

**AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING  
ENGINEERS, INC.  
1791 Tullie Circle, N.E./Atlanta, GA 30329  
404-636-8400**

**TC/TG/MTG/TRG MINUTES COVER SHEET**

(Minutes of all Meetings are to be distributed to all persons listed below within 60 days following the meeting.)

TC No. 8.5 DATE 10/17/2013

TC/TG/MTG/TRG TITLE Liquid-to-refrigerant heat exchangers  
DATE OF MEETING 06/24/2013 LOCATION \_\_\_\_\_

MEMBERS PRESENT	YEAR APPTD	MEMBERS ABSENT	YEAR APPTD	EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE
Justin P. Kauffman	2009	Petur Thors	2001	Vikrant Aute
Kaushik Oza	1997	Benjamin E. Dingel	2001	Kishan Padakannaya
Ebrahim S. Al-Hajri	2009	Amir Jokar	2005	Florian Hudelmaier
Omar A. Abdelaziz	2009			William Asher
Satyam Bendapudi	2011			Jason Schlup
Kenneth Schultz	2003			Evraam Gorgy
Sankaranarayanan <del>Padbmanabhan</del>	2011			Satheesh Kulankara
Joseph Huber	1996			Andreas Knoepfler
Stanislav Perencevic	2009			Adnan Ayub
Lorenzo Cremaschi	2009			Ganapathi Reddy
James T. Schaefer Jr	2011			Andrew Sommers
Samual Yana-Motta	2004			Ricardo da Silva
Steven J. Eckels	2003			Jon Hartfield
				Zahid Ayub
				Barbara Minor
				Achim Gotterbarm

**DISTRIBUTION**

*All Members of TC/TG/MTG/TRG plus the following:*

TAC Section Head:	Stephen Duda
TAC Chair:	William McQuade
All Committee Liaisons As Shown On TC/TG/MTG/TRG Rosters:	Donald Brandt, Patrick Marks, David Yashar, Francis Mills, Rick Larson
Manager Of Standards Manager Of Research & Technical Services	Mike Vaughn



**ASHRAE**

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## **ASHRAE TC 8.5 – Heat Transfer Refrigerant Heat Exchangers Winter Meeting, 24 June 2013 (Denver, CO)**

### **Call to Order**

TC Chair Kauffman called the meeting to order and read the TC 8.5 TPS.

### **Confirmation of Quorum**

8 of 13 (incl. non-quorum) voting members were present at quorum call; quorum was established. Two members joined the meeting subsequently.

Members present: J. Kauffman, K. Oza, E. Al-Hajri, O. Abdelaziz, S. Bendapudi, S. Perencevic, L. Cremaschi, J. Schaefer, S. Eckels, S. Yana-Motta

Members absent: A. Jokar, B. Dingel, P. Thors

### **Section Head Comments (S. Duda)**

Duda introduced himself and stated that the Committee was working well and that he had no other prepared remarks. He relayed that he could be reached at [sh8@ashrae.net](mailto:sh8@ashrae.net) for any questions regarding the TAC.

### **Approval of the Minutes from the previous meeting in Dallas, TX**

Minutes were circulated for review. Abdelaziz moved to approve the minutes as amended. Schaefer seconded. Members voted 8 for, none opposed, none abstained (8-0-0). Motion carried.

### **Report from Membership sub-committee (K. Oza)**

There are 13 voting members and 37 corresponding members on the roster, including 3 new members.

Thors to be rolled back as Corresponding Member effective July 1, 2013.

Knoepfler will roll in as voting member on July 1, 2013.

Z. Ayub asked if he was rolling in as a voting member. Kauffman clarified that he was not.

Schultz offered to roll off as Research SC chair. Chair called for volunteers. No volunteers.

### **Report from Handbook Sub-Committee Chair (S. Padmanabhan)**

*Chapters 39 – Condensers* and *Chapter 42 – Liquid Coolers* of the HVAC Systems and Equipment 2016 edition are due for revision. Volunteers were called to help review and revise. Final revisions to be submitted by May 23<sup>rd</sup> 2015 for Chapter 39 and June 27<sup>th</sup>, 2015 for Chapter 42. Bendapudi and A. Ayub volunteered to assess revisions.

### **Report from Standards Sub-Committee Chair (J. Huber)**

Standards SC meetings were held on 6/23 and 6/24. Public review drafts of both, Standard 22:

“*Methods of Testing for Rating Water-Cooled Refrigerant Condensers*”, and Standard 181: “*Methods of Testing for Rating Liquid to Liquid Heat Exchangers*” have been reviewed and voted to submit for public review. Both qualify for fast track, and next steps depend on response to the 45 day review response.

Standard 24 – “*Methods of Testing for Rating Liquid Coolers*” was voted to reaffirm.

**Report from Webmaster (J. Huber)**

Research page has been updated to add papers related to TC8.5 sponsored projects. Chair reminded members to provide content relevant to the TC that they'd like to see on the TC 8.5 website.

**Report from MTG Liaison (J. Kauffman)**

Chair provided contextual comments on the MTG purpose, which is to coordinate activities on topics relating to Lower GWP refrigerants. MTG committee meets at, and in between ASHRAE Meetings and is requesting TC's to proactively propose topics for mini-conferences. Aute confirmed that there was still time to have a mini-conference in Seattle, and relayed that the MTG recommends TC's to proactively propose topics.

Eckels moved for TC8.5 to support a mini-conference in Seattle; Yana-Motta seconded. The motion carried with 7 in favor, none opposed and 1 abstaining.

**Report from Program Sub-Committee (O. Abdelaziz)**

Abdelaziz reported that this TC has not been active in the recent past. Schultz polled the TC on ideas for sessions and relayed the deadlines for Seattle forums & seminars as Aug 12<sup>th</sup>, and for conference abstracts as Sep 23<sup>rd</sup>.

Z. Ayub proposed a seminar/paper session on low-charge heating systems. Schultz and Eckels proposed using the format applied in Dallas, i.e. Research SC meeting with an informal seminar, but Kauffman expressed concern that this may be perceived as inconsistent with the process.

TC brainstormed following ideas for seminars:

- A seminar on standards for condensers covering venting, uncertainty studies, property calculations and non-condensable concentrations.
  - o Schaefer volunteered to propose a topic on venting of condensers.
  - o Hartfield proposed a topic on modern measurement techniques for heat transfer and heat exchanger measurements, and volunteered to submit a program.
- An educational seminar on shell-and-tube and brazed-plate heat exchanger design best practices was proposed. Z. Ayub, A. Ayub and Eckels volunteered to propose topics.

Abdelaziz to come up with a title and pull together for a letter ballot. Chair needs to have the title and paper topics by July 31<sup>st</sup> and ballot approval by Aug 9<sup>th</sup> to make it for the New York meeting.

**Report from Research Sub-Committee (K. Schultz)**

Research sub-committee breakfast notes were reported:

- ASHRAE is looking for nominations for Service to ASHRAE Research Awards. These nominations should come from the TC Chair and submitted by Sep 30<sup>th</sup>.
- There are 58 active projects with \$11M in funding:
  - o 14 are being wrapped-up
  - o 11 new started
  - o 14 released for bid
  - o no projects on hold;
- There continues to be a shortage of RTAR's and Work Statements coming in.
- RAC evaluated 5 RTAR's, conditionally accepted 2, returned 2 and rejected 1.
- The RAC evaluated two Work Statements, conditionally accepted 1 and returned 1;

- 7 TRP's are ready for bid in the Fall
- In the first round of Innovative Research Grant 18 preproposals were reviewed, 5 of which were requested for full proposals; no awards were made. In the second round 18 preproposals were reviewed, 3 of which were requested for full proposals. TAC review is awaited.
- TC's are encouraged to submit more RTAR's and Work Statements.
- Seminar 30 on Research Strategic Plan is on 6/25.
- TC Members are reminded to keep liaisons involved early enough when developing RTAR's. The RTAR form has been updated again as a fillable pdf and is available on the website with an example.
- PES member instructions are being defined and will be available. The PES process needs to remain confidential.

1677 TRP: "*Fouling on enhanced tubes*" – the PES got together by tele-conference and a contractor recommendation was made to the RAC. The RAC did not get to the project at the Spring meeting, and review is expected to be completed by Wednesday 6/26.

"*Behavior of Lower GWP refrigerants in shell-and-tube heat exchangers*" draft RTAR is prepared and proposed for submission by Aug 15<sup>th</sup>.

- Z. Ayub recommended developing the Work Statement in parallel.
- Huber recommended ensuring early alignment with the Research Liaison.
- Eckels suggested starting with the RP 1316 Work Statement.
- Work statement to be made ready by Dec 15<sup>th</sup>.
- Z. Ayub suggested including spray evaporators and volunteered to write up.
- Z. Ayub volunteered to draft a work statement on the plate heat exchangers using lower GWP refrigerants. Bendapudi volunteered to assist.
- Eckles volunteered to prepare a RTAR on condensers using lower GWP refrigerants; Yana-Motta and Kulankara volunteered to assist.

Evaluation of tube cleaning methods in centrifugal chillers as a research topic was raised and Kauffman reported that TC8.2 believed the topic belonged under TC8.5 leadership.

No progress made on the *water-side fouling of coil-tube type condensers* RTAR

Other research topics proposed

- Generalized heat transfer correlations for brazed-plate heat exchangers
- Use of propane in brazed-plate heat exchangers
- Impact of oil in flooded coolers

#### **Chairs comments:**

Kauffman reported following highlights from the Chair's breakfast:

- Nominations are sought for the Service to ASHRAE Research Award;
- Nominations are sought for the Hightower Award;
- ASHRAE is trying to encourage transparency between the main Meetings and local Chapter meetings. TAC has prepared a template to assist the flowdown of information with customizable content specific to the TC's;
- A new MTG committee titled *Cold Climate Design Guide* has been created, and volunteers are sought;
- Members are asked to update the Employment Discipline fields on their online ASHRAE profiles;
- 9 TC's are conducting electronic meetings at Denver as a pilot.

Chair commended Huber for his services as Webmaster.

Chair reminded members to review the ASHRAE Code of Ethics annually. These are attached to the minutes.

The next TC8.5 Meeting will be on January 21<sup>st</sup>, 2014 in New York City.

**New Business**

None

**Adjourn**

Schaefer moved to adjourn. Kauffman seconded. The motion passed by a vote of 10 for, none opposed, none abstained (10-0-0). Meeting adjourned.