

**Meeting Minutes – Spring 2009**  
**ACI Committee 341 - Earthquake-Resistant Concrete Bridges**

Sunday, March 15, 2009, 3:00 p.m. to 5:00 p.m.  
Conference Rooms 1 & 2, Marriott River Center, San Antonio, TX

**Members Attending:**

Raj Valluvan (Chairman), Sri Sritharan (Secretary), Mark Aschheim, Bassem Andrawes, Mario Rodriguez, Pedro Silva, Ron Watson, Riyadh Hindi, Dino Bagnariol, Bozidar Stojadinovic, Chris Pantelides, Kevin Mackie, Vinicio Suarez, Oh-Sung Kwon, Nathan Johnson, Abdeldjelil Belarbi

**Visitors Attending:**

Chien-Chung Chen, Larry Matejcek, Partha Ghosal, Nathalie Roy, Mike Wilson, Richard Osmun, N. Y. Chang, Khaled Nallawi, Matt Leborgne, Hiroshi Matsuyoshi, Alex Hammond, Christian Dulude, Guillermo Huaco

**Regrets:**

Dawn Lehman, David Hieber, Mervyn Kowalsky, Rigoberto Burgueño, JoAnn Browning, Nadim Wehbe, Adolfo Matamoros, Maged Youssef, Brad Robson, Sarah Billington, Angel Herrera, Eric Matsumoto, Bob Anderson.

**1. Call to Order and Introduction**

Valluvan called the meeting to order at 3:10 p.m. The meeting agenda and a copy of the minutes of the last meeting in St. Louis were made available to the members. Members introduced themselves. Valluvan passed out the attendees' sign-in sheet. At the request of Valluvan, Hindi moved, Watson seconded and the committee approved the proposed agenda for the meeting.

**2. Review and Approval of the Minutes of the Fall 2008 Meeting in St. Louis**

Valluvan asked the members if they had any review comments on the minutes of the St. Louis meeting. No comments were offered. It was moved by Andrawes and seconded by Aschheim to approve the minutes as originally presented to the committee by Sritharan.

**3. Committee and Subcommittee Membership**

Valluvan informed that the committee has 38 Voting Members, 30 Associate Members, and 3 Consulting Members, totaling 71 members in the committee with a good balance between industry and academic representation.

The new members added to the committee are three voting members (Abdeldjelil Belarbi, Kevin Mackie, Maged Youssef) and three associate members (Sourabh Agrawal, Nathan Johnson, Oh-Sung Kwon). Furthermore, Andy Taylor resigned from the committee and Associate Member, Matt Tobolski has been appointed as full member because of strong participation in the committee activities. Bassem Andrawes has been appointed as Co-chair of Subcommittee 341-C and he will share the leadership responsibilities with Shukre Despradel. Valluvan announced that his three terms as Chair of the committee will end at the end of the convention and that Sritharan will take over as the new Chair on March 20, 2009.

#### 4. Technical Sessions at ACI Conventions

- a) Spring 2009 – Infrastructure Concrete Practice & Placement  
March 15 – March 19, Marriott River Center, San Antonio, TX

One session entitled “Practice and Placement of Structural Concrete in Seismic Design of Bridge Infrastructure” was organized by Andrawes and Zhong-Brisbois. Andrawes informed that the session includes six presentations on a variety of topics and invited the committee members to attend the session.

- b) Fall 2009 – Spice Up Your Concrete  
November 8 – November 12, Marriott New Orleans, New Orleans, LA

Kowalsky and Browning did not attend the meeting. Valluvan updated the committee that the final approval form for a session “How Do You Spice Up a Concrete Bridge to be Earthquake-Resistant?” has been submitted. The session will focus on the use of fiber reinforced concrete in bridge design and construction.

- c) Spring 2010 – Xtreme Concrete  
March 21 – March 25, Sheraton, Chicago, IL  
Hindi reported that an advertisement requesting papers for a session on “High Performance Concrete for Seismic Design of Bridges” has been submitted for publication in the Concrete International. In the meantime, he also invited members to provide suggestions for presentations. The final session approval form will be submitted prior to Fall 2009 convention in New Orleans.

Another session on high performance concrete columns will be jointly sponsored by ACI-441 and ACI-341 committees. Esmaeily and Hindi will represent the two committees and submit the final session approval form to ACI.

- f) Fall 2010 – Green Concrete in the Steel City  
October 24-28, The Westin Convention Center, Pittsburgh, PA  
Hieber will take the lead and submit the paper work for preliminary approval for a technical session on “Role of Green Concrete vs. Steel in Earthquake-Resistant Design of Bridges”. Sezen agreed to serve as the co-moderator for the session.
- g) Spring 2011 – Concrete – The Strength of Florida  
April 3-7, Marriott Tampa Waterside & Westin Harbour Island, Tampa, FL  
“Bridge Survivability under Extreme Loading Multi-Hazard” is the topic suggested for this conference. Mackie will take the lead to organize this session with the anticipation of Anderson serving as the co-moderator.

#### 5. Sub-Committee Reports

**Bridge Columns (Aschheim & Rodriguez)** – Aschheim informed the committee that the comments received on the draft document in Fall 2008 have been addressed. Then he provided the following status of the report: Ch 3 – completed; Ch 5 - needs to be completed; and Ch 6 – needs some revisions. The subcommittee plans to have the first balloting done in summer 2009. Valluvan thanked Aschheim and Rodriguez for their continuous effort and noted that ensuring code compliance and consistency between chapters always take time.

**Wall Piers (Abo-Shadi & Robson)** – Abo-Shadi did not attend the meeting and it was believed no progress has been made on this document. Valluvan suggested to Sritharan, the incoming chair, to consider alternative arrangements to make progress on this report.

**Retrofit and Repair (Despradel)** – Despradel did not attend the meeting, but requested that the committee appoint a co-chair for this sub-committee as he could only attend one committee meeting per year. As previously noted, Andrawes will serve as Co-chair of this subcommittee. In the absence of Despradel, the subcommittee met and discussed the progress of a new document that will present seismic retrofit examples with emphasis on performance based issues.

**Performance Based Seismic Design of Bridges (Silva)** – Silva discussed progress of two items. First, he informed that preparation for publication of a SP containing papers presented in two technical sessions in St Louis is coming along. Although most of the papers have been reviewed, reviewers are needed to complete this task. He invited volunteers to review the remaining papers with the goal of completing all reviews by May 1, 2009. At that time, authors will be notified of the status of the paper and review comments. Second, he summarized the progress on the subcommittee document. The presentation was mainly on Chapter 1 and Chapter 2, which will address the damage indices, PEER performance models, as well as force-based vs. displacement-based design approaches.

**Seismic Analysis and Design of Concrete Bridge Systems (Anderson)** – Anderson did not attend the meeting and Valluvan provided an update. Valluvan first thanked Anderson for continuing to make progress on this document. The majority of the work focused on addressing the comments received from the committee ballot. A good progress on the revision has been made and it is expected that the second ballot of this document will take place in summer 2009.

**Bearing Systems and Expansion Joints (Watson)** – Watson and Valluvan updated the committee on the first ballot. The summary of results were: 12 affirmative, 7 affirmative with comments, 7 negative and 6 abstained (Six members did not vote). The document may need updating in the process of resolving all the negative votes. He advised Watson to work out a strategy with Sritharan to update the document. Rodriguez raised a concern, expressing why this document is unique to concrete bridges and should not be applicable to steel bridges.

Valluvan thanked all the subcommittee chairs for doing a great job.

## **6. Report from Other ACI Committees**

ACI 342 – The committee is working on a document that addresses live load distribution factors for bridge evaluations. It is expected that the document will be balloted after the convention.

ACI 343 – Bridge Design – the meeting was scheduled for Monday and Valluvan encouraged the members to attend the meeting.

ACI 345 – Concrete Bridge Construction, Maintenance and Repair – No report.

ACI 352 – Joints and Connections in Monolithic Concrete Structures – No report.

ACI 374 – Performance Based Seismic Design for Concrete Buildings – No report.

ACI 441 – Columns –No report.

## **7. Future Meetings**

Valluvan said the Sunday meeting schedule would be retained for the main committee and subcommittee meetings during the next convention except for rotating the subcommittee meeting times. Valluvan will send a reminder to ACI regarding the rotation of the subcommittee meetings.

## **8. Update from TAC (Michael Sprinkel)**

Sprinkel could not attend the meeting.

## **9. Other Business**

Sritharan noted that this was the last meeting that Valluvan serves as the Chair of this committee. He thanked Valluvan for his dedication to the committee and his hard work, and members agreed with him by applauding Valluvan for his leadership effort for the past six years.

## **10. Presentations**

“Rocking Hinge Bearings - A New Concept in Seismic Isolation” by Professor N. Y. Chang, University of Colorado at Denver. The presentation was well received and attracted stimulating discussions by the meeting attendees.

## **11. Adjournment**

The meeting was adjourned at 5:00 p.m.

Prepared by Sritharan, Secretary of ACI Committee 341

**Minutes for ACI-341-A: Spring 2009 (San Antonio)**  
Performance Based Seismic Design of Bridge Columns  
15 March 2009

**Attending**

Members: Mark Aschheim, Y.L. Mo, Chris Pantelides, Mario Rodriguez, Bozidar Stojadinovic, Raj Valluvan, Nadim Wehbe

Visitors:  
Chien-Chung Chen, Nathan Johnson, Oh-Sung Kwon, Sri Sritharan.

**Discussion**

Recent Developments

The review by Burgueno, Tobolski, and Valluvan in Summer/Fall 2008 generated many comments; editorial comments have been addressed through changes made to the document. Substantial comments are in the process of being addressed. Chapter 6 examples were substantially reworked and the chapter was updated to reflect the new results.

Plan

Mike Berry will make minor revisions to Chapter 3, likely within a week or two. Matt Tobolski will work on Chapter 5 to address the many substantive comments raised in the review of this chapter, likely within a few weeks or more. Nathan Johnson will be given the document to consider and may also be able to contribute to Chapter 5. Shukre Despradel is waiting for revisions to Chapter 5 to be completed to ensure detailing requirements in that chapter are reflected in the examples.

Schedule

We are aiming to ballot in early June.