

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

TC/TG/TRG MINUTES COVER SHEET

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

TC/TG/TRG No. 8.4

TC/TG/TRG TITLE: Air-to-Refrigerant Heat Transfer Equipment

DATE OF MEETING: January 23, 2008 LOCATION: New York, NY

Members Present	Year APPTD	MEMBERS ABSENT	Year APPTD	EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE
Steve Hancock (Vice Chair)	07	Dan Kramer	04	Omar Abdelaziz
Harry Li	06	Steve Memory (Chair)	CM	Pega Hrnjak
Gordon Struder	05	Jim Parsons	CM	Walter Schwarz
Samuel Yana - Motta (ALI Cordinator)	05	Mahesh Valiya-Naduvath (Chair)	07	Amir Shoostari
Gerald Wyatt	06	David Zietlow (Research)	CM	Mohamed Alshekki
Anthony Jacobi	CM	Man-Hoe Kim (Int'l Mbr)	INTL	Ebrahim AL-Hajri
Ram Narayanamurthy (Handbook)	07	Gary Price (Standards)	CM	Akio Miyara
Yunho Hwang	CM	Edward Vineyard (Program)	05	Kyle Wessells
Mark Johnson (Secretary)	CM	Ming Zhang	CM	Lars Reinholdt
Mustafa Yanik (Membership)	CM	Charles Arnold	CM	
		Young Bae	CM	
		Antonio Baldantoni	CM	
		Andrew Beaver	CM	
		Charles Bemisderfer	CM	
		Ahmed Bensafi	CM	
		Louay Chamra	CM	
		John Chato	CM	
		Mike Connaghan	CM	
		Katherine Flamm	CM	
		Bill Fox	CM	
		Kwok Fung	CM	
		Dominique Hantz	CM	
		Mark Hoehne	CM	
		Dave Honeycutt	CM	
		Shaobo Jia	CM	
		Stan Kistler	CM	
		Paul Krause	CM	
		Satheesh Kulankara	CM	
		Pedro Mago	CM	
		Alfi Malek	CM	
		Christoph Meurer	CM	
		Mike Ohadi	CM	
		Nicole Okamoto	CM	
		Keith Rice	CM	
		Ray Rite (Webmaster)	CM	
		William Stewart	CM	
		Liangyou Tang	CM	
		Yong Xin Tao	CM	
		William Tinsley	CM	
		Robert Utter	CM	
		Michael Wilson	CM	
		Lizheng Zhang	CM	
		Michel LeCompte	CM	
		Jose Perez-Galindo (International Mbr)	INTL	

DISTRIBUTION
ALL MEMBERS OF TC/TG/TRG

TAC Chairman: _____ Patricia Thomas Graef
TAC Section Head: _____ Vinod Gupta
Professional Development: _____ Gordon Holness

LIAISONS:

RAC Research: _____ Ron Bailey
Program: _____ Lynn Werman
Standards: _____ Stephen Skalko
Handbook: _____ William Walter
Special Pubs: _____ Harvey Sachs
Chapter Technology Transfer: _____ Michael Middleton
STANDARDS STAFF LIAISON: _____ Claire Ramspeck
TECH SERVICES/RESEARCH STAFF LIAISON: _____ Mike Vaughn

DRAFT MINUTES
ASHRAE TECHNICAL COMMITTEE 8.4
AIR-TO-REFRIGERANT HEAT TRANSFER EQUIPMENT
NEW YORK CITY, NEW YORK
TUESDAY, JANUARY 23, 2008

I CALL TO ORDER

The Vice Chair, Steve Hancock in place of Mahesh Valiya-Naduvath, called the meeting to order at 3:34 p.m.

II Roster review:

Mustafa identified three voting members will be rolling off at the Utah meetings, Steve Memory, Steve Hancock and Dan Kramer. Discussions of eliminating past members who are no long participating in TC 8.4 was discussed. A short list of candidates to be contacted to see if they still wish to be corresponding members was created.

Steve and Mustafa identified 6 out of 11 voting members for quorum.

III Self introductions :

Everyone present introduced themselves, and signed a roster sheet.

IV Handbook update (from liaison)

Handbook: Handbook Liaison Bill Walters stopped in and is looking for overdue handbook chapters. Ram not present for comment on our handbook present. Later Ram arrived and mentioned that the chapters had all been updated and sent in.

Note: There is a new handbook section on the ASHRAE website, which allows members to review and comment on handbooks.

V LIAISON REPORTS FROM OTHER COMMITTEES

No reports.

VI MINUTES OF PREVIOUS MEETING

Minutes of the TC 8.4 meeting in Long Beach were unanimously (6-0) approved.

VII Chairman's notes on TC chair meeting :

- No real update. Steve was unable to attend the TC chair meeting due to the late notice from Mahesh.

VIII SUBCOMMITTEE REPORTS

PROGRAM SUBCOMMITTEE – ED VINEYARD

- No report, Ed not present. Seminar 28 was sponsored by TC8.4. Eckard and Tony did a very nice job. Unfortunately, Manho Kim did not present as planned.

Research Subcommittee – Steve Hancock for David Zeitlow (Notes from Steve)

1. Announcements

- a. ASHRAE's research budget is about \$2.4 million of which about \$500,000 is available for new projects.
- b. ASHRAE currently has 71 active projects and 20 new work statements submitted
- c. The Research Manual will be posted on the ASHRAE website by 1/31/08.
- d. The research page on the ASHRAE website is:
<http://www.ashrae.org/technology/page/39>. Here you can find the research manual as well as instructions for writing an RTAR.
- e. Work Statement authors can now bid on the research they author. Conflicts of interest are avoided by requiring at least 3 bidders and including 2 members of RAC on the PES.
- f. A new ASHRAE strategic plan is in work. Emphasis will likely be on sustainability.
- g. US Green Building Council (USGBC), California Energy Commission (CEC), and ARTI co-fund a lot of ASHRAE research so are well worth investigating for co-funding. If they co-fund, they will have representatives on the PES and PMS.
- h. Our Research Liaison is Ron Bailey. He can be of great assistance in facilitating preparation of RTAR's and work statements.
- i. Due dates for RTAR's and Work Statements are 3/3/08, 5/15/08, 8/15/08, and 10/15/08

2. IEA HPP Annex 33 Update

Clark Bullard gave an update on the above committee. A website with information on their activities is: <http://www.compactheatpumps.org/>. They expect to finish their work and issue a final report in fall of 2009.

3. Active Projects: None

4. Work Statements: None

5. RTARs

- a. Submitted:
 - i. Influence of Oil Circulation Ratio on the Heat Exchanger Performance: Hwang. This RTAR was returned to the author with comments.
 - ii. A Heat Transfer and Friction Factor Correlation for Low Air-side Reynolds Number Applications of Compact Heat Exchangers: Johnson. This RTAR has been accepted and will proceed to a work statement. Mark Johnson will author the work statement. We received special recognition from RAC for the high quality of this RTAR.
 - iii. Characterize the Geometric Parameters, Fin Surface Treatment and Humidity Ratio on Condensate Retention and Water Carry-over in Refrigerant to Air Cooling Coils: Heidenreich. No report.
- b. In Work:
 - i. Development of a Test Standard for Fouling of Outdoor Stationary Refrigerant to Air Heat Exchangers: Johnson and Hancock
 - ii. Design of Super Compact Heat Exchangers Optimized Using Biological Principles: Shaobo Jia
 - iii. Modeling of Tube-to-Tube Conduction Effects in Finned Tube Heat Exchangers: Omar Abdul-Aziz

6. Existing Ideas awaiting authors (in order of priority: first to last)

- a. Design of cooling coils for sensible-only applications. (Data centers, etc.)

- b. Comparison of plain and internally enhanced large diameter (q'') tubes for evaporation of overfed ammonia (Price, Struder)
 - c. Effects of Geometry and Conditions on Velocity Profiles at Heat Exchanger Inlet
 - d. Pulsating Condenser Flow for Enhanced Refrigerant-Side Heat Transfer (Narayanamurthy)
- 7. Action Items:**
- a. Hwang: Update oil circulation RTAR
 - b. Johnson: Draft low Re work statement, co-draft fouling RTAR
 - c. Heidenreich: Update water carryover RTAR
 - d. Hancock: Co-draft fouling RTAR
 - e. Jia: Draft biological principles RTAR
 - f. Abdul-Aziz: Draft tube-tube conduction RTAR

STANDARDS SUBCOMMITTEE – GORDON STRUDER, FOR GARY PRICE

Standard 25 update - Gordon Struder discussed: Mark Weber, Assistance Standards – American, stated that a form needs to be sent to ASHRAE to officially form a Standards committee for Standard 25. Steve Hancock will make sure that the proper forms are submitted. AHRI (formerly ARI) currently has a committee in place to come up with their own standard due to lack of revision from ASHRAE. AHRI is submitting its proposal to its governing board to get this standard approved. If the AHRI standard is accepted in February, it may be used as a starting point for the Standard 25 subcommittee. Failure of action from ASHRAE (i.e. TC 8.4) will result in the deletion of that standard. Sameul Yana-Motta and Mark Johnson agreed to be members of the Standard 25 subcommittee, if no other volunteers from outside TC8.4 step forward.

Standard 33 update - Ram Narayanamurthy: Ram requested members for standard 33 (standard for rating for coils). Steve Hancock signed up, but at least one more member is still needed. Mark Johnson's availability depends on what happens with Standard 25.

HANDBOOK SUBCOMMITTEE – RAM NARAYANAMURTHY

Ram incorporated comments received from TC8.4 members to the HVAC Systems and Equipment chapters 23, 25, and 33 (air heating coils, condensers, and cooling and dehumidification coils). The ASHRAE handbook committee currently has the updated chapters, and they are reviewing these chapters. Final drafts due at the end of January, so the last draft sent in will be the final draft.

MEMBERSHIP SUBCOMMITTEE – MUSTAFA

Roster changes:

Mahesh Valiya-Naduvath went through updated roster. Three members Steve Memory, Manhoe Kim, and Dan Krammer, are rolling off. Seven more corresponding members are rolling on; bring our total membership up to 69 members (11 Voting members 2 international members (counted as voting members) and 58 corresponding members).

WEB PAGE – STEVE FOR RAY RITE

Overall Ray is keeping the TC8.4 website up to date.

IX OLD BUSINESS

There was none.

X NEW BUSINESS

Discussion of whether air to air heat exchanger falls under the scope. If it does Ram has some potential ideas for seminars in Chicago. Omar Abdelaziz from CEEE may be able to provide a 2-D fin conduction seminar for Chicago. Another idea for a seminar may be evolutionary programming for design of new heat exchangers using biological principles.

NOTE: Be sure to inform members to go to the website to update their bios at the Utah meetings.

XI ADJOURNMENT

A motion to adjourn was made, seconded and approved unanimously (6-0). The meeting ended at approximately 4:49PM.

Respectfully Submitted by: Mark Johnson

With thanks to Steve Hancock and Mustafa Yanik for their help