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

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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 5/11/2010

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

DATE OF MEETING 5/11/2010 LOCATION Phone Conference

Voting MEMBERS	YEAR APPTD	PRESENT ABSENT	Voting MEMBERS	YEAR APPTD	PRESENT ABSENT
David Moss	06	P	Chris Malone	06	A
Terry Rodgers	09	P	Tom Davidson	08	P
Richard Pavlak	08	P	Jack Glass	09	A
Roger Schmidt	09	A	Tim McCann	06	P
Mukesh Khattar	09	P	John Groenewold	06	A
David Quirk	09	P	Mike Patterson	06	P
Doug McLellan	09	A	Francis Mills	09	Int'l
Fred Stack	08	P			
Corresponding Members		Not Recorded			

DISTRIBUTION

All Members of TC/TG/TRG plus the following:	
TAC Section Head: Van Baxter	
TAC Chair: Don Brundage	
Manager Of Standards	Stephanie C Reiniche
Manager Of Research & Technical Services	Mike Vaughn

These draft minutes have not been approved and are not the official, approved record until approved by this committee.

Roster Voting Member Role Call

- Quorum present 8/5/0/1 (Present / Absent / Int'l / Chair). Phone records show 72 total participants.

Research Subcommittee Robin Steinbrecher chair

- The first agenda item was to discuss the proposed RTAR sent to all members on "Data Center Gaseous Contamination Limits and Means of Monitoring". This RTAR will be voted on this week by the voting members with a goal of unanimous consensus that the RTAR should be approved for submission. Several constructive comments were received. They will be added to the distributed draft and sent out for vote. The comments were:

    - Plan to adjust the frequency of sampling to change the estimated cost to a value below $200k.
    - Add a third item to the objectives - Perform background literature search and provide report that summarizes the findings.
    - Add a fourth item to the objectives – The study should report on the various HASL approaches to addressing the RoHS compliance requirements with a summary of the various effectiveness's , cost and performance, of each.

- There was one comment that the section on "Justification and Value to ASHRAE" should be enhanced to align more closely with the ASHRAE Goals.
- It was announced that LBNL has a parallel research project with a focused objective of increasing the adoption of air economizers. Some of their preliminary findings is the contamination issue is impacting data centers that are not using air economizers, thus the solution is not the exclusion of air economizers. LBNL has been in contact with the team that has worked on this RTAR to insure there is no duplication of effort. LBNL has also committed to collaborate with the successful bidder on this RTAR once it is an active project.
- We are attempting to have TC2.3 as a co-sponsor of this RTAR

Task Force draft report review on "Recommendations for Measuring and Reporting Overall Data Center Efficiency" – Measuring PUE

- This is a task force of members from 7x24 Exchange, TGG, SVLG, DOE, EPA, USGBC and ASHRAE. Mike Patterson is our representative on this task force.
- The draft document was provided by the task force (forwarded to all TC 9.9 members) for our review and comment. Mike will meet with the team next week and communicate our feedback.
- We had a lively, passionate discussion. The key themes discussed were:
    - ASHRAE has always focused on Site Energy vs Source Energy (90.1 and 189 both address Site Energy) Various documents were discussed that highlight the great disagreement within the market on what Source weighting factors should be and the limitation of a National weighting vs regional or other differentiation. These weighting factors can be very political.

- The draft paper uses the Source Energy weighting factors from the EPA (national weightings) normalize for electricity being a 1.0. The normalization was done because most (~95%+) data centers today are full electric.
- Some felt the document needs to clearly explain that this is the first step on a journey that will evolve to more integrate requirements over time. One question was will this evolve to a GHG metric vs just an energy metric.
- There was some concern that having 4 PUE values for different levels of accuracy of how the "IT load" is measured may cheapen the metric. Others felt it was cheapened already by not being able to recognize how a user was measuring their IT load. This draft proposal helps to define the level of accuracy in the IT load measurement by use of subscripts.

Programs Subcommittee Vali Sorel Chair

1. Vali was not able to make the meeting call so I do not have an update for Las Vegas.
2. The published technical program for Albuquerque has been revised in the online electronic version to show an additional Seminar #7 on Sunday from 8:00 to 9:30 that is jointly sponsored by TC7.9 and TC9.9. TC 7.9 covers Building Commissioning. There are two presentations in this Seminar

1. Reliability-Centered Commissioning Service for Mission Critical Data Center Facilities

Yanzheng (Don) Guan, Ph.D., P.E., CxA, CEM, LEED AP *Reliatech, Reston, VA*

Even though a not frequently discussed topic, reliability-centered commissioning service is crucial to avoid down-time and to maintain energy efficiency for mission critical data center facilities. The unique challenges of commissioning, re-commissioning and retro-commissioning data centers and other mission critical facilities will be addressed in the seminar. Additionally, in an effort to incorporate commissioning as part of the sustainable project delivery process, we are developing an innovative "paperless" commissioning technology, which could eliminate much of the paper-intensive process and integrate commissioning with data center facility service and management.

2. Data vs. Dorm: Mission Critical Data Centers and Residential Hall LEED Gold Case Studies

James Vallort, P.E., Member*, Environmental Systems Design, Chicago, IL*

In our experience, the commissioning process for a residential hall that is pursuing LEED Gold status presents a set of issues that are surprisingly similar to the issues raised in the process of commissioning a mission critical data center. While implementation is customized to each

application, a solid commissioning process can be applied to both. A case study of commissioning for a data center and a residence hall will be presented highlighting the common process steps and resulting benefits for each facilities unique use.

Standards subcommittee 90.1 Rick Pavlak Chair

- Not covered in meeting due to time constraints
- The 90.1 MCS is working on resolving the 31 comments made to addendum BU during its last Public Review. It appears all comments will be able to be cleared without the need to go back out for another public review. (The delay such a third public review would create would mean bu would not be in the 2010 printed version.) The TC 9.9 voting members played a significant role with their unanimous vote to demonstrate to the MCS the importance of having bu included

Handbook Subcommittee Doug McLellan Chair

- Doug was not able to make the call
- His subcommittee has been meeting to resolve the issues raised in Orlando. They have one open question and were seeking guidance from the membership on whether to include PUE in the Handbook. The answer from this conference call was Yes it should be included, but only as a general definition with the statement that its definition is currently being further clarified and that the best use of the PUE metric today is as a trend within an existing data center and as a method of comparing data centers where it is known that the method of measurement is identical between the data centers being compared.

The next meetings is scheduled for the June 15 at 4:00 EST

The call in information will be

USA phone 866 962-6634

Global phone 857 350-9999

Passcode 10793151