

**Minutes**  
**SEI of the ASCE: Technical Committee on Structural Control**  
**Meeting of May 20, 2001, 8:00 am – 2:00 pm, Washington D.C.**

The meeting was called to order by Satish Nagarajaiah, Chair. In attendance were:

Satish Nagarajaiah	Rice Univ.
Bill Spencer	Univ. of Notre Dame
Michael Symans	Washington St. Univ./ RPI
Luciana Barroso	Texas A&M
Rakesh Goel	Cal. Poly., San Luis Obispo
Erik Johnson	University of Southern California
Henri Gavin	Duke University
Anil Agrawal	City College of the City Univ. of New York
Genda Chen	University of Missouri, Rolla
Panos Tsopelas	Catholic College of America
Sheng-Guo Wang	Univ. of North Carolina, Charlotte
Linda Hanagan	Pennsylvania State
Andrei Reinhorn	SUNY Buffalo
Shirley Dyke	Washington Univ.
Narito Kurata	Kajima Corporation, Japan (Guest )
Seok J. Moon	Korea Inst. of Machinery and Materials, Univ. of Illinois (Guest)
Jagtar S. Khinda	Consulting Engineer, New York (Guest)

1. Introductions followed. New members and guests were welcomed by the chair. Guests were invited to apply for membership to the committee.

2. Luciana Barroso, Sheng-Guo Wang, Genda Chen , and Joel Conte (UCLA) are new members. Nagarajaiah asked that we seek additional members from industry.

3. The minutes of the last committee meeting in Philadelphia were distributed and approved.

4. Spencer summarized activities regarding the reviews of the structural control manuscripts submitted to the ASCE *Journal of Structural Engineering*. The Editorial Board meeting was one day earlier. Spencer is the associate editor specified to review most structural control papers. The timeframe for *Journal of Structural Engineering* manuscripts from receipt to publication is about 15 months. This year 24 manuscripts were submitted on structural control. The Journal of Structural Engineering is one of the top journals in ASCE in terms of its impact factor (0.549) which is an indication of the number of citations per published paper. The Journal of Engineering Mechanics is comparable (0.580). Also, the shelf-life of articles cited from the Journal of Structural Engineering is greater than 10 years. To submit a paper to the journal of structural engineering one must go through ASCE. There is no accelerated procedure. Spencer can be

contacted by email if there are questions about the submission process. A new electronic submission procedure is in the pilot testing phase.

5. Review of sessions at the 2001 Structures Congress organized on behalf of the committee:

*2001 Structures Congress: (5 sessions)*

Hanagan – Structural Control Provides Economic Solutions  
Agrawal – Practical Developments in Semi-active Damping Systems  
Symans – Seismic Protection Systems for Wood-Framed Buildings  
Tsopeles – Seismic Isolation and Energy Dissipation Systems  
Tsopeles – Innovative Seismic Protection Systems for Bridges

6. Review of sessions at various conferences organized on behalf of the committee:

*Second European Conference on Structural Control.*

Specific sessions include:

Agrawal/Yang – (2) sessions on the wind-excited benchmark problem solution  
Spencer – (1) session on the nonlinear benchmark building structure  
Dyke – paper on cable-stayed benchmark bridge problem definition

*ICOSSAR, 2001: (1 session)*

Spencer/Dyke – New Frontiers in Structural Control

*2001 Mechanics and Materials Conference: (4 sessions)*

Nagarajaiah/Johnson - Structural Control I: Smart Structural Systems and Devices  
Gavin/Nagarajaiah - Structural Control II: Semi-Active Seismic Isolation  
Beck - Health Monitoring II  
Dyke - Benchmark on Health Monitoring II

*2001 American Control Conference: (2 sessions)*

Dyke/Spencer – Structural Control Applications in Civil Engineering  
Dyke/Spencer – Damage Detection, Health Monitoring, and System Identification in Civil Engineering

*SPIE 2002 (S. C. Liu, Conference Chair)*

Gavin – Active/Passive/Hybrid Systems for Vibration Control

7. Review of sessions at the 2002 Structures Congress organized on behalf of the committee:

*2002 Structures Congress ( 2 sessions approved )*

Agrawal/Johnson – Recent Developments in Smart Damping of Structures  
Symans -- Base Isolation Systems for Near-Field Earthquakes

8. Nagarajaiah solicited session proposals for future conferences.

*2002 American Control Conference*

Johnson/Dyke – Structural Control

Johnson/Dyke – Structural Health Monitoring

*2002 Engineering Mechanics Conference*

Smyth – Structural Control

*2003 Structures Congress*

Hanagan – Building Applications of Control

Chen – Soil Structure Interaction

Barroso – TBD

*7th US National Conference on Earthquake Engineering, Boston, July 2002*

Gavin/Agrawal – Smart base isolation

Symans – Passive energy dissipation

Dyke – Benchmark bridge problem

Consider organizing some application-oriented panel discussion sessions during the conference.

*3rd World Conference on Structural Control, Como, Italy, April 2002 (3 sessions)*

Gavin will coordinate:

Dyke – 1 session on the benchmark bridge problem

Spencer – 1 session on the nonlinear benchmark

Yang – Wind Benchmark

Gavin/Nagarajaiah/Johnson – Base isolation benchmark

*SPIE 2002 (1 session)*

Gavin – Semi-active Control of Civil Structures

9. Special Issue on Semi-active Structural Control

Nagarajaiah/Spencer/Kunnath – 21 abstracts have been submitted for consideration in the special issue of the *Journal of Structural Engineering*. These papers will be reviewed. A typical issue of the journal has less than 20 papers, so any papers that are accepted and do not fit within the special issue will be published in subsequent issues of the journal. Paper submission deadline is July 31, 2001.

10. No new business.

11. Status of Benchmark Problems

Spencer – A special issue has been organized on the nonlinear building benchmark problem and the second generation wind benchmark problem. There are a total of about 35 abstracts submitted

for the issue. Full papers are due June 30. There are no plans to extend the 3rd generation benchmark building problem.

Yang/Agarawal – A new problem definition for the wind benchmark problem will be presented at the 3WCSC.

Gavin/Nagarajaiah/Johnson – Gavin presented the problem statement of the base isolation benchmark. Discussions lead to suggestions by the group. A problem definition paper will be presented at the 3WCSC.

Dyke – The benchmark cable stayed bridge problem statement (Phase I) was posted on the web site in October 2000. This problem is based on the Cape Girardeau bridge in Cape Girardeau Missouri. Issues discussed at the last committee meeting regarding the design of the bridge have been incorporated into the paper. 85 independent researchers have downloaded the data from an estimated 30 research groups. We expect that 10–15 groups are working on the problem. Phase II, which will consider transverse excitations and multi-support excitation is to be completed by Christmas. The phase I problem will be the subject of a session at the *7th US National Conference on Earthquake Engineering*. The problem (either phase I or phase II) will be the subject of a session at the *3rd World Conference on Structural Control*.

An overview of the problem statement was presented, and the three presentations were given on the bridge benchmark problem results to date:

1. Moon – Presented results on the use of an MR damper to control the bridge.
2. Agrawal – Presented results on the use of a resetting stiffness damper.
3. Spencer – Presented results on the use of a general semi-active device.

Spencer – An appropriate time/place next benchmark task group meeting will be determined.

The meeting was adjourned at 1:30 pm.

Respectfully submitted  
Shirley Dyke  
Secretary

Attachment I : Agenda  
Attachment II : Current Roster  
Attachment III : Committee Report