

Technical Committee 6.9 - Thermal Storage
General Meeting Minutes – Las Vegas, Nevada
January 31, 2011

Minutes:

1. Preliminaries

- a. The meeting was convened at 2:15 PM by John Nix, Chair.
- b. The agenda and sign in sheet were distributed.
- c. A roll call of voting members was taken.
- d. A quorum of Committee Members was noted as being present (per roster 11 total voting members). There were 34 in attendance: 8 voting, 12 corresponding, and 14 guests.
- e. Self introductions were made.
- f. No changes to the agenda were proposed.
- g. Minutes from the summer 2010 Albuquerque NM meeting were reviewed and approved unanimously.

2. Announcements by John Nix, TC 6.9 Committee Chair

- a. Standard 189 requires a minimum 10% peak demand reduction. TC 6.9 to interface with 189 committee to make sure that thermal storage is an option
- b. With the help of TC 6.9 members, Lucas Hyman has authored a book on sustainable thermal storage to be published by McGraw Hill August 2011
- c. DYK and Natgun have merged to form DN tanks.
- d. John Lau is the new BAC rep and will be attending TC 6.9 committee meetings
- e. Jeff Malpass is the Crom rep and will be attending TC 6.9 committee meetings
- f. Rupal Choski will no longer be the AHRI rep.

3. Liaison Reports

- a. Discussed long-term plans to develop professional development course. John Nix would like TC 6.9 to update the existing 8-hour seminar course on thermal storage.
 - i. AHRI volunteered to assist

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- b. Section 6 TC Section Head, John Dunlap
 - i. Gary Phetteplace was awarded the Hightower Award
 - ii. Multi Task Group (MTG) encourages outside participation; TC to assign 1 member each
 - iii. Great TC 6.9 web site
 - iv. The final version of the advance energy design guide will be available May 11
 - v. ASHRAE is considering eliminating (or reducing) speakers free registration. The TC discussion appeared to be against this idea.
 - vi. Recommended using Google groups to facilitate electronic meetings
 - vii. Bring your passport to the Summer meeting in Montreal

4. Handbook, Guy Frankenfield

- a. The 2012 HVAC Systems and Equipment handbook milestone revision dates were discussed.
 - **June 26th, 2010** – Authors complete first draft and submit to Guy Frankenfield. Utilize track changes with the word document version of the chapter. Guy to distribute to the reviewers.
 - **March 11th, 2011** – Reviewers complete their review and return their comments to Guy Frankenfield. Steve Benz to provide the final voting member review. Guy to distribute comments back to the authors.
 - **April 15th, 2011** – Authors complete changes and re-submit to Guy Frankenfield.
 - **May 16th, 2011** – Guy to distribute the final DRAFT to the TC.
 - **June 27th, 2011** – TC subcommittee and TC 6.9 vote on this final DRAFT of the Handbook revisions. If approved by the TC, then submit to ASHRAE Handbook Liason and Committee for publication.
- b. Guy reviewed the handbook lead authors and their responsibilities.
 - i. Review existing chapter:
 - 1. Delete old or obsolete – Jeff Malpass
 - 2. Provide a more in depth thermocline discussion – Jeff Malpass
 - 3. Update references – Jeff Malpass
 - ii. Add an example problem for both ice and chilled water TES – Lucas Hyman & Brian Silvetti
 - iii. Add a new section including TES for DX cooling – Robert Willis

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- c. Reviewer Subcommittee. A minimum of 3 reviewers (at least 2 voting members) are required to comment and edit the revisions provided by authors.
 - Steve Benz (voting member)
 - Rupal Choski (voting member)
 - Geoffrey Bares
 - Ken Fulk
 - Bill Bahnfleth
 - Maurice "Bud" Wildin
- d. 2016 Handbook Edition – Subcommittee to begin discussion in 2012.
 - i. Add a discussion on sustainability and/or grid reliability
 - ii. Add discussion, if appropriate, on the Emergency Cooling research results

5. Programs, Geoff Bares

- a. No thermal storage programs were accepted for the Albuquerque conference and those programs were resubmitted for Las Vegas
- b. No programs were accepted for the Las Vegas conference and the "Dry Climate" seminar will be resubmitted for San Antonio
- c. **FUTURE PROGRAM - MONTREAL JUN 25-29, 2011:** Theme, "Sustainability Knows No Borders" (Alternative technologies, net-zero buildings, engineering tools, HVAC&R fundamentals and commissioning)
 - Submittal deadline of program abstracts for Seminars & Forums is February 14, 2011
 - Seminar submissions should include six (6) Learning Objectives and ten (10) Questions/Answers for the session.
 - A short biography for each speaker will be required so that the program can be submitted to USGBC for LEED-AP credits.
 - Conference tracks available at www.ashrae.org/montreal
 - Planned Seminars:
 - "Net-Zero Energy Design with TES"**
Seminar chair - Prof. Moncef Krarti, University of Colorado
 - Yorgi D. - Virtual case studies to illustrate technologies.

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- Real Net Zero impacts on the Grid – EPRI data on CO₂e?
 - Paul T. - Definitions of Net Zero design.
 - Potential Seminars:
 - **“Thermal Energy Storage: Making the Smart Grid Work”**
Seminar chair – Geoff Bares, CB&I (try to cosponsor with another TC)
 - Robert Willis, Ice Energy DX systems
 - Mark MacCracken, Calmac ice systems
 - d. **FUTURE PROGRAM - CHICAGO JAN 21-25, 2012:** Theme, “The Impact of HVAC&R on Our Daily Lives”
 - Deadline for submission of Conference Paper Abstracts and Full Transaction Papers is April 18, 2011.
 - Submittal deadline of program bids with abstracts for Seminars & Forums is July 2011.
 - Conference tracks available at www.ashrae.org/chicago
 - Planned Seminars:
 - **“Treatment of Water & Ice Based TES Systems for Control of Corrosion, Microbiology and Solids Accumulation”**
Seminar chair – Jon Cohen, H-O-H Water Treatment
co-sponsored with TC 3.6, Water Treatment?
 - Henry Becker, H-O-H Water Technology
 - Frank Morrison, BAC
 - Philip Yu, Nalco
 - John Andrepont, Cool Solutions
 - **“Successful Thermal Storage Case Studies across the Application Spectrum”**
Seminar chair – Lucas Hyman, Goss Engineering
 - HVAC peak shaving, Joe Swann, Crom Corp
 - TIC – Guy Frankenfield, DN Tanks
 - Ice + geothermal – Ed Lohrenz, Geo-xergy Systems
 - Ice Slurry, Shlomi(?) Rott, IDE Technologies
- Potential transaction paper John Lau, BAC

e. **FUTURE PROGRAM – SAN ANTONIO JUN 23-28, 2012**

Conference themes will be discontinued, starting with this conference

“Effective Design and Operation of Thermal Energy Storage Systems in a Dry Climate”

Seminar chair - Guy Frankenfield, Natgun

- John Andrepont, Cool Solutions chilled water systems
- Robert Willis, Ice Energy DX systems
- Mark MacCracken, Calmac ice systems

f. Updates from CEC

- Speaker Evaluations:
“Speakers who receive three scores of 3.5 or less will be prohibited from speaking again until that author presents proof of having successfully completed speaker training.”
- Presentations at TC Meetings:
Due to large number of declined seminars, CEC is willing to promote presentations at TC meetings, including the supply of A/V equipment and advertisement in the conference program. Awaiting further details.

g. Complementary Registrations Remain Unchanged:

- Conference & Transaction Paper Authors – Full meeting
- Seminar Speakers and Forum Moderators – Full Meeting
- Speakers who decline to be recorded pay regular registration fees
- Session Chairs – Full Meeting

6. Standards, Robert Willis

- a. 17 attendees
- b. The subcommittee will initiate the process of replacing standards 94.1 and 94.3 with ANSI/AHRI 900
- c. ANSI/AHRI 900 (IP) and 901 (SI) are available from AHRI’s website
 - Unitary thermal storage has been added to the standard
 - Ice harvesters, generators, and slurry systems have been removed from the standard
- d. ANSI/ASHRAE Standard 150-2000 (RA 2004) – Method of Testing the Performance of Cool Storage Systems
 - SPC 150 is reviewing the standard for footnote removal and simplification

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- Members will review the standard and provide comments by March 1, 2011
 - A conference call will be scheduled for April 2011 to review comments
 - SPC 150 will vote to send the revisions to public review during the 2011 annual meeting
- e. AHRI Standard 1270P (IP) and 1271 (SI) Seismic Qualifications of HVACR Equipment
- A new standard is currently under development
 - Discussed in Seminar 25

7. Website, David Bain

- a. Continuing great job on the web site
- b. Send David subcommittee minutes for posting

8. Long Range Planning, John Nix

- a. Update and present 8-hour Thermal Storage Seminar
- b. Update Thermal Storage Design Guide
- c. Increase the number of programs accepted for ASHRAE conferences
- d. Someone to contact special publications

9. Research, Brian Silvetti

- a. RTAR 1576 - Guy Frankenfield reported on the progress of the Hall Levin group regarding the emissions research project. Little progress to date, but recommended that we delay work statement for six months.
- b. John Nix will begin an RTAR on procedures to determine the impact of the TES on emissions for local geographical areas.
- c. WS1607 – TES with wind energy- WS was return with comments. Some comments questioned the suitability of the research for ASHRAE. Larry Markel met with RAC to clarify their objections and he will be rewriting the WS to address their concerns.
- d. TC 6.9 cosponsor of TC1.10 (lead TC) on CHP Design Guide Update. Ready to bid in the spring. John Andrepont is the TC 6.9 representative on the PES/PMS
- e. PMS 1387 Don Felton has submitted the final report and the PMS found no substantive issues. Kansas State made a presentation to the committee in Albuquerque but we did not conduct a final vote at that time pending some corrections. Four PMS members were present at today's meeting to form a quorum and voted to recommend that TC

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6.9 accept the final report, pending very minor corrections. Fifth affirmative vote was received by mail to make the vote unanimous.

10. Old Business

- a. None

11. New Business

- a. We need to increase member recognition. The TC needs to submit through the channels. John asked Lucas to research awards requirements.

12. **Motion for adjournment** by Steve Benz, seconded by Lucas Hyman, motion passed unanimously. The meeting adjourned at 4:15 PM.