

TC 9.9 Meeting Minutes
Monday January 25, 2010
Orlando, FL, USA

Page 1

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

TC/TG/TRG NO: **TC 9.9** Date: **January 25, 2010** Location: **Orlando, FL, USA**

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

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General Meeting on January 25th - Call to order

Chairman, Fred Stack called the meeting to order at 2:15 p.m.

Attendees

Name

Jack Glass	Rick Pavlak
David Moss	Don Beaty
Greg Jeffers	Tom Davidson
Michael Kummert	Mukesh Khattar
Nick Gangemi	Ian Seaton
Herb Villa	Bob Sullivan
Geoff Lawler	PJ Singh
Jonathan Spreeman	Robin
Edward Gutowski	Steinbrecher
Munther Salim	Doug McLellan
Seurrabh Shrirartara	Terry Rogers
Mark Seymor	Bill McKinnon
Gerald Wyatt	Bob Blough
Eileen Jensen	Bill Simpson
David Quirk	Roger Schmidt
Joe Dorsey	Yuri Luz
Sherman Ikemoto	Nemat Lotfi
Mark Bender	Richard Jones
Chris Kurchian	Mike Scofield
Vali Sorell	

TC 9.9 Meeting Minutes
Monday January 25, 2010
Orlando, FL, USA

Page 2

Fred Stack	Milton Meckler
Tim McCann	Jeff Trower
Mike Patterson	Mark Germagian
David Bonifacic	John Lane
Jeff Stein	Harvey Brickman
Craig Crader	Jon Fitch
Ecton English	Andrew Baxter

Orlando Meeting Review

Fred Stack reviewed TC 9.9's Chicago activities. ????

Roll call of voting members established a quorum was present.

Fred Stack reviewed the agenda for the meeting, officer positions, voting members and schedule of changes,

Training Session – 90.1

Joe Deringer presented an overview of Standard 90.1 to the members of TC 9.9. ASHRAE, California and others are driving toward Net-Zero buildings. Standard 90.1 provides minimum requirements, not best practices. It does not now cover industrial or manufacturing processes (which included data centers also), or O&M. The new version of 90.1 is considering including data centers and O&M. The energy modeling included in Appendix G of the Standard is used in the LEED certification process. The Standard is used by 16 countries, and utilities for incentive programs. In 1973 (oil shock) only 1 energy code existed, in France for building insulation. In 1975 the first generation of 90.1 was published.

TC 9.9 Meeting Minutes
Monday January 25, 2010
Orlando, FL, USA

Page 3

Process: Mandatory, Prescriptive, energy Cost budget (ECB), covers Envelope, function of climate zone; Lighting, covers auto shutoff, and other controls, limit on power density designed.

Energy Policy Act of 1993 required all states to adopt 90.1

TC 9.9 Programs

Vali Sorell provided a review of upcoming meetings:

- Theme for Las Vegas (June 2010): “Zero Energy Design”
- Theme for Montreal (January 2011): “Net-Zero Design”

Vali explained the concept of ‘Tracks’ being used by ASHRAE to organize the presentation topics at future meetings. He requested suggestions for Track topics from the members. The following were suggested:

- Mission Critical and Energy Efficiency Compatibility
- Re-Use of Process Heat
- Moving Mission Critical Facilities Toward Net-Zero
- Liquid Cooling to Save Energy

Herb Villa has presenters to submit for seminar in Albuquerque
Herb, Ecton, Kishor are all interested in being session chairs.

Vali reviewed the key dates for the Albuquerque and Las Vegas meetings:

- Albuquerque:
 - February 12, 2010: Seminar and Forum program proposals due
 - February 12, 2010: Author paper review complete and/or acceptance notification
 - March 12, 2010: Final Technical and Conference papers due
 - May 7, 2010: Upload of PPTs begin
 - June 11, 2010: PPTs due online
 - June 26, 2010: Speaker’s lounge opens
- Las Vegas:
 - April 9, 2010: Conference paper abstracts due
 - April 9, 2010: Full Technical papers due
 - May 7, 2010: Author notification of abstract acceptance for conference papers
 - June 4, 2010: Web site opens for Seminar and Forum Program proposals
 - August 6, 2010: Draft Conference papers due

TC 9.9 Meeting Minutes
Monday January 25, 2010
Orlando, FL, USA

Page 4

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- August 6, 2010: Seminar and Forum program proposals due
 - September 10, 2010: Technical paper reviews complete
 - September 10, 2010: Conference paper reviews complete
 - September 13, 2010: Final Technical papers due
 - October 8, 2010: Final Conference papers due
 - December 10, 2010: Upload of PPTs begin
 - Jan 14, 2011: All PPTs due online
 - Jan 29, 2011: Speaker's lounge opens

There is no published schedule for the Montreal conference yet.

Research Subcommittee Report

Robin Steinbrecher – Intel, reviewed the TC 9.9 Research status. Work Statement 1499 is in process for humidity and electrostatic discharge. An RTAR is under development for the effects of contamination on IT equipment reliability.

Priorities for research topics were reviewed from a survey of the TC members, and are updated each year. A new survey was conducted at the meeting.

PJ Singh – IBM, presented a proposed research topic on effects of gaseous contamination. Issues such as density of electronic components and lead –free solder, can make IT equipment more susceptible to corrosion failure. The project will attempt to determine limits of gaseous contamination which impact reliability. This will help determine the safe applicability of air-side economizers. Cu corrosion is a function of humidity, Silver is a function of temperature. Three corrosivity methods are being considered: Cu and Si coupon coulometric reduction method, microbalance quartz crystal real-time corrosion method, resistance real time corrosion method.

DOE/ASHRAE Data Center Training Report

Fred Stack reviewed the status of the DOE Save Energy Now training program. Roger Schmidt, David Quirk, Don Beaty and other DLB employees, worked very hard to put the program into final consistent form. A subcommittee was formed to manage the material, develop Train-the –Trainer program, lead by Nick Gangemi, with Beaty, Schmidt, Glass, Tschudi, and Bill Orthello as members. A review of the training course will be held tomorrow at 1:00 pm at the TC 9.9 working session. DOE hired a third party to qualify the hosts of the training courses.

TC 9.9 Meeting Minutes
Monday January 25, 2010
Orlando, FL, USA

Page 5

Green Grid Discussion

Don Beaty lead a discussion about the relationship between ASHRAE TC 9.9 and the Green Grid. He showed the latest book, Real-Time Energy Consumption Measurements in Data Centers, which was a collaboration between TC9.9 and the Green Grid. Mike Patterson, Intel, will make a presentation to the Green Grid about ASHRAE as part of a session of partners with the Green Grid.

Fred Stack discussed a suggestion by the Green Grid about whether ASHRAE would make a standard of the concept of PUE measurement. It is expected this would involve methods of measurement, prediction for Greenfield sites. Members offered comments encouraging adoption of PUE into ASHRAE. Some suggested that the process could be similar to Std 183 for Peak Heating and Cooling Load determination. Fred Stack asked for, and received a consensus to tell the Green Grid we would consider taking PUE to an ASHRAE standard. Discussion continued about the effort required compared to other pressing issues such as updating the Trend Chart.

SPC-127 Review and Update

Fred Stack, as Chair of SPC 127, updated the Committee as to the status of the standard. Requests have been made to change the term SCOP (Sensible Coefficient of Performance) which is used elsewhere, expand the equipment covered, delete the ASCOP method and use a method similar to iEER. Rating method has been changed to use higher return air and entering chilled water temperatures. The standard also changed location of static pressure measurement point to out in front of unit. Ratings are all at full capacity, rating is net sensible cooling/kw input. The new ratings also include a common method for sound measurements.

ASHRAE 90.1 Panel Discussion

To further the understanding of the proposed changes to Standard 90.1, a panel discussion was organized. Fred Stack, Jack Glass, David Quirk, Don Beaty and Roger Schmidt made up the members of the panel. The panel members discussed their experiences with 90.1 including their attendance at some of the Subcommittee and Full Committee meetings at the Orlando conference. Members were encouraged to ask questions and to be aware of upcoming addendums that will be coming out for public review.

TC 9.9 Meeting Minutes
Monday January 25, 2010
Orlando, FL, USA

Page 6

Publications- Economizer Book Update

Economizer Book Update

Frank Morrison – BAC, gave an update on the status of the Economizer Book. Chapters 6 of 8 are complete. He reported that graphics are about 20% complete. Final draft is expected by April 1, 2010. The goal is to publish the book by the June meeting.

Meeting Adjourned

The Meeting was adjourned at 9:30 p.m.

Jack Glass – TC 9.9 Secretary