

AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS, INC.
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TC/TG/TRG MINUTES COVER SHEET

(Minutes of all TC/TG/TRG Meetings are to be distributed to all persons listed below within 60 days following the meeting)

TC/TG/TRG NO: TC 2.7 **DATE:** 12/15/11

TC/TG/TRG TITLE: Seismic and Wind Resistant Design

DATE OF MEETING: June 28, 2011 **Location:** Montreal, QC

MEMBERS PRESENT	YEAR APPTD.	MEMBERS ABSENT	YEAR APPTD.	EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE
James Carlson		Mike Froehlich		Dan Abbate
Doug Fitts		David Jeltos		Scott Campbell
John Giuliano		Eren Kalafat(int'l)		Stephen Duda
Patrick Marks		Michael Morby		Sami Elkhazim
Greg Meeuwssen		Karl Peterman		Rad Ganesh
Dan Rau				Matthew Hooti
Richard Sherren				Eli Howard
Jim Tauby				John Iacobellis
Don Warick, Jr.				Hunter Mattones
				Paul Meisel
				Roger Mundt
				Panos Papavizas
				Bob Reid
				Robert Simmons
				Josiah Wiley

DISTRIBUTION:

ALL MEMBERS/CM OF TC/TG/TRG
 Section 2 Section Head

TC 2.7, Seismic and Wind Resistant Design

Committee Scope: Technical Committee 2.7 is concerned with fundamental scientific and engineering design principles for seismic and wind resistant design of HVACR equipment and building mechanical/electrical service systems.

Chair: Greg Meeuwsen, The Trane Company, gmeeuwsen@trane.com
Vice-chair: Karl Peterman, Vibro-Acoustics, kpeterman@vibro-acoustics.com
Secretary: Robert Simmons, Petra Seismic Design, rsimmons@petraseismicdesign.com
Website: <http://www.ashrae.org/technology/page/1727>

1. Meeting was called to order at 3:35 PM.
2. All present, including members and guests, introduced themselves. See summary cover sheet above.
3. Quorum was established with 9 of 14 quorum voting members present. Non-quorum international member was not present.
4. Previous minutes from Las Vegas, Jan. 2011, were approved: (8,0,0,1)

5. TC Chair's Report (Greg Meeuwsen)

- A. TCs are asked to make sure their websites are up to date. We are to add 5-year Management By Objectives items to our website that focus on long-term planning.
- B. ASHRAE is once again considering charging speakers conference registration.
- C. Conference themes will be eliminated after Chicago meeting. So we will no longer have to try to shoehorn seismic and wind design into a "theme" when vying for programs.
- D. Ashrae is looking for input from TCs regarding how to improve speakers ability and improve the quality of programs. There has been feedback from members that the quality of some speakers has been poor.

6. Publications Subcommittee (Jim Carlson)

- A. ASHRAE Journal: In the wake of the earthquake and tsunami in Fukushima, Japan, Ashrae included articles in their April and May issues to inform members about lessons learned and seismic design issues to consider. Thanks to members of our TC2.7 that contributed their time to write the articles. See "Earthquake are we ready, by Jim Carlson and Robert Simmons in the April issue and Designing seismic..... by Jim Tauby in the May issue.
- B. Practical Guide:
Jim Tauby is under contract to update the Practical Guide to Seismic Restraint to reflect changes in codes, add a chapter for SPC171 regarding qualification of equipment, and other updates. The updates and revision were sent to TC2.7 for review and comment. Comments were incorporated and the draft will be sent to publications. The revised edition is expected to be available for purchase by the end of October.
- C. Handbook: The 2011 Handbook is now available with the updated Design for Seismic and Wind chapter.

In the handbook subcommittee discussion began regarding possible additions to the chapter in the future:

- How to restrain duct on the roof from wind loads with the least amount of affect to the roof weatherproofing. Bob Reid of TC5.2 offered to participate and liaison with 5.2.

- Design and attachment of roof curbs to resist wind and seismic
- Add a section with a flow chart that would provide the typical criteria and design process required for seismic and wind on a typical job.

We will schedule a subcommittee in the 2012 winter Chicago meeting to address these and any other relevant issues. Anyone with ideas or concerns regarding the chapter and a willingness to work are invited to the sub-committee.

7. **Programs Subcommittee** (Dick Sherren)

- A. 2011 Summer Meeting (Montreal) No Programs
- B. 2012 Winter Meeting (Chicago)
 - 1) Seminar: Back To Basics; Chair: Jim Tauby
 - a) Specifying Seismic Restraints – Paul Meisel
 - b) Specifying Wind Restraints – Richard Sherren
 - c) Code Changes for 2012 – Robert Simmons
 - 2) Forum: How are You Specifying Seismic Certification; Chair: Jim Carlson
- C. 2012 Summer Meeting (San Antonio)
 - 1) Seminar: HVAC Equipment Survival through Tornados, Hurricanes and Floods; Chair: Robert Simmons;
 - a) Discuss ICC 500, FEMA 361- Dan Rau to contact speaker TBD
 - b) Surviving Floods – Jim Carlson
 - c) IBC Hurricane Wind Loads & AHRI Wind standard- Panos Papavizas(tentative)
- D. 2013 Winter Meeting (Dallas)
 - 1) Conference Paper to discuss UC San Diego “Shake and Bake”testing; Chair: Dan Rau
Possible Speakers: Panos Papavizas – Cooling Tower results
Dr. Tara Hutchison – Lead investigator report.
 - 2) How to Obtain IBC Compliant Seismic Certification; Chair: Doug Fitts
 - a) Code Requirements: Robert Simmons
 - b) Analysis Methods: John Giuliano
 - c) Shake Table Tests: TBD – John G to inquire with ETL (shake table lab)
- E. 2013 Summer Meeting (Denver)
 - 1) Possible tour of shake table lab in Denver
- F. Other Ideas
 - 1) Seminar on Non-structural, ASCE-10 code updates.
 - 2) Seminar on new updated Practical Guide for Seismic Restraint for MEP, chair: Robert Simmons; Overview, Connections, System & Equipment
 - 3) (Jim Tauby, Jim Carlson, Bob Bachman, UC San Diego speaker).
- G. Note that all seminars must now contain New York PDH Objectives/requirements. There is a new program option called Conference Paper Session. It is a paper with less peer review than a Transaction/Symposium paper..... AKA “Symposium Light”. There would be one paper reviewer suggested by the cognizant chair. It is hoped that the shorter review process will encourage more papers. There was also discussion regarding the possibility providing a seminar at the EXPO during a CTI or AMCA slot.
- H. ASHRAE is currently not seeking a seismic PDS

8. **Membership** (Karl Peterman)

- A. Currently we have 14 members and 1 international member. In July we will have 4 voting members roll off and 3 will roll on as Voting members, giving us 13 members and 1 international member.

Rolling off: Greg Meeuwsen, Warren Blazier, David Jelts, Pat Marks. Roll on as new voting members: Panos Pappavizas, Dan Abbate, Scott Campbell All members are encouraged to reach out to other colleagues and related groups (PEER, MCEER, etc.) to invite new participants (especially consultants) to TC2.07.

B. Current officers include:

- 1) Greg Meeuwsen, Chair
- 2) Karl Peterman, Vice-Chair, Membership
- 3) Robert Simmons, Secretary
- 4) Jim Carlson, Handbook
- 5) Jim Tauby, Standards and Webmaster
- 6) Dick Sherren, Programs
- 7) Dan Rau, Research Chair
- 8) Don Warick, ALI Liaison
- 9) John Giuliano, Long Range Planning

C. New officers starting in July 2011

- 1) Karl Peterman, Chair
- 2) Robert Simmons, Vice-Chair, Membership
- 3) Pat Marks, Secretary
- 4) Jim Carlson, Handbook
- 5) Jim Tauby, Standards and Webmaster
- 6) Dick Sherren, Programs
- 7) Dan Rau, Research Chair
- 8) Don Warick, ALI Liaison
- 9) John Giuliano, Long Range Planning

9. **Research Subcommittee** (Dan Rau)

A. **Minutes for Research Subcommittee Breakfast – June 27, 2011 – Montreal**

- Strategic Plan: No Change. See the *ASHRAE Research Strategic Plan 2010-2015 – Navigation for a Sustainable Future*. Seismic and wind are referenced in the technical challenges for Goal 9.
- 8-10 research projects funded this spring. Only funding for 2 this fall
- Meeting reviewed most common reasons RTARS and Work Statements are returned.
- New Section 2 liaison: Iain Walker is rolling off as Section 2 research liaison. William McCoy will be the new liaison. Starts after Montreal
- Master calendar on the website has not been updated but I believe the next two RTAR deadlines are 8/15/2011 and 12/15/2011.

B. **Current TC2.7 Reserch**

- No RTAR's or Work Statements are active.
- RTAR 1601 – Numerical Seismic Modeling of HVACR Isolation/Restraint Systems has been officially withdrawn.
- RTAR 1598 – Shielding effects of screenwalls – it was discussed and generally agreed to revive this RTAR.
Dan Rau is working on this currently. Revising to narrow the focus to cooling towers and include research on screenwall effects on cooling tower performance. Working with Michael Morby at SPX Cooling Technologies. Currently doing literature search. CTI paper TP08-12 published in 2008 – Architectural Enclosure Influences on the performance of Field-Erected Cooling Towers. Goal is to evaluate both thermal performance impact and shielding effect of the enclosures. Need marketing data from CTI to develop information on the size of the industry in terms of \$\$.

To be completed by Chicago.

- RTAR - Piping connectors – Jim Carlson – Jim has begun work on this. To be completed by Chicago.
- Co-sponsor TC2.6 RTAR – Installed Performance of Vibration Isolators. Formerly RTAR 1560:
*Following is a summary of the RTAR, See Attachment A for the full copy:
Current building comfort and high tech needs for vibration isolation require better understanding of dynamic characteristics of vibration isolators than presently exists. High frequency vibration poses a particular problem because even though current industry standard isolators should theoretically provide effective isolation, actual installed performance has proven to fall short. This project will provide the ASHRAE community with methods of testing isolator performance, and provide a basis for the development of advanced test standards, which will be essential to adequately isolate HVAC&R systems to meet background sound and vibration criteria. Seismic and wind restraint tend to “short out” classic spring isolators. Presently there is no way to quantify the resulting reduction in isolation performance. This research will help provide a means to evaluate alternative isolation materials that may provide improved vibration isolation, shock absorption, and damped displacement.*

The research subcommittee discussed the RTAR and recommended that TC2.07 agree to co-sponsor the RTAR. Robert Simmons made a motion to approve co-sponsorship. Pat Marks seconded the motion. Motion carried (8,0,0,1)

C. Other research ideas:

- Research on “rules of thumb” for screw spacing. Shake curbs or similar sheet metal type items per AC 156.- Karl Peterman
- UCSD Testing –. NEES BNCS Five Story full-scale building for NCS testing:
- Construction has started. Preliminary mechanical system design is complete. Meeting on electrical power requirements was held last week. Shake testing at the end of this year. Burn portion of the test is planned as a controlled burn on the 4th floor of the building. Details not firm at this point.

10. Standards Subcommittee (Jim Tauby)

- A. SPC 171 Maintenance – Last meeting TC2.7 voted to form SSPC 171 to revise the standard to address any improvements or maintenance that may be needed. The standard must be revised to the ISO format. SPC 171 was submitted to ICC for reference in the IBC, but it was rejected due in part to the absence of the ISO format. There was also discussion on whether dynamic testing should be added. Jim Tauby was voted to be the SSP171 chair. He will send paperwork into ASHRAE to begin the process of forming the SSP171. The following people volunteered to serve on the committee: Robert Simmons, Doug Fitts, Don Warick, Jr., Scott Campbell, Jim Carlson, Greg Meeuwsen, Eli Howard, Mathew, and John Giuliano. We hope to have the paperwork into ASHRAE in time for Tech to vote in October, 2011 on the approval of the SSPC171 Chair and members. If approved we will schedule time at the winter 2012 meeting to begin work.
- B. Wind Standard –AHRI wind committee met and has started on a new standard. Robert Simmons will ask if EGSA may also be interested.
- C. Eli Howard with SMACNA reported that ICC is make changes in the way they reference standards. He will be attending the next ICC meeting and will report any changes we may need to know.

11. **Website** (Jim Tauby)

- A. New TC website is up and running. See <http://www.ashrae.org/technology/page/1727> . Past minutes are up on the site. We now need to add past programs. Forward PPT orPDF files you have for past programs you have given to Jim Tauby and Robert Simmons for inclusion on the web site.
- B. TCs are asked to make sure their websites are up to date. We are to add 5–year Management By Objectives items to our website that focus on long-term planning.

12. **Liaison Reports**

- A. TC 2.HVAC Security (Scott Campbell) – Interest is building. They hosted a seminar security operations for HVAC security. They are working on Guideline 29 (Risk Assessment) and proposing a practical guide.
- B. TC 2.6 (Pat Marks) – Pat reported on progress of SPC 197 that is meeting to investigate a Method of Test (MOT) for vibration isolation devices. The ISO Standard 10-846 is being investigated as a possible solution to what is needed to fill the SPC 197 MOT. Robert Simmons reported TC2.6 Vibration Isolation subcommittee has submitted a Research Topic Acceptance Request (RTAR) addressing installed performance of vibration isolators. The RTAR was returned and must be renewed with the new RTAR format. TC2.7 voted to co-sponsor the RTAR. The TC2.6 Vibration Isolation subcommittee also updated the VI schedule in the handbook.
- C. ASCE 7 (Jim Carlson) – The 2010 is now available. There are changes in the conduit, pipe, and duct exemptions to bring them more in line with standard practice. ASCE Commentary to address lingering problems was scheduled to be finished in April, 2011.
- D. ICC – (Jim Carlson) Chapter 17 of the IBC 2012 was revised to clear up language. Work on a commentary to further address grey areas is ongoing and due out in 2012. ASHRAE SPC 171 was submitted, but rejected due to absence of ISO format.
- E. BSSC (Scott Campbell) – No report. Jim Tauby will be joining group in 2011.
- F. VISCMA (Don Warick) – met Saturday, June 25th. Began new marketing emphasis. Look for new papers on their web. Working with FEMA to fund update of the Seismic Installation Manuals.
- G. SMACNA (Eli Howard) – New Seismic Restraint Manual published. OSHPD version available as PDF
- H. AHRI (Dan Abbate/Greg Meeuwesen) – Standard/guideline for seismic analysis of equipment is complete. Their seismic subcommittee approved the standard. It will then be sent to the Standards committee to vote in June, 2011. A committee has been set up to look at a wind certification for Florida.
- I. ATC69 (Jim Carlson) - FEMA 74, an e-document on Practical Application of Non-structural Restraint, has been updated. A specification has been added and direction to owners on identifying risks. Jim Carlson will send a link to the final ATC draft to TC2.7 for review.

13. **Old Business** – none.

14. **New Business**

- A. none

15. **Next Meeting:** Chicago, Jan. 24, 2012

16. **Adjournment** –The meeting was adjourned at 5:15 PM.

