and implementation of systematic rehabilitation method and selected analysis procedures.

2:10 p.m.

Jack Moehle

14. Application of the Systematic Rehabilitation Method to Wood Components and Buildings

Wood building types; special wood issues; yield capacity for wood; application of the Linear Static Procedure (the preferred analysis procedure for wood buildings); application to a 3-story wood-frame office building example, including review of initial considerations, selection of rehabilitation objective, selection of initial rehabilitation scheme, and analysis using the Linear Static Procedure (with sample calculations and capacity checks for selected components).

3:10 p.m.

John Coil

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