



PROFESSIONAL CAPABILITIES

SEISMIC DESIGN

- Highway and Railroad Bridges
- Waterfront Structures
- Buildings
- Water Tanks
- Power Plants
- Dams and Hydraulic Structures
- Refineries

SEISMIC RETROFIT / PRIORITIZATION

- Schematic Studies, Prioritization of Most Vulnerable Structures
- Development of Retrofit Strategies, Cost Estimates, Decision Matrix
- Combination with Other Vulnerabilities (Scour, Fatigue, Structure Age)
- Evaluation of Existing Components Using State-of-the-Art Techniques (Moment Curvature Principles for Reinforced Concrete)
- Implementation of Latest Research on Material Behavior and Ductility Determination

SEISMIC HAZARD DETERMINATION

- Definition of Performance Goals
- Definition of Earthquake Recurrence Periods

The seismic design and retrofit of structures is one of the most dynamically changing fields in structural engineering. Lessons learned and research performed since the earthquakes in California, Japan, and Turkey have created great changes in the way engineers design and evaluate structures subject to earthquakes. Our staff's earthquake engineering experience includes detailed seismic design considerations for: structural steel framework at nuclear and fossil fuel power plants; concrete turbine or building foundations at nuclear and fossil fuel power plants; and vessel supports at refineries. Our engineers have also been involved with the new or retrofit design of highway and railroad bridges in areas of high seismic activity such as California, the Pacific Northwest, and Turkey.

Collins' experienced personnel provide a wide range of earthquake engineering services, including earthquake analysis, retrofit, and prioritization. Experience has been gained through firsthand post-earthquake reconnaissance, development of emergency repair schemes, retrofit PS&E, implementation of research, and participation in code writing and review.

Collins' engineers take a practical approach in the development of solutions to complex problems. Engineering judgment and past experience provide our clients with safe and cost-effective solutions for their seismic projects.

COLLINS ENGINEERS INC