

**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/TG/MTG/TRG No. 7.7 DATE July 15, 2014

TC/TG/MTG/TRG TITLE Testing & Balancing

DATE OF MEETING June 30, 2014 LOCATION Sheraton Seattle WA

MEMBERS PRESENT	YEAR APPTD	MEMBERS ABSENT	YEAR APPTD	EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE
Mr. Mark C Hegberg	2013	Mr. John R Hamilton	2013	Mr. Donald Prather
Mr. Justin F Garner	2013			Mr. Kent Anderson
Mr. James F Hoctor, Eng	2013			Mr. Tom Cappellin
Mr. Frederick A Lorch,	2010			Mr. Steve Wiggins
Mr. Eguene W Faris	2012			Mr. Jack Stegall
Mr. Gerald J Kettler, PE	2011			Mr. Bob Linder
Mr. Richard M Rose	2011			Mr. Leonard Mariani
Mr. Jack L Stegall	2011			Mr. Tom Meyer
Mr. Charles C Wright	2013			Mr. Byron Hagan
Mr. Frank J Spevak	2012			Ms. Adrienne Thomle
Mr. David E Bornside	2013			Mr. Gaylon Richardson
				Mr. Mike Wolf
				Mr. Tom Schlachter
				Mr. Eli Howard
				Mr. John Breidenthal

DISTRIBUTION

<i>All Members of TC/TG/MTG/TRG plus the following:</i>		
TAC Section Head:	Adrienne Thomle	adrienne.thomle@honeywell.com
TAC Chair:	Walter Grondzik	gzik@polaris.net
Manager Of Standards Manager Of Research & Technical Services	Stephanie Reiniche Mike Vaughn	sreiniche@ashrae.org mvaughn@ashrae.org
ALI/PDC Liaison Chapter Tech Transfer Chair	Hugh McMillan Chad Moore	hmcmillan3@copmcast.net cmoore@ergms.com
Research Liaison Standard Liaison	Philip Haves Rick Larson	phaves@lbl.gov rick.ashrae@gmail.com

Minutes
TC 7.7 Testing and Balancing
Annual Meeting
Monday, January 20, 2014 (2:15-4:15 PM)
Sheraton
Ballroom B (S2)
Seattle WA

1. Call to Order

Justin Garner

Mr. Garner asked all present to verify the roster information and update it as needed on the master copy. Additionally, it was requested that all guests should provide contact information on one of the sign in sheets.

- a. Attendance: 9/12 Voting Members – Quorum Present
- b. Mr. Hegberg to be arriving late

2. Introductions

Mr. Garner asked those present to introduce themselves and to identify the organization or company they represented. Those present introduced themselves.

3. Approve minutes of New York Meeting

Minutes from the Denver were introduced. After a brief discussion a motion to accept them as written was made by Mr. Rose and seconded by Mr. Hctor. The motion passed 9-0-0

4. Recognize Liaisons

Section Head Adrienne Thomele was in attendance (nothing to report)

5. Discuss issues from TC Breakfast

Mr. Garner Covered the information provided at the TC Breakfast. For all information covered in complete detail see Annex 1.

6. Subcommittee Reports

a. Handbook

Fred Lorch

- i. Final revision of our handbook chapter is to be finalized and mailed out in November so it can be reviewed prior to a vote to accept or reject it that is planned for the January 2015 meeting in Chicago.
- ii. GPC 11, and Standard 111 updates are ongoing. The progress is still centered on what information should be contained in the two documents. All three committees have liaisons and are working to provide their respective documents with the information that needs to be covered without overlap or conflicts.

b. Program

Tom Schlacter

- i. Conference Paper on Dual duct Systems Atlanta on Seattle Programs

- Sponsored Seminar 20 – PIC Valves, occurred July 1, 2014
Presenters: Jim Hocter, Justin Garner and Mark Hegberg
- Co-Sponsored w/ TC 7.7 a Forum discussing statistical sampling for CX, occurred Sunday June 29th before TC 7.7 Speakers David Bornside and Justin Garner
- ii. Program subcommittee met Friday 12-3; same time as Handbook Discussed following potential programs
 - Tips for Steam; apply for Chicago – Seminar by Schlachter, proposal due August 11, 2014
 - Measuring OA on Rooftops
Possible pair up with CEC requirements (RTU OA, plus other systems)
 - Log – T Research Paper
Atlanta, need to submit abstract by September 22, 2015
Terry? Need Name & contact info
 - Lab Control – being written by Richardson & Garner
submit for Orlando, Co-sponsor TC 9.10
 - Short Course - Testing, Adjusting & Balancing fundamentals
Mr. Hegberg to Chair. Call for other ideas and volunteers

c. Membership

Mark Hegberg

Mr. Hegberg welcomed guests and requested that any who wished to become members should contact a committee officer and update the required information on their my ASHRAE web account.

d. Research

Frank Spevak

- i. Current research Projects:
63 active projects, total value of \$10.8 million, number and value has been stable for a couple of meetings.
- ii. Since June 2013
16 projects completed, 20 new projects approved for funding, 12 TRP released for bids - Important - no project on hold due to funding
- iii. At Seattle:
 - 9 RTARs: 5 accepted with comments; 4 rejected with comments
 - 9 WS: 4 conditionally accepted; 4 returned with comments; 1 to be evaluated on Wed. 8 July, 2014
 - 4 TRP bid packages to evaluate on Wed. 8 July, 2014

- 2 URPs under review
- iv. RAC Continuous Improvement:
- Simplified RTAR form and approval requirements:
 - There are only 2 responses to an RTAR - Approved with or without comments; rejected with comments.
 - Research Manual Section 6 Instructions for PES revised and clarified
 - Discussion on executive session - All members, voting and corresponding, are allowed to remain in the meeting, with the exception of anyone with an interest in the bid.
- v. ASHRAE Strategic Plan 2014
Plan is available at the following web address:
<https://www.ashrae.org/about-ashrae/strategic-planning-documents/ashrae-strategic-plan-2014>
Now that this is complete work will begin on the ASHRAE Research Strategic Plan for the 2015-2020 time period is ready. ASHRAE looking for volunteers.
- e. Research Leasion Philip Haves
- Research activities and requests: Frank Spevak reported two RTARS were started
- f. Journal (No activities to report) Volunteer Needed
After Committee discussion it was decided that an article was needed on measurement. A good topic for a possible article for the ASHRAE Journal's (one page) technical page would be on how to use tools. Discussion included how to reach the young engineers with basic knowledge that is needed. Outline to be developed. Ms. Thomle noted that the volunteer could report back to the committee.
- g. Standards Fred Lorch
- STD 111 Gaylon Richardson
Mr. Richardson reported that all comments in by Chicago and voted out a more realistic goal is to foresee a vote in Atlanta
- GPC 11 Tom Schlachter
Mr. Schlachter reported that the much of the changes will complement the work being done in 111.

STD 151

Mr. Hegberg

After a vote to reaffirm the standard was taken via email and it is being recommended by the committee. . The formal vote to withdraw the Standard was done by email and forwarded via email to Rick Larson and all voting members on 6/24/2014. The vote to withdraw the standard was recorded as: 12 11-0-0 no no-votes no. One non-response status reported to Rick Larson.

h. Education

Need a volunteer

i. Web master

Robert Linder

(No updates at this meeting) Posting presentations will be investigated and Mr. Hegberg will meet with Mr. Linder on the presentations in the format needed.

7. Liaison Reports from other TCs or Organizations

TC 1.2

Frank Spevak

More of the fundamental Standards have been approved and will be out soon. Discussion of a presentation session on Pitot tubes and hot wire anemometers based on the research project. TC 1.2 will try to have a session soon and would like TC 7.7 to participate. TC 1.2 meeting is Tuesday and more will be decided.

TC 1.4

David Bornside

Research is required on evaluating PID and other control loops so testing can be done in a more focused manner.

TC 5.3

Gus Faris

Standard 9 out for review 1292 research project has three papers that are finishing up. ECMs are required in the 2013 fractional horsepower motors. 90.1 is running out of equipment efficiency improvements and are now looking at part loads and combining efficiencies. AHRA has a committee that is developing maps for testing equipment at numerous points. Thus, modeling is being studied at Baylor so mass flow can be incorporated into the energy models. RTAR for doing basic research on fan coils and an RTAR for measuring field pressure drop measurements. Design guide approved to be develop a Terminal Unit design Guide in house

Mr. Farris moved that 7.7 support the committee 5.3 RTAR on Understanding Fan Coil and the motion was seconded by Mr. Lorch and approved 10-0-2 Chairman voting

- TC 6.1 Mark Hegberg
- Working on Handbook revisions and numerous programs
- TC 7.9 Justin Garner
- Testing and balancing and commissioning was covered in a meeting where there was support for 100% verification
 - Mr. Kettler reported that the DOE wants to accredit TAB balancing technicians based on ISO standards based training. Standard 202 commissioning standard is coordinating other commissioning guidelines and user manuals so there is a recognized industry practice.
- TC 9.10 Fred Lorch
- An RTAR for work on finding replacement gases for testing hoods is under development
- AABC Gaylon Richardson
- AABC is completing a new standard on Testing and Balancing
- NEBB Robert. Linder
- Robert J. Linder (Bob) is the new NEBB President
 - Leonard Maiani is NEBBs new Technical Director.
 - The NEBB TAB Procedural Standard is being revised
- SMACNA Eli Howard
- HVAC Commissioning Manual Published
 - ICC on developing a maintenance inspection document for fire and smoke dampers.
 - The TABB Certified Technician and Certified Professional exams are now on-line.
- ACCA Don Prather
- No report
- TABB John Hamilton
- No Report

8. Old Business

- i. None Reported

9. New Business

Mr. Hegberg promoted a conceptual idea to teach a PES on TAB. Mr. Howard said it appeared the class could be done, and SMACNA would support the effort by offering use of testing facilities in Chicago.

Mr. Richardson asked who would coordinate the hands on training coordination. He noted that it should be made clear that the curriculum is similar to a development seminar but with hands on. He added that it should be made clear that it is not to be advertised as any type of

certification

Mr. Rose recommended putting a subcommittee together to flush out the the hours rooms available, etc.

Mr. Hegberg volunteered to chair subcommittee and to develop some go to meeting time for those who wished to participate.

Mr. Hegberg also noted that the size of class would need to be limited and based on the hands on limitations at the facility.

After further committee discussion: a class day on TAB with an additional hands on day on Saturday for those who take the class will be offered if logistics can be worked out. It is proposed to be offered during the next ASHRAE Meeting in the Chicago at a classroom and at the TABB training center.

Questions to be answered:

- can it be free
- can we get a room
- can we get transportation
- Number of people who can be trained

10. Comments:

(none recorded)

11. Adjourn Motion to adjourn was made by Mr. Rose, Second by Mr. Kettler and accepted by committee consensus

NEXT MEETING: Chicago, IL January 26, 2:15-4:15

Annex 1

Announcements and Reminders for TC/TG/TRG & MTG Chairs Seattle 2014

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 Tour 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. Location of Section Head Mailboxes at this Society meeting & Free WiFi Access at this Society meeting

Mailboxes are located just outside ASHRAE Headquarters Office (Issaquah Room – 3rd Floor – Sheraton Seattle Hotel).

Also, Internet access and computers for e-mail are available in the Cyber Café located in the registration area during operating hours. Please be considerate to others and limit your usage to five minutes. Within the convention center there are free Wi-Fi hot spots. Level 1 in the seating area near the Seattle Visitors Center; Level 2 in the International Meeting Place and Level 4 in the seating areas near Subway and Tougo.

Internet is also available complimentary in your sleeping room in the Sheraton.

Wireless internet will be available in all meeting rooms at the Sheraton. ASHRAE will be working with the internet provider to manage the bandwidth so that member expectations of accessibility and speed are fulfilled. We would like to request that everyone limit their usage to functions that do not use excessive bandwidth such as Facebook, YouTube, streaming video, etc. Access code is **ASHRAE2014** and the code is case sensitive.

5. 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.

6. 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>

7. **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.

8. **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.

9. 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.

10. 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.

11. 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)

12. 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>

13. 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.

14. 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.

15. 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

16. 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

17. 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).

18. 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.

19. 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.

20. 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>.

21. 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.

22. 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.

23. 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.ahrepomexico.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>

24. **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.
25. **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 .
26. **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)
27. **Ask TCs to List Handbook chapters that TC has responsibility for and any specific issues or problems they have in making updates**
28. **REMIND: TC’s to participate and post on ASHRAExchange.org**
29. **REMIND: Program Subcommittee chairs to attend training (7/1, 11:15a-12:00p, Room 614 (6, WSCC)**
30. **REMIND: Research Subcommittee chairs to attend breakfast (6/30, 6:30a-8:30a, Grand Ballroom C (2, Sheraton)**
31. **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.**