

AMERICAN SOCIETY OF HEATING, REFRIGERATING, AND

AIR CONDITIONING ENGINEERS, INC.
 1791 Tullie Circle, NE / Atlanta, GA 30329
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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.:	4.10		TC/TG/TRG TITLE:	INDOOR ENVIRONMENTAL MODELING	
DATE OF MEETING:	Jan 26, 2004		LOCATION:	Anaheim, CA	
DATE ISSUED:	Jan 26, 2004		RECORDED BY:	Amy Musser	
VOTING MEMBERS	TERM		PRESENT	SUB-COMMITTEE CHAIRS	
	On	Off			
Schwarz, Walter, Chair	04	06	✓	Membership	Hosni, Mohammad
Dols, William (Stuart), Vice Chair	00	06	✓	Programs	Srebric, Jelena
Ensor, David	01	05	✓	Research	Phillips, Duncan
Kato, Shinsuke (Intl)	00	04	✓	Standards	Ensor, David
Tronville, Paolo (Intl)	02	06	✓	Web Page	Dols, W. Stuart
Musser, Amy, Secretary	01	05	✓	Secretary, Handbook	Musser, Amy
Phillips, Duncan	00	04	✓		
Srebric, Jelena	02	06	✓		
Khalifa, Hussein E.	02	06	✓		
Hosni, Mohammad	00	04	✓		
Kerr, Carolyn (Gemma)	02	06	✓		
Van Gilder, James	01	05	X		
Yang, Xudong (Don)	01	05	✓		
Lin, Chao-Hsin	03	07	✓		

Technical Committee 4.10 – Indoor Environmental Modeling

CORRESPONDING MEMBERS		PRESENT	CORRESPONDING MEMBERS		PRESENT
Anderson, Ren			Markel, Lawrence		
Arens, Edward			Markel, Morris		
Armstrong, Peter			Melikov, Arsen		
Axley, James			Murakami, Shuzo		
Baker, AJ			Nielsen, Peter		✓
Barakat, Sherif			Novaselac, Atila		✓
Barles, Pierre			O'Brien, Sean		
Beausoleil-Morrison, Ian			Offermann, Francis		
Becker, Bryan			Olesen, Bjarne		
Berkoe, Jonathan			Pei, Hsien-Sheng		
Blackmore, Byron			Peterson, Janice		
Carter, John			Rivers, Richard		
Chen, Qingyan		✓	Roberts, Jack		
Christianson, Leslie			Rogers, Lisa		
Clark, Daniel R.			Sanchez, Greg		✓
Colliver, Donald			Sawachi, Takao		
Emmerich, Steven			Seppanen, Olli		
Fanger, P. Ole			Sestak, George		
Farrington, Franklin			Shaw, Chia-Yu		
Gadgil, Ashok			Sinclair, Ray		
Gordon, Elliott			Teichman, Kevin		
Grimsrud, David			Tompkins, Dean		
Grot, Richard			Topp, Claus		
Haghighat, Fariborz			Vandermeullen, Paul		
Hall, John			VonKempski, Diotima		
Hensen, Jan			Walton, George		
Hernandez, Mark			Willman, Alexander		
Hirnikel, Dan			Yoshizawa, Susumu		
Horstman, Ray		✓	Zhang, Dexian		
Int-Hout, Daniel			Zhang, Jianshun (Jensen)		✓
Jones, Gordon			Zhang, Wei		
Jones, Robert					
Kelso, Richard					
Kirkpatrick, Allan					
Knappmiller, Kevin					
Krafthefer, Brian					
Levin, Hal					
Manning, Andy					

Technical Committee 4.10 – Indoor Environmental Modeling

ADDITIONAL ATTENDANCE			
James Bennett	CDC		
Scott Earnest	CDC		
Lebbin, Paul	KSU		
Hamid Rahai			
John Zhai	CU		
Society Liaisons, etc.		PRESENT	
Wray, Craig	TAC Section Head		
Hittle, Douglas	ALI Liaison		
Brandemuehl, Michael	Research Liaison		
Hermans, Richard D.	Standards Liaison		
Simmonds, Peter	Program Liaison		
Sachs, Harvey	Journal/Insights Liaison		
Mclvor, Arthur	TAC Chairman		
Listvan, Marilyn A.	Special Publications Liaison		
Ramspeck, Claire	Staff Liaison (Standards)		
Gulledge, Charles E.	TEGA Liaison		
Vaughn, Michael	Staff Liaison (Research)		
Vaughn, Michael	Staff Liaison (Tech. Services)		
Carcallen, George	Handbook Liason 2005 Chap 34 Fund.	✓	

1. **Call to Order:** Chairman Walter Schwarz called the meeting to order at 2:15 p.m.
2. **Welcome and introductions:** Walter Schwarz.
3. **Roll Call:** 11 out of 12 voting members and 2 of 2 international members were present and a quorum was established. **Minutes** from the last meeting held in Kansas City were reviewed and approved [**13-0-0-13** (For–Against–Abstain–Total Voting Members)].

4. **Announcements:**

Walt and Stuart attended a section 4 meeting and reported the following items:

- Program committee does not do quality control for programs. TCs are reminded that this is their responsibility.
- Starting this meeting they are capturing all files for seminars to make available on TC web sites. However, they haven't yet finalized an approval mechanism for TCs to monitor quality.
- Handbook was also emphasized. TC 4.1 has a new "learn by example" approach. They are using the ASHRAE HQ office building to build load calculation examples around. They are posting what they've done with it on their web site.
 - It was also requested that TCs look for "holes" in the Handbook and suggest research to address them
 - Paper version is the official version
 - TCs should consider how the handbook relates to homeland security

Walt attended the chairs meeting and reported:

- Only 1/3 of TCs have web sites. ASHRAE has a small amount of \$ for a college student to create web pages. Contact Mark Hegberg (TAC chairman)
- Program committee: There are usually 85-90 submissions, but were 135 for this meeting. Were able to do 100 this time.
- New rollover roster process. A mechanism is now in place to distribute excel spreadsheets to chairs, who change, and give to section head. Our deadline is end of Feb.
- We should consider whether we should develop standards and guidelines related to Homeland security. Email will be provided to members.

Craig Wray – TAC section head stopped in to greet us.

- Craig discussed the section meeting for TC chairs and VCs. Encouraged us to get involved and examine cross cutting issues.

5. **Membership:** Mohammad Hosni

- Several voting members are rolling off: Phillips, Hosni, and Kato.
- Jim VanGilder plans to remain involved, but will not be able to attend as regularly, and would step down if someone else is interested. It was decided to retain him as a voting member until at least the Nashville meeting, and to re-evaluate his ability to attend again at that time.
- New voting members who will come on after the June meeting are: John Zhai, James Bennett, and Peter Nielsen (Intl. Member)
- Several email addresses in our roster are incorrect, and aren't seeming to be fixed at the society level. Amy passed around a list for corrections to our mailing list. See her if you aren't getting TC 4.10 emails.

6. **Research:** Duncan Phillips

- Duncan presented a progress report on our Research Plan. A short summary is provided here.
 - Prioritized research projects – Both of these have either work statements under development, or work statements needing revision. The work statements are due in May at ASHRAE, so authors need to have them to Duncan by April 15 and we will need to do an email vote.
 - ***RTAR #2004-20: Modeling VOC Sorption of Building Materials and Its Impact on Indoor Air Quality – Phase II (Second phase of RP-1097)** (Jianshun Zhang)
 - ***Computational Prediction and Analysis of Natural WS 1271 – Modeling Low Velocity Large Scale Fluctuating Flows in Ventilated Spaces** (Ray Horstman to give Duncan the latest version)
 - Non-prioritized workstatements/RTARS
 - * **RTAR 2005-33: The Advantages of Coarse Grids on CFD Modeling of Indoor Environments** –was returned for minor issues. Duncan will try to still move it forward.

***Computational Prediction and Analysis of Natural Ventilation** (Yan Chen, Xudong Yang) – the word from Section 4 liaison was to submit the workstatement without an officially endorsed R-TAR. This was the R-TAR submitted for which we did not get a response from RAC in the Fall.

- RTARS waiting in the queue
 - *Quantifying the Macro Effects of Movement for Indoor Environmental Modeling** (Walter Schwarz)
 - *Characterization of the Longevity of an Airborne Pathogenic Particle for Indoor Environmental Modeling** (RTAR #2004-21 written by Ray Horstman)
- Other items
 - *Modeling Ventilated Environments with Large Internal Heat Loads** (WS written by Duncan Phillips)
- New items
 - *Air leakage data (needed for multizone modeling) is being pulled from the Ventilation and Infiltration chapter of the Handbook because of known and suspected problems with the data. Amy will prepare a discussion document for June.
 - *Biological contaminants from the human body – Don Yang will prepare discussion document for June.

7. Program: Jelena Srebric

- General information
 - All reviews must be done through Manuscript Central
 - Starting with this meeting, seminar slides will be posted in .pdf format by ASHRAE on the internet. Authors are being asked to sign release forms. (They are not required to do so, however.) There are future plans to provide audio and videotape of seminars.
 - Also in progress is a process for the TC to do some sort of quality control for seminar information that will be presented via the web.
 - Seminar chairs are asked to compile reviews of the seminar and submit during the meeting.
 - The program committee cannot approve all programs that are proposed. Symposiums (because they involve significant commitment) are automatic. Seminars are less likely to go through.
- The following program plan was discussed, voted on and approved **13-0-0-13**.
- Anaheim, CA – This meeting
 - **Modeling the Dispersion of Chem/Bio Contaminants** (Seminar) organized by Duncan Phillips. There were 2 sessions, with 80+ people attending each.
 - **Computer Modeling of Labs for Environmental Control** (Seminar) organized by Pat Carpenter sponsored/cosponsored by TC 9.10 Laboratory Systems/4.10 – This seminar did not make the program this time.
- Nashville, TN – Summer 2004 (packages due Feb 13, 2004)
 - **#1 Particulate Dispersion and Transport in Indoor Environments** – seminar organized by Yan Chen, will check with TC 2.4 for possible co-sponsor
 - **#2 Modeling Performing Arts Centers and Museums** – seminar organized by Duncan Phillips
- Orlando, FL – Winter 2005 (packages due August 6, 2004)
 - **Advances in Room Air Distribution** Symposium organized by Mo Hosni, abstracts due by Mar. 15, and papers due by May 15. Co-sponsored by TC5.3 Room Air Distribution
 - **Modeling and Measurement of Turbulence in Indoor Air Flow** organized by Ray Horstman
 - **Modeling and Measuring the Combined Air, Heat, Moisture and Pollutant Transfer through Building Walls** organized by Stuart Dols – will do call for papers
 - **Modeling the Sampling of Particulates** organized by Ray Horstman and James Bennett
- Denver, CO – Summer 2005 (packages due February 18, 2005)
 - **Material Emissions/Adsorption and IAQ** organized by Gemma Kerr. Has been postponed to Denver.
 - **Low-order Modeling of Room Air Flows** symposium organized by Ez Kalifa

8. **Handbook:** Amy Musser

- Or handbook chapter is due at ASHRAE HQ on May 17, 2004. We will need to do an email vote to approve the chapter.
- Amy distributed a schedule for completion of the chapter. Voting members, handbook committee members and other interested parties will receive the draft chapter on Feb. 20. They will have until Mar. 12 to submit comments directly to the author of each section, and authors will have until Apr. 2 to resolve comments with reviewers. The final version will come back to the voting members by Apr. 16, with votes solicited by May 7.
- The chapter name has been changed to “Indoor Environmental Modeling” to reflect our expanded scope.
- We are planning several enhancements to the e-version of the chapter. We will focus on these in June – they are due in August.

9. **Standards:** Dave Ensor

SPC 145 Test Methods for Assessing Performance of Gas Phase Air Cleaning Equipment – an outdated draft standard was used by a person not on the committee as the basis for a paper that presented an incorrect interpretation of the standard.

SPC 52.2 MOT/Part Size Eff. Proc. For Testing Air Cleaning Devices. There is an issue with electronic air cleaners losing performance in real applications. There is a suspected interaction with skin creams, etc.

SPC 161 Air Quality Within Commercial Aircraft. Getting close to completion after 8 years.

SPC 113 MOT Room Air Diffusion. Nearly complete.

10. **Web Site:** Stuart Dols

- We were the 2nd TC to move to the new web site template – check out our site!
- See Stuart if your name and contact info. Isn't there and you want it to be.

11. **Relevant Activities**

TC1.2 Instruments and Measurements - Arsen Melikov

TC2.1 Physiology and Human Environment - Diotima Von Kempster

TC2.3 Gaseous Air Contaminants/Removal Equipment - Gemma Kerr

TC2.4 Particulate Air Contaminants/Removal Equipment - Dave Ensor (They have an RP on indoor/outdoor relationships that is now starting)

TC5.3 Room Air Distribution – Jianshun Zhang (They have an interesting research idea on task ambient ventilation)

TC5.8 Industrial Ventilation - Duncan Phillips (They have RTARS on industrial displacement ventilation and energy conservation in industrial facilities)

TC9.3 *Transportation* - Ray Horstman (They are discussing a recent research project where a researcher found much higher than expected transmission of colds on SF/Denver flights. There is interest in an RTAR to replicate the experiment with handwashing and other hygiene practices in place to see if this will reduce it.)

12. **New Business**

- **CONGRATULATIONS** to **Peter Nielsen** who has been recognized as an ASHRAE Fellow! Also, **Mo Hosni** has been named a fellow of ASME!!!

13. A move to **adjourn** was made and approved.