

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

TC/TG/TRG NO: TC 9.9 Date: May 7, 2015 Location: Conference Call

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

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VOTING MEMBERS	YEAR	PRESENT	VOTES		VOTING MEMBERS	YEAR	PRESENT	VOTES	
			(1)	(2)				(1)	(2)
Andrew Baxter	11	P			Chris Kurkjian	11			
Tom Davidson	02	P			Jason Matteson	13	P		
Paul Finch	10	P			David Moss	11			
Jack Glass	05	P			Richard Pavlak	05	P		
John Groenewold	05	P			David Quirk	09	P		
Madhu Lyengar	13				Jeff Rutt	05	P		
Greg Jeffers	12	P			R. Steinbrecher	10	P		
Dave Kelley	14				Edward Tsui	13			
All attendees – see appendix at end									

All Members of TC/TG/MTG/TRG plus the following:	
TAC Section Head	Lynn Werman
TAC Chair	Eric Adams
All Committee Liaisons as Shown on TC/TG/MTG/TRG Rosters	Malcom Knight
Manager of Standards	Stephanie Reiniche
Manager of Research & Technical Services	Mike Vaughn

Call to Order**Dave Quirk**

- Roll call of voting members

Previous Meeting Minutes**Dave Quirk**

- The Chicago minutes were distributed to the voting members and were subsequently approved. Notes should be on the website shortly.
- Voted on and re-approved for 1675-RTAR for CFD Experimental Benchmark and Numerical Modeling. This is a joint co-sponsored research project with TC4.10.
- Dave Quirk will send the vote approvals to Jim of TC4.10 after the call today. The remainder of the responses came in this week.

Programs Subcommittee**Nick Gangemi (Dave Quirk provided update)**

- Atlanta schedule – Annual Conference @ Hilton with a tour of the HQ being offered
 - Only (2) TC 9.9 seminars accepted (due to heavy volume of accepted submissions in Chicago and not many tracks aligning with TC9.9 this time)
 - All research submissions / papers received the go ahead and will end up dominating Atlanta sessions
 - Details and deadlines are on the websites (TC9.9 and ASHRAE sites)
 - Anything not submitted can be sent to Dave Quirk and Robin Steinbrecher for consideration to determine if it can be fit on the Monday meeting agenda. Anything from the Monday's does not get recorded.
 - Reminder - book hotels soon as the Hilton is already sold out
- Orlando schedule – Winter Conference
 - Deadlines for technical and conference papers have passed
 - Deadline for seminars, forums and workshops is August 10
 - All details on the website (TC9.9 and ASHRAE sites)
 - Have not done a workshop yet, would be interested in someone putting something together for this
 - Submissions are managed by Nick Gangemi

Research Subcommittee

- 1499-RP – ESD Study
 - Closed
 - Not posted for purchase yet
 - There was a request for an email to be sent once it is published (Dave Quirk will follow up with Steve Comstock)
- 1675-RTAR – CFD Experimental Guidelines for Data Center Numerical Modeling (Joint Effort with TC4.10)
 - Reworded to General Purpose based on objection from one RAC member
 - Proposal returned (not rejected) asking for research to be done with a general purpose CFD tool and

- not anything dedicated data center
- Still worthwhile to do this research
- Does not affect generating the experimental data
- Most importantly is the data is produced and well documented
- Voted and approved many times by 4.10 and 9.9 so it is widely supported in its present form
- Modifications were to make the approach more generic (over simplified)
- 1739-WS DC Energy Modeling Work Statement for 90.4
 - Previously rejected
 - No update, in a holding pattern
 - Number of hurdles based on feedback from RAC
 - Tom Davidson is working with Henry and the DOE on working out confounding and a path forward
 - Draft will be circulated the first week of June for comments and feedback prior to committee vote
- Impact of High Humidity and Gaseous Contamination on the Reliability Operation of Information Technology Equipment in Data Centers
 - Reviewed and approved by TC9.9 and RAC
 - TC9.9 was a cosponsor along with TC2.3
 - Will push forward
 - Should be complete within the next few weeks once in-kind funding comment and test matrix comment are addressed
 - Made it through first time around; big win

Handbook

Bob McFarlane

- Handbook has been set in type, the proofs have been reviewed and corrections made
- Book titles were edited based on comments from Publications
- Waiting for the book to be distributed

Webmaster

Ecton English

- No update

Standards Subcommittee

- SSPC90.1 - Rick Pavlak
 - (2) meetings this year (Chicago and recently an interim meeting in Atlanta)
 - Getting ready to finalize addendums for 2016, with publication / voting expected about one year from summer Atlanta meeting
 - No new addendums directly affecting data centers, all have been seen at least in their first publication
 - Big changes revolve around economizers, deletion of data center weather table, weather data itself with the addition of a climate zone

- Addendum voted on in Atlanta and will go out for public review that will affect design for everyone (data center or not) – pushing for higher Delta T's on cooling coils (minimum 15°F ΔT)
- This addendum will be on the website in the next month with a 45 day review for industry comment
- Dave Quirk to send email once addendum comes out with key points to consider
- Still waiting for AHRI to finalize the new CRAC table
- ASHRAE has listservs you can sign up for to be notified when public reviews are submitted; strongly encourage everyone sign up for this so no reviews are missed
- SPC90.4P – Dave Quirk
 - (2) meetings this year (Chicago and Atlanta) and also held at least (2) conference calls with another scheduled soon
 - Aggressive schedule to publish standard by 2016 to coincide with 90.1
 - Voted on first public review in Chicago, 600+ comments were received in the 45 days
 - Opted not to respond to all comments individually but rather addressed globally; will put out again for another 45 day public review before Atlanta
 - Currently a lot of contention and debate between how things will be dealt with in regards to 90.4 and 90.1
 - 90.4 voted out an internal proposal to 90.1 for a sunset clause – committees not on the same page on how to deal with delineation
 - Unclear as to how this will be resolved between the two committees and standards
 - Lots of industry polarizing views as well as internal to the committees
 - Public review will come out shortly likely followed by another public review
 - Still a lot of work to be done
 - Circular definition of computer room and data center – dealing with it based on a power requirement; in search of something that will clearly delineate a data center from a computer in a closet
 - One proposal was for 90.4 to port over a lot of the requirements from 90.1 and 90.4 just makes reference to 90.1. This gets 90.4 included in IECC and DOE references by default, which means State adoptions by default.
- SPC127 / AHRI 1360 – John Bean
 - AHRI team working to generate some new tables for minimum SCOPs; AHRI has collected data. Original tables were based on 2007; now 2012 has been recognized by 90.1.
 - 2012 threw in some extra overhead for water and glycol cooled equipment to include pumps, drycoolers, cooling towers, etc. in the SCOP calcs. Values should be adjusted because there is extra power to be considered within the standard. AHRI is trying to determine position on more lenient values.
 - Also dealing with the testing of upflow units – figuring a duct design system that can fit in the third party lab. Waiting for AHRI to inform the committee what can actually be done in the labs with ongoing collaboration.

- (2) face to face meetings each year and holding phone calls monthly.
- Net progress is the team has made it through the document. Some illustrations need to be updated and some areas are light, but requesting all comments back to John by the end of May so they may be edited and added to document for Atlanta.
- Goal is to walk away from Atlanta with a document that is very close to being ready for public review; likely additional phone iterations will be required after Atlanta

IT OEM Subcommittee

Roger Schmidt

- IT Performance Book is in progress, wider review likely in May
 - New resources working on Chapter 1 and Power
- Power Thermal Guidelines White Paper – to ensure thermal compatibility with different kinds of IT equipment that occupy the same physical space and airstreams
 - 30+ page draft
 - Following power from the street to the plug of the IT equipment
 - Progress is going very well, hoping draft will be ready for larger review by fall 2015
 - The focus is NOT energy efficiency; focus is temperature humidity and airflow compatibility with IT equipment
- Thermal Guidelines
 - Possible changes to the envelop based on ESD research
 - Comments due back by end of May at which point Dave Quirk will send out to larger committee to hopefully have thorough comments before Atlanta
 - 4th edition to be approved prior to translation; translation to occur in approximately two months
- Energy Efficient Metrics for Servers
 - Will be published in about a month; lots of editing done over the past three months
 - A lot of work done by Neil Chauhan at DLB Associates
 - ASHRAE has signed off
 - Plan to be in the bookstore by Atlanta

Publications Subcommittee

Don Beaty

- Recent publications
 - No update

Membership Subcommittee

Jack Glass

- Membership updates
 - Changes to roster after Atlanta meeting
 - ◆ Voting members - 3 rolling off and 3 rolling on
 - ◆ July 1 Robin Steinbrecher will take over TC 9.9

- Healthy roster of provisional corresponding member = 22 (12 in 2nd year and 10 in 1st year)
- Many countries represented by the 22 – Majority from US, Argentina, Canada, India, Australia,, Philippines
- Corresponding membership 250+

Open Discussion

- None

New Topics

- None

Adjournment

5:05pm EDT

- The call concluded at 5pm EDT. Members will be notified of the next conference call. The call in information will be distributed and posted on the TC website.