MINUTES
ACI COMMITTEE 365: SERVICE LIFE PREDICTION
Meeting #29, October 29, 2002
East Court 3B
Pointe South Mountain Resort
Phoenix, Arizona

1. Welcome
The meeting was called to order at 8:34 a.m. by Chairman Michael Thomas.

2. Attendance and Membership
The following attended:


Apologies: M. Basheer, N. Berke, S. Chidiac, C. Hansson, P. K. Mukherjee

Present committee membership includes 43 voting members and 20 non-voting members.

3. Approval of Minutes of the Detroit Meeting
Approval of the minutes from the Detroit meeting was delayed until the next meeting.

The mission of this subcommittee is to develop and maintain standards relating corrosion service life modeling for steel-reinforced concrete and to serve as a conduit for the collection and dissemination of related information. This subcommittee met previously on October 27, 2002.

Approximately 110 pages of the 365A guide document draft have been completed. When completed, the document will contain information on service life prediction for corrosion with guidance summary supplemented by appendices. Ideally it would be nice if general section could be turned into something like “Cliff Notes” with details provided as backup material. Mike Thomas, Paul Tourney, and Matt Miltenberger will rewrite introductory material to address information requirements and how to perform calculations related to service life and life cycle cost. Charles Dolan and Matt Miltenberger will compare information in draft document to ACI 222, “Corrosion,” document. Appendices will contain information to back up calculations (e.g., corrosion propagation, cracking, and probabilistic modeling using deterministic model). The document still lacks a chapter that addresses
needed information or research and a disclaimer (available from TAC) placed at the front of the document. These items will be considered when the document is closer to completion.

Emerging technology series documents do not go through same TAC review as other documents. After 10 years these documents either get revised with a more complete review, or disappear. The ACI 365A document is a candidate for the emerging technology series


The report "Service Life Prediction – State-of-the-Art (ACI 365.1R-00)" has been published and was included in the 2001 ACI Manual of Concrete Practice. Within the next five years the report needs to be reapproved, updated, or a new document generated for inclusion in the Manual of Concrete Practice. D. Trejo is heading a committee to update the report. Randy Poston noted that documents such as ACI 365.1R-00 have a life of about ten years and at an age of five years are generally reapproved unless inadequate or out of date. May want to change title with minor revisions at five years and then do a major revision at ten years.

Lead authors have been identified to address each of the chapters in the revised SOA report. Mike Thomas requested a status report from each of the lead authors.

Chapter 1. – Introduction (D. Trejo) – will be completed when balance of report is completed.

Chapter 2. – Environment, design, and construction considerations (M. Thomas, N. Berke, C. Dolan) (consideration should be given to inclusion of early and late cracking). Charlie Dolan and Neal Berke noted that they have additional input.

Chapter 3. – In-service inspection, condition assessment, and remaining service life (M. Basheer, D. Naus, C. Dolan) – probably acceptable as is.

Chapter 4. – Methods for predicting service life (P. Tourney, E. Bentz, J. Marchand, E. Garboczi) – Paul Tourney has prepared some notes for incorporation.

Chapter 5. – Economic considerations (D. Trejo) – M. Ehlen will provide materials.

Chapter 6. – Examples of service-life techniques (All committee members, E. Bentz and M. Thomas to include Life 365 material, European Union experience should be included) – Paul Tourney volunteered to lead a review of existing models.

Chapter 7. – Ongoing work and needed developments (D. Hooton) – something will be provided at next meeting.

Detailed status report for each chapter will be provided at main committee meeting in Vancouver. Consideration will be given to extending meeting length to three hours to accommodate this. M. Schupack brought up the question of whether prestressing should be included in the report. L. Church will prepare materials on prestressed and post-tensioned concrete for inclusion in Chapter 2 and also look at developing a model for prestressed parking structures. M. Schupack will consider preparing some verbage on difficulties in modeling various prestressing systems. Consideration will be given to placing a statement at front of the state-of-the-art report that document does not address prestressed concrete but information will be included in report on what is known about corrosion of prestressing.
6. **Future Technical Sessions**

Tracy Marcotte volunteered to prepare paperwork for a session on “Cracking, Chlorides, and Corrosion” that will be proposed for the meeting in Washington, DC, March 2004. Six papers will be solicited.

Bruce Smith will pursue a session on “Designing Structures for 100 Year Service Life,” that will be proposed for the San Francisco meeting, October 2004.

D. Trejo will pursue a session on “State-of-the-Art on Service Life Prediction” that will be proposed for the Boston meeting, September 2003. Papers will be presented by the lead authors for each of the state-of-the-art report chapters.

7. **Liaison with Other Committees**

**ACI Committee 349** - has published ACI 349-01 “Code Requirements for Nuclear Safety Related Concrete Structures.” ACI 318-99 and ACI 318-02, “Building Code Requirements for Structural Concrete and Commentary” are being reviewed to revise ACI 349-01 to reflect changes in these documents. ACI 349.3R-02, “Evaluation of Existing Nuclear Safety-Related Concrete Structures,” has been published. Development of a document ACI 349.5-XX, “Methodology for Capacity-Side Fragility Analyses” is planned.

**ACI 222** – no report, but has published ACI 222R-01, “Corrosion of Metals in Concrete,” and ACI 222.2R-01, “Corrosion of Prestressing Steels.”

**ACI 227** – disbanded.

**ACI 234** – looking at threshold levels for chlorides in silica fume.

**ACI 235** – setting HTML datapoints and standardization criteria.

**ACI 236** – No report.

**ACI 350** – interested in structures that contain chlorides, ACI 350-01, “Environmental Engineering Concrete Structures,” has become a code document, currently preparing information on durability.

**RILEM TC 178-TMC**, “Testing and Modeling Chloride Penetration in Concrete,” is addressing two primary areas: (1) comparison of testing methods through a round-robin testing program, and (2) analysis of models (e.g., background, boundary conditions, and applicability limits). A workshop “Testing and Modeling Chloride Ingress Into Concrete,” was held in Madrid, Spain on 9-10 September 2002.

9. **Meetings of Interest**

ACI “Fifth International Conference on Innovation in Design with Emphasis on Seismic, Wind and Environmental Loading, Quality Control, and Innovation in Materials/Hot-Weather Concreting” to be held 10-13 December 2002 in Cancun, Mexico.
“International Conference on Performance of Construction Materials in the New Millennium” to be held 17-20 February 2003 in Cairo, Egypt (http://www.ucalgary.ca/~icpm).


“Sixth CANMET/ACI International Conference on Durability of Concrete” to be held 1-7 June 2003 in Thessalonika, Greece (http://www.aci-int.org).

“Symposium On Concrete Durability Deicing Chemicals and Freezing-Thawing” to be held 17 June 2003 in Denver, Colorado (http://www.astm.com).

“Conference on Extending the Life of Bridges; Concrete and Composites; and Building, Masonry and Civil Structures” to be held 1-3 July 2003 in London, England (http://www.structuralfaultsandrepair.com).


“2nd International Symposium on Integrated Lifetime Engineering of Building and Civil Infrastructures” to be held 1-3 December 2003 in Kuopio, Finland (gunnar.astrom@ril.fi).

10. New Business

No new business.

12. Adjournment

A proposal to close the meeting was made by Matt Miltenberger and seconded by Dan Naus.