440F – Agenda Item 1 – Call to Order

440F – Agenda Item 2 – Introductions

440F – Agenda Item 3 – Approval of Agenda

440F – Agenda Item 4 – Approval of Minutes

440F – Agenda Item 5 – Announcements

440F – Agenda Item 6 – Seismic Design Guidelines

a) i: 1 v 2 sided FRP for seismic upgrade of shear walls

Resolution of two negatives (Engindeniz and Harries) from ballot closing 10.18.13.

Original Proposed Language:
FRP should be provided on two faces of the wall if V_u exceeds $2A_{cv}\sqrt{f_c'}$, where A_{cv} is the gross area of concrete section (in units of in^2) bounded by web thickness and length of wall in direction of shear force, and f_c' is in units of psi. The intent of this provision is to inhibit fragmentation of concrete in the event of severe cracking during a severe seismic event.

Extensive discussion involving Alkhradji, Engindeniz, Kanitkar, Harries, Silva and Witt identified additional concerns that go beyond limits of one- and two-sided repairs.

440F – Agenda Item 6 – Seismic Design Guidelines

a) i: 1 v 2 sided FRP for seismic upgrade of shear walls

Concrete component of shear capacity is a function of ordinary/intermediate or special wall designation (ASCE 41). Therefore, seismic chapter should (must) limit itself to the V_f term: the increase in capacity that may be realised using FRP.

Most extant documents permit one- or two-sided FRP repairs; these should not be restricted, rather we should accommodate both and calculate V_f accordingly.

These require reworking of §13.7.3 (Alkhradji and Silva)

Changes will be balloted at subcommittee following Reno along with other revisions arising from AC comments received in the 10.08.13 ballot and since

These other revisions include…

440F – Agenda Item 6 – Seismic Design Guidelines

a) ii: Alignment of ϕ-factors with ASCE 41 (i.e.: ϕ = 1.0)

This will be addressed by limiting the seismic chapter to the M_f or V_f terms: the increase in capacity that may be realised using FRP and referencing ASCE 41 for concrete and steel. ϕ factors will not be repeated in 440.2

a) iii: Verification of example calculations

Rasheed will verify examples provided by Silva – after all changes are made

a) iv: Editorial change to compressive strain limit reported in Eq. 13.4

$$\varepsilon_{ccu} = \phi c_u \leq \underline{\mathbf{0.01}}\ \sout{0.02}$$

Changes will be balloted at subcommittee following Reno along with other revisions arising from AC comments received in the 10.08.13 ballot and since

440F – Agenda Item 6 – Seismic Design Guidelines

b) Review by ACI 369 - Timeline

Ballot at 440F (complete June 15)
↓
address/resolve comments (complete July 15)
↓
clean copy to ACI 369 for review (request response by Sept. 15)

simultaneous final editorial review (agenda item 6.c)

It is necessary to establish a paper trail of comments and further resolutions arising from ACI 369 review

↓
Resolve/document 369-review comments by ACI DC meeting
↓
Ballot by 440 Main immediately following DC (agenda item 6.d)

440F – Agenda Item 7 – Task Group Reports

a) Deflection (Rasheed)

Proposed Revision to §10.2.8 is ready for ballot at 440 Main following Reno (attached file)

440F – Agenda Item 7 – Task Group Reports

b) Glass Transition Temperature (Bisby)

ACI has been participating with a group of nuclear construction stakeholder's called the Nuclear Energy Standards Coordination Collaborative (NESCC). This group is comprised of licensees, vendors, federal agencies, and standard development organizations. The NESCC is charged with evaluating the regulatory standards that are currently being used to build and maintain nuclear facilities, and they have identified areas where revised/new standards or guides are needed to facilitate new plant construction. A concrete task group was organized within the NESCC to address documents related to repair. The task group has completed their review and have released a report stating their recommendations (see attachment).

The nuclear industry is asking 440 to update 440.2R with additional information about performance of FRP under high temperature.

440F – Agenda Item 7 – Task Group Reports

b) Glass Transition Temperature (Bisby)

440.2 cites T_g by ASTM D4065 (tan-delta T_g)
440.8 cites T_g by ASTM E1640 (storage modulus T_g)

E1640 is more 'conservative' and, it is suspected, may result in some materials not making the cut without (indefensible) post-cure.

Nonetheless, E1640 is preferred by experts on 440 and was originally proposed for 440.2

For the materials we are considering, the 440.2 definition of T_g – 15°C will be close to the 440.8 definition of T_g.

TG reports that research is ongoing with the intent of proposing revision to (or maintaining) 440.2 (or 440.8). this work is necessary to ensure harmonised testing requirements across all 440 documents.

440F – Agenda Item 7 – Task Group Reports

c) Anchorage (Lopez)

440F – Agenda Item 7 – Task Group Reports

d) Mechanical Anchorage (Lamanna)

Tony Lamanna (now at EKU) has agreed to lead this TG

Based on initial discussions with Tony, he anticipates:

- Reference to ACI 318 App D (will be new chapter in re-organisation)
- Anchor qualifications referencing ACI 355.2 and 355.4
- Guidelines for use with FRP (interactions)

Anticipates draft language for ACI DC meeting

440F – Agenda Item 7 – Task Group Reports

e) Blast (El-Domiaty)

Initial ballot within ACI 370 committee on the technical chapters of the document

will be addressing the technical comments in Reno

440F – Agenda Item 8 – Old Business

a) Load Combinations for Fire/Extreme Loading (Alkhradji)

Clarification and coordination with ACI 562

440F – Agenda Item 8 – Old Business

b) Moment redistribution for FRP-strengthened sections (Silva)

Justification document (Silva and Ibell) prepared (see attachment)

1. Moment Redistribution from an unstrengthened zone into a FRP-strengthened zone should be permitted in accordance with ACI 318 §8.4; that is:

$$7.5\% \leq MR = 1000\varepsilon_t \leq 20\%.$$

1. For FRP-strengthened RC beams moment redistribution should be permissible provided that the section develops steel strains near or exceeding ε_t=0.0075. Moment redistribution in the amount of at least 7.5% can be attainable without imposing any secondary limits.
2. In FRP-strengthened RC beams moment redistribution should be permissible in accordance with ACI 318 §8.4, but restricted to fire thresholds set forth per ACI 440.2.

Draft language for insertion into Ch. 10 of 440.2 is presented for comment

440F – Agenda Item 9 – New Business

a) Reaffirmation schedule for 440.2R

Must be reaffirmed for 2016 (Shield for schedule)

Review of entire document identifying 'more research' flags that TAC may expect to be resolved.

Inclusion of Seismic Chapter

All TGs discussed at this meeting will likely result in some revision

Other revisions?

Review team (led by Harries) will scour 440.2R-08 identifying all such likely or desired changes

440F – Agenda Item 10 – New Business

EKU Case Building Demolition