

ACI-ASCE Committee 447
Finite Element Analysis of Reinforced Concrete Structures
Meeting at Room C-106- C
Phoenix, Az 10/21/2013 11:00:00 AM - 1:30:00 PM
ACI Fall Convention 2013

Minutes taken by Serhan Guner and completed and verified by Chair of Committee

1. Call to Order and Introduction of Members and Guests

Members Present: Ganesh Thiagarajan, Zdenek Bazant, Michael O'Leary, Riadh Al-Mahaidi, Gianluca Cusatis, Ravi Mullapudi, Dan Palermo, Frank Vecchio, Mukti Das, Carlos Coronado, Jan Song, Allan Bommer, Serhan Guner, Marios Panagiotou, Prasad Samarajiva, Laura Lowes.

Members Not Present: Appa Rao, Ayoub, Billington, Conley, Deaton, Draper, Filippou, Gerstle, Ingraffea, Jakovich, Lin, Lu, Mo, Naguib, Rahman, Riveros, Sritharan (informed), Willam, Zhao (informed)

Guests: Rowan Wendner, Axel Sanchez, Ali Naji Attiyah, Evan Bentz, Daniel Dunkelberg, Jack Shi, Andrew Mock.

Important Note: (Please check with me if you were there are not listed here)

Cusatis raised the point that many members were absent from the recent meetings. Lowes suggested contacting the absent members by email and asking if they are still interested in the committee. Ganesh indicated that this has already been done and suggested doing this again in the future.

3. Review and approve minutes from previous meeting: ACI Spring 2013 Minneapolis Convention.

Gianluca Cusatis moved to accept the minutes and Christian Meyer seconded it. All were in favor. There were none opposed and nobody abstained.

It was not clear if there was a quorum to accept the minutes and there was a suggestion to send a ballot to accept the minutes. The suggestion was accepted by the Chair.

4. Membership update:

New associate member by Dr. Marios Panagiotou was introduced.

5. Report on possible technical sessions/Special Publications to be sponsored by the committee:

a. **Cusatis:** "Development of guidelines for the calibration and validation of concrete models," Session in Collaboration with ACI-446 on Calibration of Concrete Models.

Five people from ACI-447 have previously volunteered to work on this item. Cusatis indicated that he is overly occupied and asked for a volunteer to chair this work. Ganesh volunteered to be the chair. Cusatis indicated that another chair is needed from ACI-446. Cusatis will bring this need during the task group meeting today.

Guner, Lowes, Bommer and another member (not sure of the name) discussed the possible scope and audience for this document. Cusatis indicated that he will write an outline document and forward it to committee members for comments before work starts on this document.

b. **Ganesh:** Fall 2013 Session on 'Blast Blind Prediction Contest' – Winners to present their results and methodologies. Session on Tuesday from 4-6 pm.

c. **Special Publication** – cosponsored by 370 (Ganesh).

Ganesh indicated that the committee has a preliminary approval for the special publication. A 30 page normal strength concrete report is complete. High strength concrete report needs to be prepared. November to Mid-December submissions will be collected and the status of this document will be more clear after ACI Fall 2014 convention.

d. **Future sessions to be organized?**

Panagiotou suggested a session on the modeling and finite element analysis of bridges for mainly seismic loads as a joint 341/447 sponsored session.

Mukti Das **suggested** a session on the soil-structure interaction, guidance and acceptance criteria as it is very important subject for NRC.

6. Update on State-of-the-Art Reports

a. **Ayoub:** Modeling of Modern Concrete Structures for Performance-Based Earthquake Engineering (447.XR)
The document is near completion. Laura and Guner will provide draft copies of the chapters to Ganesh. Ganesh will communicate with Ashraf to obtain the names of authors. Effort will be made to publish this document soon.

b. **Sritharan and Zhao (in collaboration with Com. 408):** Modeling of Cyclic Bond in Reinforced Concrete (447.YR)

Sritharan was absent. This topic was not discussed.

c. **Al-Mahaidi:** Modeling for the Repair and Rehabilitation of Modern Concrete Structures for Performance Based Design (447.ZR)

Nine papers were previously submitted to ACI for special publication. Once this process is complete, the authors will be invited to contribute to this document by next convention.

d. **NESCC – Concrete Task Group (CTG) Report:** Post-Processing Finite Element Analysis Results for the Design of Nuclear Concrete Structures (447.YT)

Micheal O’Leary / Carlos Coronado: Update

Carlos indicated that Jason no longer has time to work on this report. Ganesh will talk to him. O’Leary and Coronado discussed the inclusion of earthquake effects in this document.

7. Twisting Moments in Finite Element Based Design of Reinforced Concrete Slabs (Allan Bommer)

Allan indicated that this document is now being converted to a design guide and the outline was approved by ACI. Allan will send the latest version to all members for comments.

8. Discussion of draft documents (from past several years). Several outstanding incomplete documents exist and the status of these documents will be discussed. The chair will bring the existing copy and seek ways to move these documents to completion.

Ganesh asked the status of post-tensioned slab document. Allan indicated that the document can be deleted from the web site.

Ganesh asked the status of finite element modeling document for impact and blast loads. Song Jan will contact people who presented in the 2010 Pittsburgh session for impact and blast for the creation of a state of the art document.

9. Importance of Shear Deformation Theory in Nuclear Containment Design –Mukti Das”

Mukti made a presentation on the finite element analyses of nuclear containment structures using Kirchhoff and Mindlin theories. Ganesh indicated that the committee members will be invited to make research presentations in subsequent meetings.

10. Brief introduction by Dr. Marios Panagiotou of his research work.

Panagiotou made a presentation on finite element analysis of nonplanar shear wall modeling considering shear and flexure interaction using fiber models and truss elements.

11. New Business/ Adjourn

No new business is raised.