

**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 June 29, 2015

TC/TG/MTG/TRG TITLE Testing & Balancing

DATE OF MEETING June 29, 2015 LOCATION Hilton Atlanta GA

MEMBERS PRESENT	YEAR APPTD	MEMBERS ABSENT	YEAR APPTD	EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE
Mr. Justin F Garner, PE	2013	Mr. Charles C Wright	2013	Mr. Bill Austin
Mr. John R Hamilton	2013	Mr. Mark C Hegberg	2013	Mr. Tom Cappellin
Mr. James F Hoctor, Eng	2013			Mr. Byron Hagan
Mr. Frederick A Lorch, PE	2012			Mr. Eli Howard
Mr. Eguene W Faris	2012			Mr. Stan Kutin
Mr. Gerald J Kettler, PE	2011			Mr. Michael Langton
Mr. Richard M Rose	2011			Mr. Lloyd Le
Mr. Frank J Spevak	2012			Mr. Will Mak
Mr. David E Bornside	2013			Mr. Bob Moss
Mr. Jack Stegall	2011			Mr. Dane Richards
				Mr. Julian Rochester
				Mr. Donald Prather
				Ms. Adrienne Thomle

DISTRIBUTION

<i>All Members of TC/TG/MTG/TRG plus the following:</i>		
TAC Section Head:	Adrienne Thomle	adrienne.thomle@honeywell.com
TAC Chair:	Eric Adams	eric.adams@carrier.utc.com
Manager Of Standards Staff Liaison	Stephanie Reiniche Mike Vaughn	sreiniche@ashrae.org mvaughn@ashrae.org
ALI/PDC Liaison Chapter Tech Transfer Chair	Darin Nutter Chad Moore	dnutter@uark.edu cmoore@ergms.com
Research Liaison Standard Liaison HB Applications	Philip Haves Rick Larson George Sestak	phaves@lbl.gov rick.ashrae@gmail.com gsestak@verizon.net

DRAFT Minutes
TC 7.7 Testing and Balancing
Annual Meeting
Monday, June 29, 2015 (2:15-4:15 PM)
Hilton Pavilion (2)
Atlanta GA

- 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: 10/12 Voting Members – Quorum Present
- 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 Chicago were introduced. After a brief discussion a motion to accept them as amended was made by Mr. Rose and seconded by Mr. Spevac. The motion passed 10-0-0
- 4. Recognize Liaisons**

Section Head Adrienne Thomle 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

Fred Lorch reported handbook section updates were completed and missed the ASHREA filing deadline. Based on the options available it was decided to hold off on the changes and submit them early during the next cycle. He reported he was stepping down as chair of Handbook. Mr. Garner volunteered to fill the position of Handbook chair.
 - b. Program Tom Schlachter
 - i. Mr. Schlachter reported that the submissions made by TC 7.7 for Atlanta which had not been accepted would be repackaged and moved forward for consideration at future conferences.
 - ii. Program subcommittee met Friday 12-3; same time as Handbook Discussed potential programs See Annex 2 for Program meeting minutes.

Mr. Spevak reported the following late breaking update not included in the program minutes in Annex 2:

- Log – T, RP-1245. Mr, Spevak reported Terry Beck was ready to make a presentation on the report and a 2 part workshop should be requested as the format. The workshops could be incorporated with a discussion on how TAB instruments have become more accurate due to advancements in technology. TC 1.2 Chair Steve Idem a possible co-sponsor was also updated on the progress made. To be accepted in Atlanta, the workshops would need to have abstracts submitted by September 22, 2015.

c. Membership

Justin Garner

Mr. Garner welcomed guests and reported that any who wished to become members should contact a committee officer and update the required information on their my ASHRAE web account. He reported the roster changes had been submitted and the following members would be rolling off: Mr. Hegberg, Mr. Kettler, Mr. Rose, and Mr. Stegall. He concluded by reporting, the following members would be added as voting members: Mr. Le, Mr Linder, Mr. Prather and Mr Schlachter.

d. Research

Frank Spevak

i. Frank Spevak reported the following information on ASHRAE Research:

- Current activity
 - 61 active projects
 - \$10 million worth of research on-going
 - Money may be a little tight this fall but should be back to regular level next year
- In the last 6 months:
 - 11 projects complete
 - 11 projects approved
 - 13 tentative research projects (TRP) released
- At this meeting:
 - 9 Research Topic Acceptance Request (RTAR) received
 - 3 accepted
 - 4 accepted with comments
 - 2 rejected
 - 8 Work Statements (WS) received
 - 4 accepted

1 accepted with comments
 1 returned
 2 rejected
 8 TRP bid packages to evaluate
 4 Unsolicited Research Projects under review

- Concept of Stage Funding of future research projects All WS and TRPs must have a milestone chart with associated costs All proposals should have a chart with the milestones and the actual cost breakdown for each milestone. Payments made at each satisfactory completion of each milestone. This is different than just a payment cycle or a percentage of completion payment. More work needed to make this happen as well as get the contractor aware of the process.
- ASHRAE Strategic Plan - 2014
 Initiative 5-ASHRAE's role in the residential sector - will work to increase research in this area
- RAC Training Web based modules on:
 RTAR Writing
 WS Writing
 PES Functions & Responsibilities
 PMS Functions & Responsibilities
 Target is June 2016

Note: There was a forum held at 11 AM on Monday to provide ASHRAE with a number of suggestions to improve not only the ASHRAE research process but also the dissemination of information after the research has been completed. Hope to see some more information from RAC in the future on the suggestions that were made.

e. Journal Justin Garner

Mr. Garner reported the committee is looking for a volunteer to fill the Journal spot.

e. Standards Fred Lorch

STD 111 Mr. Garner
 Mr. Garner reported that unfortunately, Mr. Richardson was not able to attend the ASHRAE summer meeting due to an emergency, and that the work on STD 111 was progressing.

GPC 11 Tom Schlachter
 Mr. Schlachter reported that the progress on updating GPC 11 was continuing and there would be a series of teleconferences scheduled so the committee could spend more time on the update.

f. Education Justin Garner
Mr. Garner reported the committee is looking for a volunteer to fill the Journal spot.

f. Web master Justin Garner
Mr. Garner reported that Mr. Linder could attend the meeting in Atlanta and that he had the web site up to date and would continue to do so.

7. Liaison Reports from other TCs or Organizations

TC 1.2 Frank Spevak

- SSPC 41 Standard Methods for Measurement's update is continuing. The pressure section was rolled out last year. The committee voted to release the document for public review.
- ASHRAE Standard 41.12P Standard Methods for Uncertainty Analysis was being developed to replace Guideline 2.

TC 1.4 David Bornside
Nothing new to report.

TC 5.3 Gus Faris
Mr. Faris reported there were 2 research papers and 2 programs in the works and the handbook closing date had been missed but the committee opted to have the online version updated with the new material.

TC 5.2 Gus Faris
TC 5.2 Duct Design is attempting to change their scope by adding verbiage to include duct and additional equipment (for example the equipment casing).

TC 5.6 Gerald Kettler
Mr. Kettler reported for testing a smoke system in an elevator shaft bears watching as it progresses. Currently the committee was looking at a minimum pressure requirement of 0.1" and based on his preliminary finding of 1800 CFM leakage per elevator door, the number would be hard to meet without very large fans.

TC 6.1 Don Prather
Nothing reported.

TC 7.9 Justin Garner
Mr. Garner reported that TC 7.9 was planning on reaching out to other committees because it might take a super committee to develop the commissioning standard they envisioned. The meeting was to take place after the TC7.7 meeting, thus nothing further to report.

TC 9.10 Fred Lorch
Mr. Lorch reported there was ongoing research into a replacement gas for field testing contaminant removal.

AABC Justin Garner

- AABC's new standard on Testing and Balancing is in the ANSI review

NEBB process and the training manual is close to being completed.

SMACNA No report.

Mr. Howard reported a Total System Leakage Standard would be released later this summer and SMACNA was completing a standard on spiral duct construction.

ACCA Mr. Prather reported ACCA would be releasing a new entry level residential and light commercial TAB related video series and the updated Technician's Guide & Workbook for Quality Installations that aligns with the updated ANSI/ACCA 5 QI-2015 *HVAC Quality Installation Specification*.

ICB/TABB Mr. Hamilton reported with the addition of an HVAC Fire Life Safety certification they now offer 17 ANSI training certifications for technicians.

8. Old Business

- i. None Reported

9. New Business

(None recorded)

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

NEXT MEETING: Orlando, FL January 25, 2:15-4:15

Annex 1

Announcements and Reminders for TC/TG/TRG & MTG Chairs ATLANTA 2015

A. NEW!

1. **PCM Process** - The process for adding new PCMs to TC rosters and notifying all affected parties has now been automated through the ASHRAE website. Potential new TC members now just need to click on the **JOIN A TC** button at the top of the TC page (www.ashrae.org/tcs) on the ASHRAE website to get started.
2. **New Easier to Use Standard Website Template in Development** - We are working with the Society's Electronic Communication Committee (ECC), staff, and a consultant to modernize and streamline the template for TC websites. This will include WIZYWIG editing, automatic rosters and simplified document uploading. There will be no more HTML editing. We have a preliminary design and will be working with several volunteer beta testers from various TCs to finalize the design and operation. Anticipate release sometime in the fall of 2015.
3. **Coming Soon! - New TC E-mail Position Aliases for 15-16 Society Year** - We are in the process of creating new position e-mail alias addresses for each of the remaining mandatory positions of the Technical Committee management team (Secretary, Standards Sub. Chair, Program Sub. Chair, Handbook Sub. Chair, and Webmaster). The process will take 4-6 weeks. In the meantime, we ask that you review your membership profile to ensure that your email address is up-to-date. Your profile can be accessed by logging onto the "Member's Only" section at www.ashrae.org. The 15-16 E-mail Alias list will then be distributed to the TCs once this work is complete.
4. **RAC Prioritizing Research Topics Related to the Residential Sector**
Starting in the 2015-2016, RAC will be prioritizing for bid accepted research topics that support Goal #3 below from the Research Strategic Plan.

Goal #3: *To reduce significantly the energy consumption for HVAC&R, water heating and lighting in existing homes.*

B. AT THIS MEETING

1. **On-Site Training**
 - i. **TC/TG/TRG Chair's Training Workshop Reminder** - Sunday June 28, 9:45-10:45 AM in Salon C Room (2nd floor) in the Atlanta Hilton Hotel. This session will be a repeat of the same content that was presented in a 6/12 via a webinar for individuals that could not make this 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 also. The main focus of this particular workshop will be on ASHRAE Tools for TCs.
 - ii. **RAC's Research Subcommittee Chair's Breakfast** - Monday, 6/29, 6:30 AM

Please encourage your Research Subcommittee Chair or another representative from the TC to attend this meeting so that your RAC Research Liaison (RL) can get an update on the TC's research activities and so that your RL can help resolve issues & questions that TC may have concerning their research program. The training portion of this meeting will focus on the duties and responsibilities of Project Monitoring Subcommittee (PMSC) Chair. After the meeting, RAC plans to record this training presentation and post to the ASHRAE website as a new training webinar that current and new PMSC chairs can access at any time.

iii. TC Program Subcommittee Chair Training in Atlanta - Tuesday, 6/30, 11:15AM – Noon, Room 315, (3rd Floor) Atlanta Hilton Hotel. *Don't complain about the meeting program and your TC's submissions if you have not been to training.*

A few things you might learn in training are as follows:

- Incomplete program submissions is the biggest reason for rejection now. All information is needed up front for CEC selection process.
- A packaged session on a similar topic is the best way to greatly improve your chances for acceptance.
- There is no difference in how CEC handles 60 and 90 minute program slots. 60 minute slots are just as good as 90 minute slots if complete.

2. RAC Forum #3 – Is the ASHRAE Research Process Efficient?

Do you have a good idea for how the ASHRAE Research Program and its current processes could be improved? If so, members of the ASHRAE Research Administration Committee (RAC) would very much like to talk to you more about your idea in Atlanta at the forum below.

Monday, June 29

11:00 A.M. to 12:00 PM

Forum 3 – Is the ASHRAE Research Process Efficient
206/207 Room – 2nd Floor – Atlanta Hilton Hotel

3. Location of Section Head Mailboxes at this Society meeting & Free Wi-Fi Access at this Society meeting - Mailboxes are located just outside ASHRAE Headquarters Office (208/209 – 2nd Floor – Atlanta Hilton 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.

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

Wireless internet will be available in all meeting rooms at the Hilton. 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. Applications such as Facebook, YouTube, streaming video, etc. use excessive bandwidth. Access code is ASHRAE2015 and the code is case sensitive.

4. **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)

5. **E&P Beta Test #8 TC meetings being Held in Atlanta** - The 8th 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 Atlanta and the following ten TCs have agreed to participate in this test: TC 1.5, TC 2.2, TC 4.2 (RP-1561 & RP-1699 PMSC), TC 5.8, TC 6.8, TC 7.9, TC 8.4, TC 8.8, TC 9.2, TC 10.2 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, 7/1.

C. UPCOMING DEADLINES

1. **Thank You Letters to Employers** - ASHRAE President – Thomas Phoenix – 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 2014-2015. 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.

2. **2015-2016 Hightower Award Nomination Process and Deadline** - Nominations for the 2015-2016 George B. Hightower Technical Achievement Award are due to you Section Head by September 1, 2015. 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, Forms..." heading: <http://www.ashrae.org/tcs>
3. **2015-2016 Service to ASHRAE Research Award Nomination Process and Deadline** - Nominations for the 2015-2016 Service to ASHRAE Research Award for TC volunteer efforts in research are due to RAC research liaison by September 1, 2015 (new date). 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>
4. **Seminar and Forum proposals for Orlando are due by Monday, August 10, 2015.** Please visit the following site to submit your proposal: <http://ashraem.confex.com/ashraem/w16/cfp.cgi>

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

5. **CEC requests for Program Tracks** - 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, and to create meetings that reach all of ASHRAE's constituencies, the CEC seeks ideas for tracks for the Las Vegas 2017 meeting 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). You can also add your track suggestion in the "Comment" section of the TC Activity form for the Atlanta meeting.

D. REMINDERS

- 1. 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, 2015 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.

Thus far, approximately 30.6% (up 2.6% since Seattle meeting) of TC Members have declared their discipline.

- 2. TC Volunteers willing 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.
- 3. 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
- 4. 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 Atlanta 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>

5. **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. 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.
6. **15-16 Rosters Access & Distribution** - Remember, the current 2014-2015 roster for your TC, TG or MTG is in effect until after the June meeting this year – through Wednesday, July 1st.

By now, each TC, TG and MTG chair should have received a PDF & MS-Excel file of their new 2015-2016 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 (PCM) 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.

7. **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.

- 8. 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/>

E. RECENT ANNOUNCEMENTS

- 1. Outstanding TC Award** - TAC will continue in the 2015-2016 Society year with the new Outstanding Technical Committee Award. The purpose of the award is to recognize, annually, a single Technical Committee within each TC 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.
- 2. Recent MTGs that have been formed** - TAC approved the formation of the following new Multidisciplinary Task Group (MTG):
MTG.O&MEE – Operations and Maintenance Activities That Impact Energy Efficiency
Scope: MTG.O&MEE will coordinate TC/TG/TRG activities to help support the application of ASHRAE guidelines, Standards and other technical resources to support regulatory bodies, utilities, building owners and others who are attempting to enhance efficiency of existing buildings. Responsibilities include suggestions for research, development and presentation of technical programs of all types on maintenance and its impact on energy consumption and efficiency. It will be especially involved with interactions with those who are introducing and evaluating strategies for building efficiency enhancements.

For more information on this MTG and the six other active 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.

- 3. Standard 203-2014 now available for use and reference** - Standard 203-2014, Method of Test for Determining Heat Gain of Office Equipment Used in Buildings, is published. The Chair of SPC 203, Glenn Friedman, would like to make other project committee chairs aware of it and possibly reference it in other standards. For questions please contact Glenn Friedman, gfriedman@taylor-engineering.com, (510) 263-1542 direct, (510) 220-5895 mobile.”
- 4. Recent updates to the TC MOP (Manual of Procedures)** - Part 4 – Meetings of the Manual of Procedures (MOP) for ASHRAE technical committees (TCs/TGs/MTGs/TRGs) has been revised to clarify that attendance at technical

committee meetings and subcommittee meetings must be open, except as allowed for by executive session procedures, and that an interim meeting is allowed with proper notification.

Section and 2.5.1.4 (1) has been amended to allow one Voting Member non-quorum to count towards the minimum number of voting members in Section 2.5.1.1, which is currently 6 voting members.

Section 5.1.2 has been amended to clarify how quorum is established for TCs with only six members and some designated a Member Non Quorum.

See the following link for the latest version of the TC MOP <http://www.ashrae.org/tcs>

5. **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. This form can be downloaded from the Technical Committee webpage under the "TC Forms and Documents" page - <https://www.ashrae.org/standards-research--technology/technical-committees/tc-forms-and-documents> . Section heads can also provide an electronic copy of the form if requested.
6. **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.
7. **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:

- At the bottom of the calendar list on the left, click Add and select Add a friend's calendar.
- 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:

- Make sure you're using a supported operating system and Outlook version.
- Download Google Calendar Sync (version 0.9.3.6) at
- http://dl.google.com/googlecalendarsync/GoogleCalendarSync_Installer.exe
- 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.
- Click OK to confirm that you're aware this is an executable file.
- Read through the Google Calendar Sync Terms of Service, and click I Agree.

- 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.

F. UPCOMING ASHRAE CONFERENCES

1. **Program Focus at Atlanta Annual Conference** - The Atlanta Conference Technical Program addresses broad topics in the application of technology to practice, specific applications in hydronic heating systems, variable refrigerant flow systems, O&M and indoor environmental quality, as well as new reports on research taking place worldwide. Specific program tracks are as follows:

- Building Operation, Maintenance, and Optimization/Commissioning Track
- High Performance Building Track
- HVAC&R Fundamentals and Applications Track
- HVAC&R Systems and Equipment Track
- Indoor Air Quality Track
- Laboratories Track
- Modeling throughout the Building Life Cycle Track
- Moving Advanced Energy Design Guidance to Mainstream Track
- Refrigeration Track
- Research Summit Track

The Atlanta conference will also host the third annual ASHRAE Research Summit, which will present innovations in HVAC&R research with particular emphasis on high performance building design and its role in a clean energy economy, and brings together researchers to present and discuss the latest research. Researchers will present papers, seminars and forums or participate in panel discussions. Also, highlights on ongoing ASHRAE funded research will be presented.

2. **Orlando Meeting - January 23 - 27, 2016**

- Orlando Seminar and Forum Session Proposals are due August 10, 2015
- Revised conference papers / Final Technical Papers due August 21, 2015
- Conf. and Tech. Paper Final Accept/Reject Notifications sent August 28, 2015
- Seminar, Forum, Workshop Accept/Reject Notifications sent September 11, 2015
- All presentation files (PPT) due online – January 4, 2016
- Conference Website: <http://www.ashrae.org/orlando/>

3. St. Louis Meeting - June 25 – June 29, 2016

- St. Louis Conference Paper Abstracts Due are due September 14, 2015
- Technical Papers initial drafts due September 14, 2015
- Conference Paper Abstract Accept/Reject Notifications sent October 5, 2015
- Website Opens for Seminar, Forum and Workshop Proposals on January 4, 2016
- Final Conference Papers Submitted for Review due January 4, 2016
- Conference Website: <http://www.ashrae.org/stlouis/>
- Conference Program Chair: Tom Kuehn Email: kuehn001@umn.edu

Program Focus at St. Louis Annual Conference

- i. Track 1: Advances in Refrigeration Systems and Alternative Refrigerants
Track Chair: Frank Schambach
Email: frankschambach@mindspring.com
This track seeks papers and programs that explore the wide range of refrigeration systems under development with special emphasis on the use of alternative refrigerants in vapor compression machines to address environmental concerns.
- ii. Track 2: Research Summit
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- iii. Track 3: Fundamentals and Application
Track Chair: David E. Claridge
Email: dclaridge@tamu.edu
Fundamental information and applications of fundamentals related to all aspects of HVAC&R are welcome. This can range from psychrometric properties and processes to combustion, controls, HVAC system and envelope fundamentals and beyond.
- iv. Track 4: HVAC Systems and Equipment
Track Chair: Alan Neely
Email: alan_neely@pghcorning.com
This track will include presentations on best practices to implement traditional, non-traditional, and hybrid approaches to achieve successful HVAC&R systems design. Objectives include high performance systems and equipment, LEED certified designs and sustainable buildings.
- v. Track 5: Smart Building Systems/Remote Monitoring and Diagnostics
Track Chair: Samir Traboulsi
Email: traboulsi.samir@gmail.com
Smart buildings address HVAC&R equipment operation (chiller sequencing, soft start), integration into complete systems and can potentially interface with multiple building complexes and micro grid operation. This track includes papers on

advanced communication protocols, system integration, BMS tools, data management and analysis.

vi. Track 6: Indoor Environment: Health, Comfort, Productivity

Track Chair: Dennis Alejandro

Email: denzjac@yahoo.com

Buildings and other enclosed spaces are increasingly required to provide safe, healthy environments in an energy efficient manner. Papers in this track will review the balance between environmental health and energy efficiency in buildings and help define future education, policy and research directions.

vii. Track 7: Professional Skills Beyond Engineering

Track Chair: Rachel Romero

Email: rachel.romero@nrel.gov

This track seeks to ensure professional skills are being developed and maintained beyond engineering essentials. Emphasis will be placed on meeting the professional development and business needs of today and converting them into the building blocks of tomorrow's success.

viii. Track 8: Renewable Energy Systems and Net Zero Buildings

Track Chair: Kevin Gallen

Email: kevin@gallenengineering.com

Wind, hydroelectric and solar are just a few of the alternative and/or renewable energy sources that are being used in HVAC design as we strive for Net-zero and high efficiency buildings. This track will address recent advances in alternative energy systems and equipment and new design strategies for achieving Net-zero buildings.

G. UPCOMING WORKSHOPS AND CONFERENCES

1. 2015

- i.** ISHVAC-COBEE 2015: 9th International Symposium on Heating, Ventilation and Air Conditioning (ISHVAC) and 3rd Conference on Building Energy and Environment (COBEE) - July 12 – 15, 2015 - Tianjin, CHINA – Contact: <http://www.cobee.org/>
- ii.** ICR2015 (24th IIR International Congress of Refrigeration) - August 16 – 22, 2015 - Yokohama, JAPAN – Contact: <http://www.icr2015.org/index.html>
- iii.** Cold Climate 2015 - October 20 – 23, 2015 - Dalian, CHINA – Contact: <http://www.coldclimate2015.org/>
- iv.** 11th International Conference on Industrial Ventilation - October 26 – 28, 2015 - Shanghai, CHINA – Contact: <http://www.ventilation2015.org/>
- v.** IBPSA 2015 (14th International Conference of the International Building Simulation Conference) – December 7 – 9, 2015 - Hyderabad, INDIA – Contact: <http://www.bs2015.in/>

2. 2016

- i. International Air-Conditioning, Heating, Refrigerating Exposition (AHR Expo) – 2016 - January 25 – 27, 2016 - Orlando, FL – Contact: <http://www.ahrexpo.com/>
- ii. CLIMA 2016 - May 22 – 25, 2016 - Aalborg, DENMARK – Contact: <http://www.clima2016.org/welcome.aspx>
- iii. IAQVEC 2016 (9th International Conference on Indoor Air Quality Ventilation & Energy Conservation in Buildings) – Oct. 17 – 19, 2016 - Seoul, SOUTH KOREA – Contact: <http://iaqvec2016.org/>

Annex 2

TC 7.7 – Program Sub-Committee Report

July 28, 2015 – Atlanta

Tom Schlachter

1. TC 7.7 Sponsored Program for Atlanta
 - Track 5 – Building Operation, Maintenance & Optimization/Commissioning
 - Steam Tips for the Engineer, Contractor, Cx Authority & Building Operator
 - Chair: Justin Garner & Presentation: Tom Schlachter
 - Wednesday, 9:45 -10:45, Level 2, Salon D
2. See attached program due dates for Orlando & St Louis
3. Lab Tracking Controls – Blade vs Venturi
 - Garner to submit Journal Article
 - Garner to reach-out to TC9.10 for future Conference Paper and/or Seminar
4. LOG T, RP-1245 Technical Paper, still owed form K-State Research
 - Frank Speviak to provide update
 - Previously Report
 - Mr, Spevak reported Terry Beck was ready to make a presentation on the report and a 2 parts.
 - The presentation could be incorporated with a discussion on how TAB instruments have become more accurate due to advancements in technology. TC 1.2 Chair Steve Idem a possible co-sponsor
5. TAB Training Short Course
 - Joint Venture with AABC, NEBB, TABB, SMACNA, etc
 - Classroom & Hands On
 - Utilize SMACNA training center?
 - Chairman Hegburg wants to target St Louis, Summer 2016
6. Potential future Programs
 - Updates to Handbook, Standard 111 & GPC-11, after publication in 2017
 - Underfloor Systems – Design Misconceptions, Installation & TAB Challenges
 - RFQ – Selecting a quality TAB Consultant
 - Invite participation form SMACNA, TABB, NEBB & AABC Rep's
 - Controls – Responsibilities & Roles
 - Invite participation from TC 5.3 & TC 7.9

Orlando Program Dates

June 4, 2015	Website Opens for Seminar, Forum and Workshop Proposals
July 6, 2015	Final Conference Papers Submitted for Review (Includes Bio, Learning Objectives and Methods of Assessment)
August 3, 2015	Conference Paper accept/reject notifications
August 10, 2015	Seminar, Forum and Workshop Proposals Due
August 21, 2015	Revised Conference Papers/Final Technical Papers Due
August 28, 2015	Conference and Technical Paper Final Accept/Reject Notifications
September 11, 2015	Seminar, Forum, Workshop Accept/Reject Notifications
December 4, 2015	Upload of PPTs Begins
January 4, 2016	All PPTs Due Online
January 20, 2016	Final Day for Commercialism Revision Upload Prior to On-Site
January 23, 2016	Speaker's Lounge Opens

Track 1: Systems and Equipment

Track Chair: Gary C. Debes

Email: gcdebes@verizon.net

Selection of equipment and systems is paramount to HVAC&R design. Papers and programs in this track will assist designers, engineers, and operators in the design, selection, and operation of HVAC&R systems and equipment.

Track 2: Fundamentals and Applications

Track Chair: Cynthia Moreno

Email: cindym@tmmechanical.com

Fundamentals are the foundation for understanding applications in engineering. Key components of ASHRAE fundamentals include thermodynamics, psychrometrics, fluid and mass flow, IAQ, and building envelope. This track provides opportunities for papers and presentations of varying levels across a large topic base. Concepts, design elements and shared experiences for theoretical and applied concepts of HVAC&R design are included.

Track 3: Design Build

Track Chair: James Liston

Email: jfliston@verizon.net

Joining the contractor and the designer into the same team, the design-build method of project delivery is increasing in percentage of projects awarded in the US. This track explores the challenges and benefits of D-B project delivery. Highlight successful projects; discuss contracts; review management responsibilities; offer alternative design and construction processes. These topics and more will be included.

Track 4: International Design

Track Chair: Leon Shapiro

Email: leoneshapiro@gmail.com

Design for various environmental elements, geography and culture demand that new and innovative strategies be developed. As an international organization, ASHRAE strives to meet the needs of a global membership. HVAC&R systems vary globally and this track

provides an opportunity to share innovative and necessary design elements that can be shared internationally.

Track 5: Standards, Guidelines and Codes *Track Chair: Michael Collarin*

Email: Michael.Collarin@parsons.com

ASHRAE is known for its standards and design guidelines – and they are constantly evolving with the intent on improving the built environment and its systems. Designers, Contractors, Architects and Owners must be able to keep up with the continuing changes in the current cycle but to also be prepared for the future changes. In addition, there is a large interaction of ASHRAE with the code authorities and government to incorporate these standards and guidelines. The series of sessions in this track highlight the changes to the standards and guidelines, their projected path and optimum design techniques to meet or exceed the standards.

Track 6: Cutting-Edge Technologies *Track Chair: Ann Peratt*

Email: agregg.ksu@gmail.com

As energy codes become increasing more stringent, we are challenged to find creative ways to improve efficiencies in the effort to achieve net zero buildings. This track will include the most recent advances in HVAC&R system design, equipment, and construction techniques. Programs included will focus on efficiency, responsible use of resources and energy recovery.

Track 7: The Great Debate *Track Chair: Chuck Curlin*

Email: ccurlin@shultzeg.com

Engineers commonly weigh multiple solutions to find the best match for a certain project. Centralized or Decentralized heating and cooling? Chemical or non-chemical water treatment? These sessions and papers will present divergent methods for accomplishing the same task. Hear all sides of the debate and decide for yourself.

Track 8: Modern Residential Systems *Track Chair: Jennifer E. Leach*

Email: pennst8jen@yahoo.com

Engineering for residential HVAC and plumbing systems and equipment used to be referred to as catalog engineering: for a two bedroom house choose one from Column A; for a three bedroom house choose one from Column B. Recent years have seen a boom in energy efficient solutions for the savvy, fiscally-conscience home owner. From glazing to water heating to lighting, this track will provide you with the latest advances for the residential market.

Conference Program Chair: Jennifer Leach *Email: pennst8jen@yahoo.com*

Staff Support For information on the technical program, special events, special sessions and general conference inquiries

Tiffany D. Cox Assistant Manager of Conference Programs
St Louis Program Dates

Email: tcox@ashrae.org

September 14, 2015 Conference Paper Abstracts Due

September 14, 2015 Technical Papers Due

October 5, 2015	Conference Paper Abstract Accept/Reject Notifications
January 4, 2016	Website Opens for Seminar, Forum and Workshop Proposals
January 4, 2016	Final Conference Papers Submitted for Review (Includes Bio, Learning Objectives and Methods of Assessment)
January 26, 2015	Conference Paper Accept/Revise/Reject Notifications
February 8, 2016	Seminar, Forum and Workshop Proposals Due
February 15, 2016	Revised Conference Papers/Final Technical Papers Due
February 26, 2016	Conference and Technical Paper Final Accept/Reject Notifications
March 23, 2016	Seminar, Forum and Workshop Accept/Reject Notifications

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Conference Program Chair: Tom Kuehn *Email: kuehn001@umn.edu*

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