

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: July 1, 2014 LOCATION: Seattle, WA

No.	First Name	Last Name	Affiliation	VM	CM	YEA Member	Guest	Email
1	LORENZO	CREMASCHI	ok-state	✓	-	-	-	cremasc@okstate.edu
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DISTRIBUTION
ALL MEMBERS OF TC/TG/TRG

TAC Chairman: _____ Bryan Becker
 TAC Section Head: _____ Steve Duda
 Professional Development: _____ Gordon Holness

LIAISONS:

RAC Research: _____ David Yashar
 Program: _____ Lynn Werman
 Standards: _____ Rick Larson
 Handbook: _____ Russ Lendeman
 Special Pubs: _____ Julia Keen
 Chapter Technology Transfer: _____ Nathan Hart
 STANDARDS STAFF LIAISON: _____ Claire Ramspeck
 TECH SERVICES/RESEARCH STAFF LIAISON: _____ Mike Vaughn

MINUTES
 ASHRAE TECHNICAL COMMITTEE 8.4
 AIR-TO-REFRIGERANT HEAT TRANSFER EQUIPMENT
 SEATTLE, WA
 TUESDAY, JULY 1, 2014

I CALL TO ORDER

Lorenzo Cremaschi, the Chair of TC 8.4, called the meeting to order at 3:35 p.m. The title, purpose and scope of the TC were read.

II SELF INTRODUCTIONS AND ATTENDENCE:

Everyone present introduced themselves, and signed a roster sheet. Lorenzo Cremaschi identified 6 out of 10 voting members (Lorenzo Cremaschi, Jun Wang, Stanislav Perencevic, Omar Abdelaziz, Vikrant Aute, and Yi Qu), which confirmed the quorum. There were also 18 corresponding members and 9 guests in attendance. There were 7 members and guests who were also YEA members. Shenghan Jin, the secretary of TC 8.4, kept record of the meeting.

II ROSTER CHANGE

Mark Johnson, Kelvin Dunshee, Omar Abdelaziz, Stanislav Perencevis and Ebrahim S Al-Hajri (5 in total) will be rolling off the voting membership. Chad Bowers, Liping Liu, Bill Fox and Man-hoe Kim (4 in total) will be rolling on as voting members. In total there will be 7 voting member and 2 non-quorum member. This will be in effect after July 1st, 2014. Voting member can vote through E-meeting.

III NOTE FROM SECTION HEAD:

The Section Head noticed that some voting members had been constantly absent and may have caused some difficulty for the TC meeting to be in order. Replacement of the roster was suggested.

The Section Head also made a few announcements from the board:

- It was requested for every member to follow the ASHRAE ethics code and pay attention to any conflicts of interest.
- Each year there will be awards for the most outstanding TC within each section. The 2014 New York meeting and 2014 Seattle meeting will count as the first year.
- Active TC should check their bios on ASHRAE website and make sure they are up to date.

The Section Head asked for further questions and offered any assistance if needed.

IV REPORT FROM PROGRAM LIAISON

None at this time

V MINUTES OF PREVIOUS MEETING

Meeting minutes from the TC 8.4 meeting in New York were voted. For approval. Vikrant Aute took motion, Yi Qu seconded. 5 voted in favor, 1 abstained (5-0-1). The meeting minutes was approved by the voting members.

VII Chairman's notes on TC chair meeting:

Lorenzo read the minutes from the TC chair handout distributed during the breakfast chair meeting. The relevant minutes are attached below

1. 14-15 Rosters Access & Distribution

Remember, the current 2013-2014 roster for your TC, TG or MTG is in effect until after the June meeting this year – through Wednesday, July 2nd.

By now, each TC, TG and MTG chair should have received a PDF & MS-Excel file of their new 2014-2015 roster from their Section Head for distribution to the committee. In addition, each member can view all of the rosters of their committees on the ASHRAE Website. Go to www.ashrae.org <<http://www.ashrae.org>>, click on the "Membership & Conferences" tab in the header, click on "My Membership" text in the left sidebar, and log in (if you have not logged in lately, you might need to set up a new username and password). Click on the "Update Your Bio / View or Edit Your Profile" link. Now, you should see your current "bio info". Click on "Committees" on the left sidebar; all of the committees you are a member of will appear. Click on the "blue" roster text at the left hand side of a committee to reveal the roster with linked contact information. Make sure everyone on your committee also knows how to access the roster.

The Provisional Corresponding Member position is a relatively new position on TC/TG/TRG rosters. This position allows potential new members to be added by staff to the committee roster any time a request for membership is made by an individual. The position has a 2-year term on the committee. Staff will notify the chair and reissue a new roster to the committee chair any time a provisional member is added. The TC/TG/TRG chair has the option each year during the regular roster update process to convert provisional CMs that have been active participants on the committee the past year into regular CMs or voting members or drop them. If no action is taken, they will time expire from the roster and be removed by staff.

2. Outstanding TC Award – NEW!

TAC has developed a new award call the Outstanding Technical Committee Award. The purpose of the award is to recognize, annually, a single Technical Committee within each TAC Section that has the highest measured performance based on a set of weighted criteria as compared to other TCs within that same Section. The goal of this award is to reward TCs for the behaviors and activities that further the goals of TAC and exhibit excellence in the operation of a technical committee. The criterion used is a point system with values assigned to various metrics and activities, which are collected through an updated TC activity form. The award will serve to heighten TC Chair and committee member awareness of what activities are valued to encourage improved performance, and foster friendly competition between TCs within a Section.

3. TC/TG/TRG Chair's Training Workshop Reminder

Sunday June 29, 9:45-10:45a in Room #608 (6th floor) in the Washington State Convention Center. This session will be a repeat of the same content that was presented on 6/20 via a webinar for individuals that could not make that webinar. As with the Breakfast meeting, both the Chair and

Vice-Chair are expected to attend if they did not attend the webinar; attendance will be tracked so that we can assess who has been trained. Bring questions - if you need an answer, it's quite likely others also need the same answer. We are also interested in hearing your feedback if you attended the webinar. The main focus of this particular workshop will be the voting process and how to use the new activity form.

4. **Useful TC/TG/TRG/MTG Chair Information and forms on ASHRAE website**

Information for TC/TG/TRG and MTG chairs can be found on the Technical Committee page of the ASHRAE website at the following link: <http://www.ashrae.org/tcs>

The TC/TG/TRG Manual of Procedures (MOP) has been revised to include a new committee type, Multidisciplinary Task Groups (MTGs). MTGs are different from TCs, TGs, and TRGs. The objective of the MTG is to first try to better coordinate and focus the activities of the affiliated TC and non-TC groups (EHC, REF, SSPCs, outside groups, etc.) that make-up the MTG on the task for which the MTG was created without duplicating the functions of a TC or TG so that the task can be completed as efficiently as possible. In special cases, MTGs may also be authorized by TAC to assume some TC/TG functions, such as research, if it is deemed necessary to better complete their task assignment.

Since the need, purpose, and progress of each MTG is reassessed and reaffirmed by TAC each year, there are no term limits for the MTG Chair, Vice Chair, Members and Alternates.

5. **2014-2015 Hightower Award Nomination Process and Deadline**

Nominations for the 2014-2015 George B. Hightower Technical Achievement Award are due to you Section Head by **September 1, 2014**. The award recognizes outstanding technical leadership and contributions on a TC/TG/TRG during the past four years, excluding research and standards activities. Please go to the Technical Committee page of the ASHRAE website at the following link under the "Procedures and Forms..." heading: <http://www.ashrae.org/tcs>

2014-2015 Service to ASHRAE Research Award Nomination Process and Deadline

Nominations for the 2014-2015 Service to ASHRAE Research Award for TC volunteer efforts in research are due to RAC research liaison by **September 30, 2014**. Please go to the Research page of the ASHRAE website at the following link under the "Research Grants and Awards" heading: <http://www.ashrae.org/research>

6. **New MTGs that have been formed**

TAC approved the formation of the following new Multidisciplinary Task Group (MTG):

MTG.BD, Building Dampness

Scope: MTG.BD will develop a definition of a damp building and an assessment protocol to assess building dampness in accordance with Recommendation #3 of the ASHRAE Board of Directors' 2013 position document titled *Limiting Indoor Mold and Dampness in Buildings*. The group will also propose research to test the practicality, utility and cost-effectiveness of the protocol, and oversee that research if such is approved. The MTG will publish the protocol in ASHRAE transactions for use as appropriate by the building professions, the public health community and by the public at large.

The chair and vice chair of the MTG is Lew Harriman and Brad Stanley, respectively.

For more information on this MTG and the six other MTGs, please go to the MTG section on the following web page: <http://www.ashrae.org/tcs>

If your TC would like to have a voting representative on a particular MTG, please contact the ASHRAE Manager of Research and Technical Services, Mike Vaughn, at MORTS@ashrae.net.

7. **Employment Discipline added to ASHRAE BIO Online Input Form**

A new input field titled Employment Discipline has been added to the ASHRAE online member (BIO) graphical input form and TAC would like ALL TC members to self-declare their employment discipline prior to the start of the new Society year on July 1, 2014 by going to the Members Only section (<https://eweb.ashrae.org/eweb/DynamicPage.aspx?Site=ASHRAE&WebKey=8396a37a-9fc2-4f50-9332-5eebebe73494>) and enter their employment discipline information. The link should take you directly to the screen, which is located under demographics.

You will need your login and password to enter. Employment Discipline is located in the third section.

Employment Discipline	
category:	Government and Organizations ▼
discipline:	Not-for-Profit Organization (USGBC, Habitat, etc.) ▼

Once you have made the necessary updates, save the changes and logout.

Employment Disciplines:

Academic

- Academic - Professor/Staff
- Academic – Student

Government and Organizations

- Government - Federal (e.g., DOE, EPA, USDA)
- Government - National Lab (e.g., ORNL, NIST)
- Government - Local (e.g., city or state governments)
- Not-for-Profit Organization (USGBC, Habitat for Humanity, etc.)
- Trade Association (ACCA, SMACNA, etc.)

Building Industry

- Architect
- Building Owner / Management Firm
- Consultant
- Contractor
- Designer
- Facilities Manager/Operator

Manufacturing Industry

- Manufacturer
- Manufacturer
- Manufacturer – Sales
- Manufacturer’s Representative

Other

- Model Code Organization
- Retired
- Utility
- Other

Thus far, approximately 28% of TC Members have declared their discipline.

8. E&P Beta Test #6 TC meetings being Held in Seattle

The 6th beta test of Electronic and Present (E&P) meetings, which allows some TC members to participate in the TC meeting from a remote location electronically, will occur in Seattle and the following nine TCs have agreed to participate in this test: TC 1.5, TC 2.2, TC 7.9, TC 4.2 (RP-1561 PMS), TC 8.4, TC 8.8, TC 9.2, TC 9.3 (RP-1603 PMS), and TC 9.9.

The chairs of those TCs participating should provide to their Section Head feedback on their E&P meeting experience before TAC meets on Wednesday morning, 7/2.

9. TC Volunteers Sought to Support Content Development and Quality Control for Society Technical Program at Society Meetings

Provide to your Section Head after each Society meeting a list of qualified volunteers from your TC that are potential Technical Session chairs and reviewers of session papers that are related to TC's scope for use by the Conferences & Expositions Committee (CEC) in developing technical content for future technical programs.

TC Program Subcommittee Chair Training in Seattle

Please notify your program subcommittee chair that CEC will be offering training to them as follows in Seattle: Tuesday, 6/29, 11:15 a.m. – Noon, Room 614, (Sixth Floor) Washington State Convention Center.

10. CEC Seeks Program Track Ideas for the Orlando 2016 meeting and Beyond

The Conferences and Expositions Committee (CEC) oversees ASHRAE's annual and winter conferences and other specialty conferences and expositions globally. The CEC continually works to improve the conference experience for all attendees. To help keep a "pulse" on the technical issues facing professionals in the HVAC&R marketplace, the CEC seeks ideas for tracks for the Orlando 2016 meeting next year and annual and winter conferences beyond as well as topics for specialty conferences from TC members.

Please submit your suggestions to ASHRAE Staff member Tony Giometti (Giometti@ashrae.org)

11. Report on TC/TG/TRG websites in Section (SHs need to report to TCs which sites are not up to date.)

Is your committee website up to date? If not, please ask your webmaster to at least post the latest minutes and the Seattle meeting times and agenda. If your website has been neglected, add an action item for this meeting to appoint a responsible member of the TC/TG/TRG who will bring it back to life. This form of communication is critical to the efficient operation of your committee, and for attracting new members.

TAC and the Electronic Communications Committee (ECC) recently posted a webinar recording on how to set-up and maintain a basic TC website using the ASHRAE server and TC website template at the following link: <http://media.ashrae.biz/webinar/TrainingWebinar.avi>

12. Special effort to welcome new members, and visitors (potential members), particularly international members, to TC meetings

Potential new members for your committee have been encouraged to drop-by your meeting in Seattle. As a result, please make a special effort to recognize and warmly welcome all visitors to your meeting – A TC can never have too many willing and able volunteers.

13. Thank You Letters to Employers

ASHRAE President – William Bahnfleth – has offered to send letters to the employers of TC volunteers this year thanking them for supporting their employee's service on an ASHRAE TC

during Society year 2013-2014. If requested by the volunteer, the letter will be sent to his/her employer by the end of July or early August and the volunteer will receive a copy.

Please let your committee members know that they will be receiving an email about employer thank you letters in early July with details on how to request a thank you letter.

14. Option for TC Subcommittee Meetings via Conference Calls and Web Meetings

More and more TCs are taking advantage of a new Society service that allows TCs to hold subcommittee meetings by phone and/or web. Many TCs are finding this to be a more efficient way for them to conduct subcommittee business and it also allows TC members that can't travel to meetings on a regular basis a way to still contribute to the TC. Such a change can also eliminate potential conflicts with the TC's program sessions at Society meetings. Please pass your conference call/web meeting/webinar requests on to the Manager of Research and Technical Services, Mike Vaughn, at mvaughn@ashrae.org or MORTS@ashrae.net

15. Upcoming Program Dates & Atlanta Program Tracks

Chicago Meeting - January 24 - 28, 2015

- Chicago Seminar and Forum Session Proposals are due August 11, 2014
- Revised conference papers / Final Technical Papers due August 18, 2014
- Conf. and Tech. Paper Final Accept/Reject Notifications sent August 25, 2014
- Seminar, Forum, Workshop Accept/Reject Notifications sent September 8, 2014
- All presentation files (PPT) due online – January 2, 2015
- Conference Website: <http://www.ashrae.org/chicago/>

Seminar and Forum proposals for Chicago are due by Monday, August 11, 2014. Please visit the following site to submit your proposal:

<http://ashraem.confex.com/ashraem/w15/cfp.cgi>

Atlanta Meeting - June 27 – July 1, 2015

- Conference Paper Abstracts Due are due September 22, 2014
- Technical Papers initial drafts due September 22, 2014
- Conference Paper Abstract Accept/Reject Notifications sent October 6, 2014
- Website Opens for Seminar, Forum and Workshop Proposals on January 5, 2015
- Final Conference Papers Submitted for Review due January 5, 2015
- Conference Website: <http://www.ashrae.org/atlanta/>

Program Focus at Atlanta Annual Conference

- Track 1: HVAC&R Systems and Equipment
This track solicits papers and presentations on all aspects of HVAC&R Systems and Equipment. Efficiency is always important, so information on new and improved equipment and systems offering improved efficiency is particularly welcome.
- Track 2: HVAC&R Fundamentals and Applications
Fundamental information and applications of fundamentals related to all aspects of HVAC&R are welcome. This can range from fundamental psychrometrics to combustion, system and envelope fundamentals and beyond.
- Track 3: Research Summit

This track will continue the highly successful Research Summit tracks pioneered at Denver and Seattle. Research results related to any aspect of heating, cooling and other energy uses in buildings are solicited.

- Track 4: Refrigeration
Refrigeration is a critical element of modern life, from preserving our food to maintaining comfort. The ozone depleting potential of the older refrigerants has led to adoption of non-ozone depleting refrigerants, with the focus now shifting to refrigerants with low global warming potential. These factors when combined with multiple drivers toward energy efficiency may lead to a diverse set of different refrigerants and processes for different cooling applications. This track will have presentations and papers from all areas of refrigeration and will particularly explore related technologies that will reduce the use of traditional refrigerants including evaporative cooling and desiccants.
- Track 5: Building Operation, Maintenance and Optimization/Commissioning
Operation and maintenance have always accounted for a major portion of building expenses and a much smaller level of engineering effort aimed at controlling these expenses. Over the last one to two decades, there has been an increasing realization that real engineering applied to operation, maintenance and operational optimization or “commissioning” can bring increased comfort and offers huge financial returns. This track solicits papers and presentations related to any and all aspects of this topic.
- Track 6: Indoor Air Quality
Indoor air quality has become a vital consideration during all phases of a building’s life. It is closely linked to comfort and to occupant satisfaction, productivity and health. This track seeks presentations and papers that explore these links, particularly in ways that make the case for high levels of indoor air quality compelling to building owners.
- Track 7: Modeling throughout the Building Life Cycle
Modeling was originally concerned primarily with building and system design specifications. The demands of energy efficient operation brought about the need for modeling of part-load operation for a variety of off-design conditions. The explosion of computational capacity and data collection capability is rapidly expanding the scope, complexity and practical applications of modeling both during design, but even more so for fault detection, diagnostics and operational optimization. Thirty years ago, people were dreaming of doing some of the things that Building Information Modeling is now bringing to reality. Presentations and papers are solicited related to all aspects of building modeling, with a particular interest in successful applications that have extended modeling into operational phases of the building life cycle.
- Track 8: High Performance Buildings
This track seeks papers and presentations on the design and measured performance of high performance commercial and industrial buildings in North America and around the world. There are numerous examples of buildings designed for high performance that have fallen considerably short of the design intent and papers that identify reasons for these shortfalls are of particular interest.
- Track 9: Moving Advanced Energy Design Guidance to the Mainstream
This track focuses on the Advanced Energy Design Guides, with a circulation of over 500,000, and other like methods for reaching a broad audience with advanced energy efficiency. The target is a 50% reduction in energy. Papers and sessions focus on methods for using the guides including actual building case studies, educational curriculum, and other

documented uses to move the market towards energy efficiency. Also, papers and sessions focus on the methods to create the guidance.

For more information, go to: www.ashrae.org/atlanta

16. Retiring TC/TG/TRG Chair Certificates

TC chairs that are completing their terms as chair at this Society meeting will be presented with a certificate of appreciation. Please coordinate with your Section Head as to when and where at the meeting you would like to be presented with the certificate (Section meeting or TC meeting).

17. Request for each technical committee to briefly review ASHRAE Code of Ethics at start of TC meeting

See the following link for the latest version of the ASHRAE Code of Ethics:

<https://www.ashrae.org/about-ashrae/ashrae-code-of-ethics> A hardcopy of the ethics is also attached to this document.

18. New TAC Presentation template for TC members to use with local Chapter

The new presentation template allows TC members, without a lot of effort, to give a presentation to their local chapter on TAC and the TCs in general and to also customize a few slides with information specific to their own TC or TCs. The template is posted now on the Technical Committee page of the ASHRAE website for download.

19. TC Involvement in ASHRAE Standard and Guideline Development Process is Encouraged

Standards Committee would like to encourage involvement by the TCs in the development of ASHRAE standards and guidelines. There are many ways that members can get involved in the standards process. This includes becoming members of the project committees, reviewing documents when they have been issued for public review, attending project committee meetings as interested parties, signing up for the Standards Action listserv or requesting the appointment of a TC liaison to the project committee. Standards Committee highly recommends that at least one member of each TC sign up to follow the Standards Action listserv to monitor progress of standards and guidelines of interest to the TCs. To sign up for the Standards Action listserv please go to <https://www.ashrae.org/resources--publications/free-resources/listserves>. For additional information on interactions between TCs and PCs please see the training presentation posted here: <https://www.ashrae.org/standards-research--technology/technical-committees>.

20. New TC Activity Form

TAC has developed a new TC activity form that they would like all TCs to use at this meeting to report to their section head. Section heads will provide electronic copies of the activity form to all TC chairs in section.

21. TC Master Calendar – Now Available through Google

The Technical Committee Master Calendar is now available through Google. In order to access this calendar you need to have a Google account.

Once you log into your Google account, follow the instructions below:

To add a friend's calendar, just follow these steps:

1. At the bottom of the calendar list on the left, click Add and select Add a friend's calendar.
2. Enter the appropriate email address (techservices1791@gmail.com) in the field provided, then click Add.

This calendar is public and will appear under 'Other Calendars' in the left column.

To set up Google Calendar Sync to your Outlook:

1. Make sure you're using a supported operating system and Outlook version.
2. Download Google Calendar Sync (version 0.9.3.6) at http://dl.google.com/googlecalendarsync/GoogleCalendarSync_Installer.exe
3. Once a dialog box appears, click Save File. The downloaded file should open automatically. If it doesn't, manually open it from your browser's download window.
4. Click OK to confirm that you're aware this is an executable file.
5. Read through the Google Calendar Sync Terms of Service, and click I Agree.
6. Follow through the Installation Options and click Install to finish the set-up process.

Once Google Calendar Sync is installed on your computer, the Google Calendar Sync Settings window will appear:

In the Settings window, enter your email address and password and select the Sync Option you prefer. Read about each Sync Option.

You'll also be able to set the time interval for syncing to occur. Please keep in mind that 10 minutes is the minimum time interval allowed.

After the initial set-up, you can access the Google Calendar Sync Settings window again by double-clicking the calendar icon in your Windows System Tray.

22. Upcoming Workshops and Conferences:

2014

- **13th International Conference on Indoor Air Quality and Climate (Indoor Air 2014)** – July 7 -12, 2014 – Hong Kong, China. Contact: <http://www.indoorair2014.org/>
- **Purdue University International Compressor Engineering, Refrigeration and Air Conditioning, and High Performance Buildings Conference** - Jul 14 - Jul 17, 2014 - Herrick Labs Purdue University West Lafayette, IN, USA, Contact: <https://engineering.purdue.edu/Herrick/Events/2014Conf>
- **CATAAR 2014** - September 10-12, 2014 – Centro Miguelete, Buenos Aires, ARGENTINA. Contact: <http://www.aafrio.org.ar/>
- **2014 ASHRAE/IBPSA-USA Building Simulation Conference** – September 10-12, 2014 – Atlanta, GA USA. Contact: www.ashrae.org/Simulation2014.
- **ICEBO 2014 (Int'l Conference for Enhanced Building Operations)** - September 14 – 17, 2014 - Tsinghua University; Beijing, CHINA. Contact: <http://icebo.tamu.edu/home>
- **AHR Expo-Mexico 2014** - September 23 – 25, 2014 - Mexico City, Mexico. Contact: <http://www.ahrexpomexico.com/eng/>
- **International Conference on Efficient Building Design: Materials and HVAC Equipment Technologies** — October 02 - 03, 2014 | Beirut, Lebanon. Contact: <https://www.ashrae.org/Beirut2014>
- **ROOMVENT 2014** - October 19 - Oct 22 , 2014 - São Paulo, Brazil — Contact: <http://www.roomvent2014.com.br/>

2015

- **Advanced HVAC and Natural Gas Technologies** - May 6 – 8, 2015 - Radisson Blu Hotel, Riga, LATVIA – Contact: <http://www.rtu.lv/en/>
- **2015 HVACR & Mechanical Conference for Education Professionals** - May 6 – 8, 2015 - Baltimore, Maryland – Contact: <http://www.instructorworkshop.org/default.aspx>

- **ICR2015 (24th IIR International Congress of Refrigeration)** - August 16 – 22, 2015 - Yokohama, JAPAN – Contact: <http://www.icr2015.org/index.html>
- **Cold Climate 2015** - October 20 – 23, 2015 - Dalian, CHINA – Contact: <http://www.coldclimate2015.org/>
- **11th International Conference on Industrial Ventilation** - October 26 – 28, 2015 - Shanghai, CHINA – Contact: <http://www.ventilation2015.org/>

2016

- **CLIMA 2016** - May 22 – 25, 2016 - Aalborg, DENMARK – Contact: <http://www.clima2016.org/welcome.aspx>

23. TAC Requests your feedback on new roster procedures

If you have any feedback on the new roster update procedures, please pass them on to your Section Head.

24. Survey your TC to develop a list of “how to” training modules which are needed.

TAC is developing short recorded training webinars for posting in the ASHRAE website .

25. TCs need to submit requests for E&P virtual meetings well in advance of Society meetings to assure best chance for participation.

Submit your E&P meeting request to Mike Vaughn (MORTS@ashrae.net)

26. Ask TCs to List Handbook chapters that TC has responsibility for and any specific issues or problems they have in making updates

27. REMIND: TC’s to participate and post on ASHRAExchange.org

28. REMIND: Program Subcommittee chairs to attend training (7/1, 11:15a-12:00p, Room 614 (6, WSCC)

29. REMIND: Research Subcommittee chairs to attend breakfast (6/30, 6:30a-8:30a, Grand Ballroom C (2, Sheraton)

30. REMINDER: Draft TC agendas are to be sent at least 30 days prior to a meeting. Draft TC minutes are to be posted no later than 60 days after meeting.

ASHRAE Code Of Ethics

(Approved by ASHRAE Board of Directors January 30, 2013)

1.140.001.1 As members of ASHRAE or participants in ASHRAE committees, we pledge to act with honesty, fairness, courtesy, competence, integrity and respect for others in our conduct.

A. Efforts of the Society, its members, and its bodies shall be directed at all times to enhancing the public health, safety and welfare.

B. Members and organized bodies of the Society shall be good stewards of the world’s resources including energy, natural, human and financial resources.

C. Our products and services shall be offered only in areas where our competence and expertise can satisfy the public need.

D. We shall act with care and competence in all activities, using and developing up-to-date knowledge and skills.

E. We shall avoid real or perceived conflicts of interest whenever possible, and disclose them to affected parties when they do exist.

F. The confidentiality of business affairs, proprietary information, intellectual property, procedures, and restricted Society discussions and materials shall be respected.

G. Each member is expected and encouraged to be committed to the code of ethics of his or her own professional or trade association in their nation and area of work.

H. Activities crossing national and cultural boundaries shall respect the ethical codes of the seat of the principal activity.

- **REMARKS FROM SOCIETY LIAISONS TO TC/TG/TRG CHAIRS**
RESEARCH LIAISON REPORT

None at this time

- **LIAISON REPORTS FROM OTHER COMMITTEES**

None at this time.

- **SUBCOMMITTEE REPORTS**

- **PROGRAM SUBCOMMITTEE– ED VINEYARD**

- **General Comments and upcoming conferences:**

- For Chicago meeting (next meeting), it is proposed to have a seminar titled “ASHRAE Research in Air-to-Refrigerant Heat Exchangers”. Lorenzo and Charlie Lin will be able to present. Sankar Padhmanabhan volunteered to be the chair for the seminar.
- A conference paper session is also proposed for Chicago meeting. Ed Vineyard will be the chair for the session. Vikrant Aute intends to submit 2 papers. The deadline for submission is July 7th, 2014.
- There will be a conference paper session for Atlanta meeting. The deadline for abstract is Sep 22nd, 2014, and deadline for full text paper is Jan 5th, 2015. There will be 3 papers in conference session. Yang Zou, Lorenzo Cremaschi, Omar Abdelaziz intend to submit paper.

Omar Abdelaziz took the motion to vote for approval, Vikrant Aute seconded; all voting members voted in favor (6-0-0).

- **RESEARCH SUBCOMMITTEE – CHAD BOWERS**

- **Update from research breakfast**

- **Active Research Projects**

- Research Project #1564 - Measurement of Oil Retention in the Microchannel Heat Exchangers
Contractor: Prof. Cremaschi, Oklahoma State University
Project Monitoring Subcommittee: Samuel Yana Motta, Amir Jokar, Yi Qu, Omar Abdelaziz

The PI provided a detailed report to the group. Project should be completed by October 31st, 2014.

- Research Project #1535 - A Heat Transfer and Friction Factor Correlation for Low Air-side Reynolds Number Applications of Compact Heat Exchangers
Contractor: Prof. Cheng-Xian (Charlie) Lin
Project Monitoring Subcommittee: Chad Bowers, Mark Johnson, Omar Abdelaziz, Xudong Wang
The PI provided a brief update on the state of testing in the project. A no-cost extension has been granted and the project should be completed by December 30th, 2014.
- Update of Project 1645 Development of New Corrosion Test for Aluminum Heat Exchangers
Contractor: Prof. Seifollah Nasrazadani, University of North Texas
Project Monitoring Subcommittee: To be decided at this time.
PMSC membership was discussed and will be finalized through appointment by the Chair of TC8.4

Potential Research Projects

- Update on RFP1705 Investigation of Airside Fouling on Outdoor Heat Exchangers - The RFP has been proofed and should go out for bid in the fall of 2014.
- Reverse flow in microchannel heat exchangers suggested by Bill Fox – Chad Bowers pointed out that there has been some work done at a University that may have covered some of the area in this topic. Bill Fox agreed to review this research to see if there is still room for ASHRAE funded research on the topic.
- Acoustic issues in microchannel heat exchangers – Sankar Padhmanabhan is continuing to work on an RTAR for this topic.
- Screening of heat transfer and pressure drop characteristics of low GWP refrigerant in small diameter tubes. This is still of interest; Omar Abdelaziz and Yi Qu agreed to work on an RTAR
- TC1.3 working on RTAR for NH3 in U-bends - Some difficulties getting the RTAR approved. TC8.4 may be interested in co-sponsorship.
- Unconventional materials for heat exchanger construction (i.e. polymer heat exchangers) and novel manufacturing techniques - There was some difficulty in forming a framework for how this research would be conducted. Shenghan Jin agreed to keep looking into the topic and thinking about how to structure a possible RTAR.
- Co-sponsorship of Dry condition, heat exchanger with TC 6.3 - potentially interested, but will wait for TC6.3

New Ideas

- Rotating Heat Exchangers (Sandia Cooler)

- Novel methods for defrost
- Additional oil retention studies to add on to the data and modeling efforts from Project 1564
- High pressure events in microchannel condensers
- Co-sponsorship of an RTAR from TC1.3 on Tube Side Coatings for Enhancements in Evaporative Condensers

STANDARDS SUBCOMMITTEE – RAYMOND RITE REPORTED FOR GARY PRICE TO THE MAIN TC
Standard 33 – Method of Testing Forced Circulation Air Cooling and Air Heating Coils.

This standard has been (virtually) completed but not submitted for public review yet. AHRI Standard 410 is in revision and would like to have the benefit of Std 33's Method of Test to use for reference. Bill Fox gave more updates.

Standard 25 – Forced and Natural Convection Air Coolers

The committee is working on applying the method of test developed in AHRI 420 into Standard 25 with any required modifications. The subcommittee did not meet in Seattle and is planning an Interim Meeting by phone in the next couple of weeks to assess where this standard stands. Gordon Struder suggested remote meeting for further discussion.

Standard 20 - Method of testing for Air Cooled Condensers

Ray sent out several documents by email on June 23 and a SPC meeting was scheduled for Sunday. Ray Rite gave more update: good progress has been made so far. Title, purpose and the scope of the standard has been changed and get approved. Interim meeting will be scheduled in the next couple of weeks.

HANDBOOK SUBCOMMITTEE – BILL FOX

Bill Fox gave an update. Four chapters (4, 23, 27, 39) still required extensive work. Need more discussion on micro channel tubes for chapter 23, 27 and 39, such as frosting in heat pump application. Aaron Conger, Jun Wang, Chad Bowers, Lorenzo Cremaschi, Kashif Nawaz, Vikrant Aute volunteered to provide help.

MEMBERSHIP – LIPING LIU

Liping Liu gave a brief update. There are currently 95 corresponding members. 66 members have been confirmed active. The subcommittee will maintain the list up to date. There are currently 10 voting members. Mark Johnson, Kelvin Dunshee, Omar Abdelaziz, Stanislav Perencevis and Ebrahim S Al-Hajri (5 in total) will be rolling off the voting membership. Chad Bowers, Liping Liu, Bill Fox and Man-hoe Kim (4 in total) will be rolling on as voting members. In total there will be 7 voting member and 2 non-quorum member. This will be in effect after July 1st, 2014. Voting member can vote through E-meeting.

WEBSITE – YI QU

The website is in good shape and includes the new logo. Contents are up to date. It was suggested to have current and some past projects listed on the website

HONOR AND AWARDS NOMINATION- SHENGHAN JIN

The award nomination process and deadline was announced. The 2014-2015 George B. Hightower Technical Achievement Award is by September 1, 2014 and the 2014-2015 Service to ASHRAE Research Award is by September 30, 2014. There are also nominations for Distinguished Service Award, Exceptional Service Award. Honors and awards are point-based

and the record could be found on ASHRAE website member bios. It is strongly encouraged for every member to look over the record and be recognized for their contributions. The detailed awards and nomination process can be found at (<https://www.ashrae.org/membership--conferences/honors--awards/ashrae-honors-and-awards-program#howtonom>)

IX MTG LIAISON REPORT

Vikrant Aute gave a brief report for MTG on Low GWP Alternative Refrigerants. The scope, objectives and past meeting minutes can be found at: (<https://www.ashrae.org/standards-research--technology/technical-committees/section-mtg-multidisciplinary-task-groups/mtg-alternative-low-gwp-refrigerants>). Along with several TCs, AHRI, EPA and IIR are also represented on the MTG.

In addition to the program ideas, the MTG is reviewing the on-going and completed research projects pertaining to lower GWP refrigerants and their application.

The MTG meets during ASHRAE meetings (Wed, 10-11am) and also has teleconferences in between ASHRAE meetings. For the Seattle meeting, 6 sessions were sponsored/co-sponsored by the MTG and only one was accepted (Seminar 35 on Tuesday).

X OLD BUSINESS

None.

XI NEW BUSINESS

None.

XII ADJOURNMENT

Motion to adjourn meeting at 5:15pm.