

**AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING
ENGINEERS, INC.**

**1791 Tullie Circle, N.E./Atlanta, GA 30329
404-636-8400**

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 9.9 DATE 12/05/2013

TC/TG/TRG TITLE Mission Critical Facilities, Data Centers, Technology Spaces and Electronic Equipment

DATE OF MEETING 12/05/2013 LOCATION Phone Conference

Voting MEMBERS	YEAR APPTD	PRESENT ABSENT	Voting MEMBERS	YEAR APPTD	PRESENT ABSENT
Robin Steinbrecher - P	10		Ecton English - U	10	
Madhu Iyengar - U	13		Don Beaty - G	10	
Nick Gangemi - G	11		Greg Jeffers - G	12	
Jason Matteson - P	13		John Bean - P	10	
Mukesh Khattar - U	09		Rhonda Johnson - P	10	
David Quirk - G	09		Herb Villa - G	10	
Chris Kurkjian - G	11				
David Moss - P	11				
Corresponding Members		Recorded			

Note:

- P – producer
- G – general
- U - user

DISTRIBUTION

<i>All Members of TC/TG/TRG plus the following:</i>	
TAC Section Head:	Dr. Tom Lawrence
TAC Chair:	William F McQuade, PE, LEED AP
Manager Of Standards	Stephanie C Reiniche
Manager Of Research & Technical Services	Mike Vaughn

- I. Call to order
- II. Roll call of Voting Member
- III. Approval of minutes from last meeting (letter ballot distributed)
- IV. Review of Letter Ballots

Dave reviewed approved letter ballots:

- Liquid cooling book 2nd edition (13-0-0)
- PUE book (11-1-0-1)
- Energy Modeling Work Statement (13-0-0)
- ESD Research Scope Extension (13-0-0)
- RP1675 – CFD research (13-0-0)

V. Programs - Nick

- NY – upload date is January 3rd for seminars and forums – 1 TP session, 1 CP session, 3 seminars
- Seattle – Conference paper and tech sessions submittal dates are passed. Feb 13th for seminars and forum submissions. No confirmation on accepted papers.
- Chicago – Anything that was not accepted must be resubmitted.

VI. Research – Mike P. not present

- 1499-RP, ESD and humidity study – Roger – Proposal to extend research to get to lower humidity levels. Dave reported that the funding extension has been approved. Thermal Guideline book would be updated upon completion of report.
- DC modeling – Tom – Positive, unanimous vote with TC 9.9. Co-sponsorship with SPC 90.4P. Failed to get co-sponsorship from TC 4.9 on energy modeling. Tom said they voting negatively on it. We may have to start over as a result. General feeling is that there is too much in this work statement (e.g. \$2M research required compared with \$200k requested). Send additional suggestions to Tom D or Dave Q
- RTAR-1675 – CFD Experimental Benchmark Data for Data Center Numerical Modeling. Co-sponsor with TC4.10, CFD research – Mark Seymour – RTAR was rejected by RAC. Dave said that anyone who wants to be on the agenda at RAC meetings can put in a request to Mike Vaughn. Mark may take that avenue.
- NFPA – Detection in high airflow environments. Dave may be able to present that at the NYC meeting.

VII. Website - Ecton

- Increasing site activity. Ecton will give a full report in NYC.

VIII. Handbook – Bob McFarlane

- Material is about 2/3 edited.

- Three areas still need to assistance – Contact Dave Q if you want to help.
 - Bob requested help on overhead duct designs, absorption chillers, VFD control, and heat reclaim. Volunteers encouraged to get in touch with Bob.
- Deadline for the handbook is later next year.
- Illustrations will be needed eventually and that will require much work.
- Bob expects to send out the edited sections to the authors next week.

IX. ITE OEM

- Pressure and delta T whitepaper – Dave Moss – Additional data has been acquired and incorporated. Will hit the TC after the NYC meeting.
- Storage whitepaper – Jon Fitch – Look for a draft in around three months.
- Plan is to combine all the whitepapers into a book eventually.
- Contamination book – PJ – The book is nearly done. He's looking to be done before the NYC meeting.
- Effect of RH and pollutants – Team has been meeting regularly. Measurements are in process in Beijing. A literature survey is also underway to assist in determining whether an 'X' factor for RH can be derived.
- Transient (rate of change) – Jon Fitch – 20 C/hour is being interpreted as an instantaneous value by end customers. There is some contention on this with hard drive manufacturers. This will be reported on in a future meeting. The Thermal Guidelines may be updated eventually as a result.

X. Membership – Jack

- ASHRAE is still getting requests to join. The roster will be updated at the end of the year.
- Dave recommended that contact information must be updated at the ASHRAE site as that is what the TC uses.
- There will be a focus on international membership by ASHRAE leadership.

XI. Publications

- PUE book likely ready for NYC.
- Liquid cooling book 2nd edition coming soon.

XII. Standards – Rick Pavlak

- 90.1 has two upcoming conference calls – finalization of their work statement and plan for the 2016 standard. There is little on data centers.
- 90.4 is out for advisory public review which closes by the end of the month. No response to comments is required.
- 127 – John Bean – names have been submitted for membership. John is looking for any end users. Mukesh said he would like to be considered.

XIII. New items – none

XIV. Adjournment

The call concluded at 5:00 pm EDT. Members will be notified of the next Conference Call. The call in information will be distributed and posted on the TC website