

COMMITTEE ON CAMPUS PLANNING, BUILDINGS AND GROUNDS

California State University Seismic Review Board Annual Report

Presentation By

Elvyra F. San Juan
Assistant Vice Chancellor
Capital Planning, Design and Construction

Summary

This information item presents the CSU Seismic Review Board Annual Report. This reporting period spans September 2006 to September 2007.

Seismic Policy and History

The CSU initiated the assessment of the seismic hazards posed by CSU buildings as directed by former Governor Deukmejian's executive order and legislative provisions. In 1993, the CSU Board of Trustees adopted the following policy:

It is the policy of the Board of Trustees of the California State University, that to the maximum extent feasible by present earthquake engineering practice, to acquire, build, maintain, and rehabilitate buildings and other facilities that provide an acceptable level of earthquake safety for students, employees, and the public who occupy these buildings and other facilities at all locations where CSU operations and activities occur. The standard for new construction is that it meets the life-safety and seismic hazard objectives of the pertinent provisions of Title 24 of the California Code of Regulations; the standard for existing construction is that it provides reasonable life-safety protection, consistent with that for typical new buildings. The California State University shall cause to be performed independent technical peer reviews of the seismic aspects of all construction projects from their design initiation, including both new construction and remodeling, for conformance to good seismic resistant practices consistent with this policy. The feasibility of all construction projects shall include seismic safety implications and shall be determined by weighing the practicality and cost of protective measures against the severity and probability of injury resulting from seismic occurrences. [Approved by the Board of Trustees of the California State University at its May 19, 1993 meeting (RCPBG 05-93-13)]

Out of this policy the CSU Seismic Review Board (SRB) was established to advise and assist in determining the condition of CSU buildings, and to technically oversee the trustees' seismic policy. The CSU has identified the seismic hazard within its existing building stock and is in the process of completing their mitigation.

CSU Seismic Review Board Members

- Charles Thiel Jr., Ph.D., President, Telesis Engineers (Chairman)
- Gregg Brandow, Ph.D., S.E., President, Brandow and Johnston, Adjunct Professor, University of Southern California
- John Egan, G.E., Principle Engineer, Geomatrix Consultants
- John A. Martin, Jr., S.E., President, John A. Martin and Associates, Inc.
- Richard Niewiarowski, S.E., Principle, Rutherford and Chekene
- Thomas Sabol, Ph.D., S.E., Principle, Englekirk and Sabol
- Theodore C. Zsuty, Ph.D., S.E., Consulting Structural Engineer, Professor, San Jose State University, Retired (co-chair)

Sven Nielson, an original SRB member retired from the SRB in 2007. His contributions and invaluable service to CSU for improving the seismic safety over the past 15 years are hereby acknowledged and recorded.

CSU Seismic Mitigation and Oversight Elements

The California State University seismic mitigation and oversight planning effort has six elements:

1. **Mitigate urgent falling hazard concerns.** Mitigate significant life-safety threats posed by falling hazards as a priority. All such hazards at all 23 campuses and off-campus centers have been mitigated.
2. **Identify and broadly prioritize existing seismic deficiencies.** Identify existing buildings that pose a significant life-safety threat and mitigate these hazards as soon as practical. Prioritize these buildings into two listings: urgent and less urgent.
3. **Perform periodic re-evaluation of existing facilities.** The current assessment was completed at the end of 2006. The purpose was to confirm the building's structural life-safety hazards in light of code changes and lessons learned since 1992 and to ensure that the priority listing is reflective of the condition and content of the CSU building stock as it evolves over time.
4. **Provide peer review for all major construction.** Assure that all CSU new construction and modification of existing structures have independent, technical peer review of the earthquake performance aspects of the plans. The California Building Code includes provisions

applicable to renovation work for state projects. Specifically, Division VI-R contains criteria and triggers that work to systematically raise the level of seismic safety for existing building stock over time whenever any structural modification, alteration or addition to the structure is undertaken. The SRB closely monitors for Division VI-R code compliance as a part of its peer reviews.

5. **Maintain a Seismic Event Response Plan.** The CSU has an established and tested methodology in place to respond in the case of a significant seismic event.
6. **Conduct seismic related staff training.** CSU facilities planning, design and construction staff are afforded systemwide training on project management, building code, building official responsibilities and seismic emergency response and assessment procedures.

2006-2007 Seismic Review Board Activities

The SRB met six times during the reporting time period, five meetings at the Chancellor's Office and one meeting at CSU Fresno. Notable activities of the SRB since the last report to the trustees include the following:

1. Provided seismic technical support to the Chancellor's Office and to the campuses. Peer reviews were completed for construction projects in accord with the trustees' policy.
2. Revised administrative sections of the trustees' CSU Seismic Policy and Requirements Manual to update technical guidelines and to clarify sections based on campus questions.
3. Completed a review of the seismic safety of leased buildings to develop and implement a lease/purchase standard for CSU. The SRB and Chancellor's Office spearheaded efforts for joint adoption of the standard by the University of California (UC) and the Department of General Services (DGS). The lease/purchase standard, if adopted by UC and DGS, will set the same seismic strength evaluation criteria for real property for the three entities.
4. Completed development of Chapter 34 of the 2007 Edition of the California State Building Code (CBC) that was adopted by the Building Standards Commission in March 2007. The SRB led the effort of state agencies (UC, DGS, Administrative Office of the Courts, and others) to develop existing building regulatory requirements for existing state buildings to be incorporated into the new edition of the CBC. The SRB reviewed and drafted changes to the existing code language in order to provide technical input to the State as part of the new code adoption process. The CSU's amendment was one of the very few amendments prepared, submitted, and accepted by the Building Standards Commission without modification. The amendment allows building owners to voluntarily seismically strengthen existing buildings incrementally. The previous code did not allow incremental improvements instead requiring an all or nothing approach to strengthening.

5. Completed a comprehensive re-assessment of the seismic characteristics of the current existing CSU building stock. This was the first general re-assessment to take place since the CSU seismic program was begun in 1993. The purpose was to ensure that buildings with potential life-safety hazards to students, faculty, and staff had not been inadvertently overlooked. Several structures were identified that warranted additional investigations, which are now underway. This reassessment added buildings to the CSU seismic retrofit priority list. The revised priority listing incorporating SRB findings from campus building re-assessments has been distributed to the campuses.
6. At the request of the University of California, Office of the President, the SRB peer reviewed the seismic performance of the UCLA Medical Center existing buildings. In the course of this review, the SRB secured agreement between UC, DGS and CSU on use of Seismic Risk Rating Systems and related definitions for use by UC to more reliably evaluate the seismic performance ratings of their buildings.
7. At the request of the California Community College Chancellor's Office, the chairman of the SRB and CSU staff have provided advice on how to implement a code enforcement and seismic review process for the Community Colleges Districts. CCC is adapting the CSU approach as its model and is adapting it to its particular institutional setting and needs.
8. Provided input into the State Multi-Hazard Mitigation Plan Update to incorporate the CSU response protocols and ensure access to Federal funding for emergencies. There were no earthquakes within the time period that required safety assessments of a campus. If a seismic event had occurred, the response protocols described in the Seismic Policy and Requirements would have been initiated.