

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

**1791 Tullie Circle, N.E./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. TC 9.9 DATE 09/05/2013

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

DATE OF MEETING 09/05/2013 LOCATION Phone Conference

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

Opening Remarks

The meeting was opened at 4:00 pm EDT. David Quirk introduced himself

Agenda:

Denver Meeting Minutes

Dave indicated the minutes were distributed via letter ballot for approval.

Programs Subcommittee – Nick Gangemi, Chair

Key Dates for NYC:

- All key dates have passed for any submissions.
- We had 9 separate papers submitted for conference papers. Only three were accepted and will comprise one session.
- We had three papers submitted for a transaction session and it has been accepted.
- We have at least 10 papers submitted for seminars and they are all under review for accept or reject.

ASHRAE Annual Meeting 2014 – Seattle, Wash; June 28 – July 2, 2014

Key Dates for Seattle:

- Sept. 23
- Conference Paper abstracts due
- Sept. 23
- Technical Papers due
- Oct. 7
- Conference Abstract accept/reject notifications
- Jan. 6, 2014
- Web Site Opens for Seminar and Forum Proposals
- Jan. 9, 2014
- Final Conference Papers Submitted for Review (Includes Bio, Learning Objectives and Methods of Assessment)
- Feb. 13

- Seminar and Forum Program Proposals Due

Speaker Registration Fee

- If your paper or program is accepted for presentation, you will receive a 75% discount off of the regular registration fee
- For the 2014 Annual Seattle Conference, the following Speaker registration fees and policies will apply:
- \$130 Member/Non-member Speaker Registration Fee

Conference Tracks:

- *Track 1: Indoor Environment – Health, Comfort and Productivity*
- *Track 2: Research Summit*
- *Track 3: Ground Source Heat Pumps: State of the Art Design, Performance and Research*
- *Track 4: HVAC&R Systems & Equipment*
- Track 5: HVAC&R Fundamentals and Applications
- *Track 6: Standards, Guidelines and Codes*
- *Track 7: Refrigeration*
- *Track 8: Installation, Commissioning, Operation, Maintenance of Existing Buildings*
- *Track 9: Professional Skills*

Future Winter and Annual Conferences

- Winter 2014 – New York, New York; Jan. 18 – 22
- Annual 2014 – Seattle, Wash; June 28 – July 2
- Winter 2015 – Chicago, Illinois; Jan. 24 – 28
- Annual 2015 – Atlanta, Georgia; June 27 – July 1

Research Subcommittee

- 1499-RP – ESD study
 - An update was provided in Denver and another is planned for NYC.
- DC energy modeling Work Statement for 90.4P
 - Tom Davidson provided a brief update on progress. Final work statement is expected to be ready shortly for TC vote.

- 1675-RTAR - CFD Experimental Benchmark Data for Data Center Numerical Modeling. Joint effort with TC4.10.
 - Mark Seymour provided update. Approved proposal will be sent to RAC for review and approval again.
- NFPA FPRF research project
 - Dave provided update on current progress. NFPA is in the middle of the research effort. Final results expected to be available by NYC.

Handbook Subcommittee – Robert McFarlane, Chair

New outline developed and being worked on by a task group. Initial draft of the rewrite targeted for the new year. Bob requested a couple additional volunteers to round out the effort.

Webmaster – Ecton English

- 1) The "Activities" section of the webpage has been removed. All the related SEO files have been updated to reflect the change.
- 2) Since posting the "Networking Thermal Guidelines" on July 21st, it has been downloaded 185 times.
- 3) The most popular download is still the 2011 Thermal Guidelines which has not been available for a while now @ 2,506 downloads. The second is the "Standard 90.1-2010 Applicability to Datacom" whitepaper @ 2,219 downloads. The third is the "IT Thermal Equipment & Controls" whitepaper @ 1,827 downloads.
- 4) The bookstore links are the most popular links on the site at 317 hits since July 1st. It would be interesting to know the actual book sales stats to see if there's a correlation.
- 5) All other updates are the typical website updates (conference dates, deadlines, etc.)

Standards Subcommittee - 90.1- Rick Pavlak, Formal Liaison

90.1

- 90.1-2013 which will include the Alternative Compliance Path using PUE is in the final editing and review stage. Possible it will complete by the 90.1 fall interim meeting.
- 90.1 Fall Interim Meeting will be in Atlanta October 16 and 17th.
- The fall meeting will be about setting goals for the 2016 update.

LEED for Data Centers - Rick Pavlak

- LEEDv4 was voted out for publication by GreenBuild Event in Philadelphia in November

SPC127 - Rick Pavlak

- TC9.9 approved the reformation of SPC127, submission made to Standards Council for approval

90.4P – Dave Quirk, Formal Liaison

Advisory Public Review (APR) is expected for Oct/Nov timeframe.

IT OEM Subcommittee – Roger Schmidt, Chair

Contamination Book (Singh)

- Have the first drafts ready for most of the chapters
- Need volunteers to review the 7 chapters
 - One or two volunteers per chapter would do
 - Review may involve more than just review. It may involve adding material to the chapter or some minor rearrangement, but no major surgery
 - Contact PJ if interested Prabjit Singh <pjsingh@us.ibm.com>

Liquid Cooling Book Edits (Ellison)

- Cleaning up after final comments
- To TC9.9 for review by end of month

Storage Whitepaper (Fitch)

- Storage white paper has a strong team with good cross-industry representation
- The paper has a detailed outline with 9 sections and we already have a draft of 6 of those sections
- Some sections are out for review to subject matter experts
- We are working with a battery subject matter expert to help write the battery reliability section which is especially important for storage
- Revisiting non-operational storage conditions for hard drives and for HDD based storage arrays. Current non-op conditions allow storage for an unlimited period of time. However, HDD supplier data indicates the drives are not capable of indefinite storage at the typical non-op storage conditions listed for most storage arrays. We are going to propose aligning HDD non-op specs and HDD storage array non-op specs
- We are still a couple of months away from generating a set of draft storage recommendations and best practices we can share with a larger audience

IT delta-T and Pressure Collateral (Moss)

- To be combined with earlier papers into book
- Still gathering pressure data
 - Initially 3 systems presented
 - Have now expanded to 6 with a few more expected
- Initial draft complete and out for review amongst contributors
- Target TC9.9 review around January meeting

RH Effort (Schmidt/Singh)

- Collecting gas samples in China
- Reference search- building repository of RH related collateral
- Chamber test program- several vendors conducting RH tests (coupons) in chambers to serve as baseline for future testing with mixed gas included
- Future RTAR for field tests of known pollution levels (low, med, high)

Publications Subcommittee – Don Beaty, Chair

- Agreement with TGG to jointly publish a book on PUE. A task group established and is reviewing. Committee vote forthcoming.

- Structural Book 2nd being updated. Committee vote forthcoming.
- Economizer book going through final reviews before committee vote.

Membership Subcommittee – Jack Glass, Chair

- Membership updates – current roster is up over 260 members with 17 international countries represented.

Open Discussions

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