

TC 9.9 Meeting Minutes
Monday June 27, 2011
Montreal, Canada

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

TC/TG/TRG NO: **TC 9.9** Date: **June 27, 2011** Location: **Montreal, Canada**

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

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General Meeting on June 27th - Call to order

Chairman, Jack Glass called the meeting to order at 2:15 p.m.

| Voting MEMBERS | YEAR APPTD | PRESENT ABSENT | Voting MEMBERS | YEAR APPTD | PRESENT ABSENT |
|-----------------------|------------|-------------------|----------------|------------|-------------------|
| Robin Steinbrecher | 10 | P | Ecton English | 10 | P |
| Terry Rodgers | 09 | P | Don Beaty | 10 | P |
| Richard Pavlak | 08 | P | Jack Glass | 09 | P |
| Roger Schmidt | 09 | P | John Bean | 10 | P |
| Mukesh Khattar | 09 | A | Joseph Gangemi | 10 | P |
| David Quirk | 09 | P | Rhonda Johnson | 10 | A |
| Doug McLellan | 09 | A | Herb Villa | 10 | A |
| | | | Francis Mills | 09 | Int'l |
| Corresponding Members | | See Below | | | |

| | |
|--|-------------------------------------|
| TAC Section Head: Dr. Tom Lawrence | |
| TAC Chair: Charles Wilkin | |
| Manager Of Standards Manager Of Research & Technical Services | Stephanie C Reiniche Mike Vaughn |

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Attendees

Name

| | |
|---------------------|-------------------|
| Jack Glass | Rick Pavlak |
| David Moss | Don Beaty |
| Greg Jeffers | Tom Davidson |
| Nick Gangemi | Ian Seaton |
| Geoff Lawler | PJ Singh |
| David Quirk | RobinSteinbrecher |
| Chris Kurchian | Terry Rogers |
| Vali Sorell | Roger Schmidt |
| Fred Stack | Jeff Trower |
| Mike Patterson | Andrew Baxter |
| Craig Crader | Art Giesler |
| Ecton English | Bill Tschudi |
| Chris Muller | John Bean |
| Sang Lee | Ted Jagusztyn |
| Mike Kaler | Vello Ehvert |
| Fran Coffey | Jeff Rutt |
| Jay Ramkumar | Tim Lehotsky |
| Chang-Seo Lee | Bob McFarlane |
| Dave Schaaf | Mike Ohadi |
| David Copeland | Schlomo Novotny |
| Saurabh Shrivaskava | Stuart Lawrence |
| Brad Stanley | Ecton English |
| | Terry Rogers |

IT Subcommittee

Robin Steinbrecher reviewed the new Thermal Guidelines and discussed the reliability factor introduced in the White Paper. There were questions regarding cable ratings for high temperature, and also a discussion of the tradeoffs due to increase in fan and processor power as a result of higher temperatures.

Roger Schmidt reviewed the new Power trends projections out to 2020. Power density is projected to flatten out. It was noted that this covers air flow units only .

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90.1 Update

Rick Pavlak gave an update on SSPC90.1. Addendum cj is out, which covers modeling a data center for LEED. Members were encouraged to send in comments.

Don Beaty reviewed the CMP he submitted to use PUE as an Alternative Compliance Path for compliance with the energy code. The proposal has been well received by the 90.1 Mech. Subcommittee. It was noted that another proposal was submitted to eliminate all DC exemptions which currently exist in the Code. Don reviewed other exemptions he submitted and that were rejected previously by the 90.1 MSC.

Research

Mike Patterson reported the recommendation of the PES regarding bidders for the ESD Research project. A vote was taken and TC 9.9 voted unanimously to endorse the recommendation.

Jim VanGilder reported on the completion of RP-1487 by TC 4.10 regarding Simplified Rack-level Modeling.

An RTAR for contamination research was discussed and considering the current industry surveys and the potential long timeframe for completion, it was the general consensus that this RTAR be canceled.

Liquid Cooling

Bill Tschudi reported on the activity of the High Performance Computing User Group. The group has a goal to establish guidelines to eliminate compressor-based cooling and also minimize water use. They want to bring this to TC 9.9 to develop guidelines similar to Air thermal guidelines. Three classes are proposed, W1, W2, and W3, 65F, 63 to 90F, and 63 to 109F. It was noted that HPC represents an area where liquid cooling will most likely be adopted first.

Roger Schmidt reviewed a liquid cooling document in development by the IT subcommittee. It proposes four classes, however, the temperature ranges are very similar to the HPC proposal. The two groups will continue to collaborate with a goal of developing a common guideline.

Data Center Trends

John Bean lead a discussion on recent changes in observed in data centers. Some of the key points covered were:

Containment - most thought containment is necessary for new and existing high density data centers;

Pumping - pumping loops are being designed with primary or secondary vfd;

Humidification - many data centers are operating with no humidification systems and depend on geographic humidity as sufficient. It was noted that ESD is the number one cause of processor failures, 250v can damage a cpu.

VFD Fan Control - many data center controls don't separate fan speed from chilled water valve control.

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Data Center Reliability

Vali Sorell followed up issues raised in Las Vegas at Forum on data center reliability. It was noted that the approach varies with industry. The benefits of using Failure Effect and Mode Analysis were also discussed.

SPC-127

Fred Stack reported that the final document was voted out and submitted to ASHRAE for public review.

Contamination

Bill Tschudi reported on contamination surveys conducted with the National Labs. He offered that filtration is adequate for most particulate contamination. He also suggested that gaseous contamination was thought to be misrepresented in the TC 9.9 White paper, and didn't think research was linked to IT failures. Don Beaty and others countered that the White Paper did not exaggerate the risk of corrosion and did not discourage airside economizer operation. Don read from the Executive Summary of the White Paper: "This paper is primarily targeted at a minority of data centers which may have harmful environments arising from the ingress of outdoor particulate and /or gaseous contamination. In some rare instances, contamination has been known to be generated within the data center".

It was noted that data center surveys, particularly outside the U.S., are uncovering a growing number of IT failures linked to contamination. Additional surveys will take place by the ITE manufacturers and the results will be shared with TC 9.9.

Publications

Don Beaty reported three books in progress: Thermal Guidelines and Power Trends for revisions and the new Economizer book.

SPC-189

Jeff Rutt reported on the status of SPC-189. He will continue to report status changes as they affect data centers as the Liaison from TC 9.9 pending approval from 189 which is expected at this meeting.

Programs

Nick Gangemi reviewed deadlines for future conferences. He also solicited topics for future presentations. All key dates for Program submissions are listed on the TC 9.9 website.

Membership

Jack Glass reviewed the status of TC 9.9 membership and the changes that have taken place since the Las Vegas meeting. He reported that the number of new Provisional Corresponding Members has increased to 22 with more in queue to be added to the roster.

Meeting Adjourned

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The Meeting was adjourned at 8:30 p.m.

Jack Glass – TC 9.9 Chair