

ASHRAE TC 1.10 COMMITTEE MINUTES
Dallas, TX
January 30, 2007

The meeting was called to order by Chairman Jay Jayaraman at 3:30 PM.

1. Chairman Jay Jayaraman welcomed all members and acknowledged the visitors.
2. Self-introductions were made by all present. There are 14 Voting Members (2 international) of which 8 were present; it was confirmed that a quorum existed.
3. Riyaz Papar –Secretary of the TC - read the TC 1.10 mission statement.
4. Copies of the Minutes of the meeting held in Quebec City, QC were made available to the TC. Rich Sweetser moved that the Quebec City meeting minutes be accepted as written. Tim Wagner seconded the motion. The motion passed (For: 7; Against: 0, Abstain: 1, Absent: 6).
5. Section Head Report – Charles Wilkin
Section Head - TAC Section 1 attended TC 1.10 meeting and reported as follows:
 - RAC has reported that there is a surplus of research funds. This means that there is a very high probability of getting research proposals funded this year. TC's are requested to submit their completed Work Statements to RAC at the earliest possible.
 - Consider some TC member for nomination for the Hightower award. ASHRAE now considers multiple years of effort instead of just the past one year. Secondly, a subjective paragraph can be added to justify a person's nomination. The individual's bio needs to be updated on the ASHRAE website before the nomination.
 - Section head will help TC Chair to ensure that complaints and needs get resolved easily.
 - Roster updates for all the TC's are due by Tuesday (01/30/07) evening.
 - TC Chair to provide input on feedback form on different issues including liaison support.
6. Chairman's Report – Jay Jayaraman
A new registration policy will be in effect starting from the Long Beach, CA meeting as follows:
 - Paper authors receive a full complimentary meeting registration
 - Seminar speakers and Forum Moderators will receive a one-day complimentary registration for the day that they speak
 - Session Chairs of transactions and seminars would be required to purchase registration.

There was discussion on this issue and the TC decided to write a communiqué and send it to the Section Head with an urgent request to forward it to BOD. Details of this topic are provided in a later section.

There was a presentation by the Electronic Communication Committee (ECC) at the TC Chairs breakfast on Sunday (01/28/07). ASHRAE has made staff available (up to 4 people) to help TC's update their websites. ASHRAE realizes that there have been problems with the

website and updating – specifically issues with back up. But all those have been taken care of. In the future, updating of websites by TC's will be automated to the extent possible.

The ASHRAE biography section is finally updated. It no longer comprises of multiple databases and ASHRAE members are requested to update their bios on the website.

There is strong urge to move to paperless meetings keeping in mind the theme of sustainability, reducing greenhouse emissions, etc. Several committees have already adopted the paperless meeting and realized numerous advantages.

TC 1.10 has previously nominated people for the Hightower award. Jay will continue to nominate more members for the award on behalf of TC 1.10.

7. Sub-committee Reports:

a) Programs: Rich Sweetser

Rich reported on the two Seminars that were held at the Dallas meeting:

- Seminar – CHP: New Energy Efficiency Tools for Sustainable Building Design
There were two speakers (Harold Valencia, Nitin Pathakji). Edward Mardiat couldn't attend due to personal reasons. 60 people attended the seminar.
- Seminar – A Walk on the Thermal Side: Moving CHP into the MainStream.
This was co-sponsored with TC 8.3. There were three speakers (Gearoid Foley, Timothy Wagner, Reinhard Radermacher). 60 people attended the seminar.

The deadline for submitting programs for the Long Beach, CA meeting is February 9th. The following programs are proposed for Long Beach, CA:

Priority #1 Seminar

True Sustainability: Environmental and Economic Benefits from CTIC (Combustion Turbine Inlet Cooling), Chair: Dharam Punwani, Avalon Consulting

1. Evaporative Cooling: Good for Economics and the Environment, Pat Graef, Munters Corp.
2. Wet Compression for CTIC, John Kraft, Caldwell Energy Company
3. Thermal Energy Storage Applied to CTIS Yielding Energy and Economic Sustainability, John Andrepont, The Cool Solutions Company
4. Packaged Chiller Systems for CTIC Improving Power Generation Economics and Emissions Reduction, Craig Hulbert, TAS

Priority #2 Seminar

California Gold Rush: Cashing in on Sustainability with CHP in California, Chair: Richard Sweetser, EXERGY Partners Corp.

1. Packaged CHP at the Ronald Regan Library: three microturbine-based systems delivering 960 kWe power, 387 RT cooling and 1.5 MBH heating, Dr. Timothy Wagner, United Technologies

2. CHP at LAX: Los Angeles International Airport CHP system utilizing Combustion Turbines, HRSGs, Back-Pressure Steam Turbine-Drive Chillers and Single-Effect Absorption Chillers, Ian Spanswick, Johnson Controls
3. Television and Motion Picture Fund Hospital by integrating six 75 kWe CHP modules and a 150 RT engine-driven chiller into the “Glitter Palace” is Saving Money, Reducing GHG Emissions and Continuing to Save Lives, Bill Martini, Tecogen
4. The Future of Sustainable CHP design in California – and elsewhere – depends on T/E: Understand the importance of thermal to electric load matching, Gearoid Foley, Integrated CHP Systems, Inc.

Priority #3 Forum

Private Wires: An idea whose time has come because of Energy Security, Sustainability and Reliability? Moderator - Richard Sweetser, EXERGY Partners Corp.

Rich Sweetser made a motion to approve and submit the above programs for the Long Beach, CA meeting. Harold Smith seconded the motion. The motion carried unanimously (For: 8; Against: 0, Abstain: 0, Absent: 6).

Ali Jalalzadeh expressed an interest to develop programs on micro CHP, which would be applicable to the residential sector.

b) Research: Ali Jalalzadeh

Ali attended the Research Subcommittee Chairs’ breakfast meeting on Monday (01/19/07) and reported on the following topics:

1. Jim Braun is TC 1.10 Research Liaison.
2. There are no open RTAR’s or Workstatements for TC 1.10.
3. RAC announced a decline in submittals of RTAR’s and Workstatements coupled with additional funding being raised over the previous year has resulted in more money being available for research. Therefore, RAC stated more Research Projects are needed. ASHRAE typically funds 20-25 projects per year.
4. RAC issued a feedback survey to obtain information on why the number of RTAR and WS submittals has decreased over the last three to four years.
5. Two sources of co-funding for ASHRAE Research Projects were announced. Both Programs are under the California Energy Commission:
 - Public Interest Energy Research Program (PIER) - Administered by San Diego State Univ. Foundation; \$50K in Grants available for selected ASHRAE Projects.
 - Building Energy Research Grant (BERG) Program - Project durations limited to 24 months; Rewards up to \$200K for projects; More information at www.energy.ca.gov/contracts/pier_berg/index.html
6. Sustainability, base line building data and zero energy design are the topics of interest.
7. Lowest bidder is not a constraint anymore.
8. Before submitting an RTAR it is advisable to get feedback from Jim Braun.
9. A TC can submit up to a maximum of two RTARs per meeting.

There was discussion in the TC as regards Terry Townsend's commitment to fund the design guide on district cooling. This was made during Townsend's meeting with the Dubai ASHRAE chapter. TC 6.2 (District Energy) would be the cognizant TC for this design guide. TC 1.10 members want to investigate if this would be a good opportunity to cooperate with TC 6.2 and develop a more comprehensive district energy design guide. Note, "Cogeneration" design guide was published in 1996. It is clearly outdated and does not do very good service and needs a revision anyway. Ali will contact the TC 6.2 research chair (David Wade) and investigate the opportunity further.

Hywel Davies, who was attending TC 1.10 meeting as a Guest, discussed funding a study of district heating and cooling projects in the UK. He expects this project to start this quarter. He mentioned that it would be ideal to cooperate with ASHRAE on such a project but it may be difficult to do so. Further correspondence and communication between TC 1.10 and Davies will continue as the research study proceeds further.

Timothy Wagner, Riyaz Papar and Abdi Zaltash attended the PMS meeting for RP1340 on Monday (01/29/07). They reported that there is good progress being made on the project. There are still some open questions as regards base load, etc. The PMS will complete the review of the project report and send comments back to the PI by 02/16/07. The PMS will also hold a conference call to discuss the open issues in the first week of March '07. The project is expected to be completed by end 2007.

c) Handbook: Timothy Wagner

Tim provided copies of the draft of the revised handbook chapter (Chapter 7 – Combined Heat and Power (CHP) Systems). He acknowledged the efforts of Rich Sweetser and Abdi Zaltash. Tim mentioned that the chapter had significant improvements and a lot of new material was added. In addition, the chapter flows better and has uniformity. It also has recent advances in technology as well as updates and changes in regulations. At a later time, if anyone is interested, Tim would go into the details of the revisions.

Tim summarized the efforts of the handbook as follows:

- In early January – submitted revision to TC for review;
- Mid-January - received feedback from TC; Made revisions as requested;
- Dallas meeting – final review

There was discussion on definition and use of the word "cogeneration" or "CHP" and some other open items. Tim then made the following motions and asked the TC to approve:

- Change title of the chapter to Combined Heat and Power (CHP) Systems
- Define CHP as follows – CHP is the simultaneous production of electrical or mechanical energy (power) and useful thermal energy from a single energy source
- Accept the chapter with the revisions as submitted and agreed to by the subcommittee

Ian Spanswick seconded the motion. It passed unanimously (For: 8; Against: 0, Abstain: 0, Absent: 6).

On behalf of TC 1.10, Jay commended Tim Wagner and the handbook subcommittee for the excellent work on the revision of the handbook chapter.

d) Membership: Jay Jayaraman

The TC 1.10 roster was circulated to all present at the meeting. Currently, we have 14 members, including 2 international members. Jay briefly discussed TC membership and requested all members present to submit any corrections in their information.

The roster for 2007-08 was discussed. Jay's term as TC Chair expires in June 2007. Nevertheless, due to previous officers rolling off and retiring, he has agreed to continue as the Chair for one more year. This will allow for continuity in TC 1.10 and eliminate interim transitions. So for 2007-08, Jay Jayaraman will be Chair, Harold Smith will be Vice Chair and Riyaz Papar will be Secretary.

Based on subsequent information after the meeting, the following members: Riyaz Papar, Ali Jalalzadeh-Azar, Richard Sweetser and Ronald Davis, all complete their appointment term as Voting members on June 30, 2007. They will roll off and remain on the TC 1.10 roster as Corresponding members.

TC 1.10 meeting attendees (Birol Kilkis, Gearoid Foley, Pedro Mago and Hywel Davies) requested that they be added as corresponding members to the TC. Jay will make the additions to the roster. Jay also requested that corresponding members whose emails do not work and who have not corresponded with the TC in the past 3 years be deleted from the roster. Jay will submit the updated roster to Section Head - TAC Section 1 before the deadline.

e) Standards: No report on standards

f) Web Site: Dharam Punwani (absent but submitted report to Jay)

Dharam Punwani was present at the Sub-Committee meetings but couldn't attend the TC meeting. The website is currently up to date and operational. Dharam will update the TC website next month with minutes and program updates.

g) CTIC: John Andrepont (on behalf of Dharam Punwani)

CTIC proposed a seminar for Long Beach, CA and that was reported in the Programs subcommittee report.

A new handbook chapter on Combustion Turbine Inlet Cooling is being developed. The detailed outline of the chapter has been completed and each of the nine sections will be assigned to a subcommittee member by February 2007. A complete draft of the chapter will be due in April 2007. CTIC plans an internal review to be completed two weeks later and a final approval vote at the June (Long Beach, CA) meeting.

CTIC requests scheduling of subcommittee meeting on Monday at 4:15 – 7:00 pm.

8. New Business:

Rich Sweetser brought up a discussion on ASHRAE Standard 40 - *Methods of Testing for Rating Heat Operated Unitary Air-Conditioning and Heat Pump Equipment*. Rich mentioned that gas engine heat pumps are becoming increasingly popular in US and Europe and ASHRAE standard 40 may need to be revisited even though it was reaffirmed in 2006. TC 1.10 should work jointly with TC 8.3.

9. New Registration Policy:

The committee voted unanimously to forward the following communiqué to the Section Head with an urgent request to forward it to the Board of Directors via the proper channels – Time is of essence.

COMMUNIQUE to THE BOARD of DIRECTORS

TC1.10 is very disappointed about the decision of the Board of Directors to remove the free technical registration for the program speakers and chairs. We find that chairing transaction and seminar sessions is very time consuming and challenging. We suggest the policy be modified as follows effective Summer 2007 meeting:

1. Transaction speakers and chairs get free registration for the entire meeting
2. Seminar speakers and chairs and forum moderators get free one-day registration

Background:

Many speakers and chairs and their sponsoring organizations (employers) agree to be involved with the technical programs in order to receive free admission to the conference in exchange for the person's efforts.

We feel the new policy will adversely affect the quality of the technical programs, which will eventually result in a great reduction in the attendance to the conference, thereby reducing the total income to ASHRAE.

Also, TC 1.10 members are extremely concerned about the manner in which this action was implemented. There was no consultation with TC's to help identify potential adverse outcome from such action.

As there was no other business, Jay Jayaraman announced that the next TC meeting would be Tuesday, June 26, 2007 from 3:30 to 5:00 pm in Long Beach, CA and asked for a motion to adjourn. Rich Sweetser made the motion; Ian Spanswick seconded. The motion passed unanimously (For: 8; Against: 0, Abstain: 0, Absent: 6).

Minutes prepared by Riyaz Papar, TC 1.10 Secretary.

Mission of TC 1.10

TC 1.10 is concerned with cogeneration systems, their cycles, and components including heat recovery, energy conversion, and system integration. The systems provide both power (electric

and/or shaft) and thermal energy (heating and/or cooling) and are variously known as cogeneration systems; trigeneration systems; combined heat and power (CHP); combined cooling, heating, and power (CCHP); and integrated energy systems (IES).

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