



1791 Tullie Circle, N.E./Atlanta, GA 30329
404-636-8400

**FINAL APPROVED MINUTES
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. TC 3.1 DATE January 22, 2018

TC/TG/MTG/TRG TITLE Refrigerants and Secondary Coolants

DATE OF MEETING June 26, 2017 LOCATION Long Beach, CA

MEMBERS PRESENT	TERM EXPIRES (June yr. listed)	MEMBERS ABSENT	TERM EXPIRES (June yr. listed)	EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE
Steve Kujak (Vice Chair/Research) –	2018	Knut Petry – voting	2020	Warren Clough (Secretary)
Kevin Connor (Handbook)	2020			Ken Shultz (Research)
Sean Cunningham (Webmaster)	2020			Chris Seeton (VC, Programs)
Bob Richard- voting	2020			
Ganesan (Sonny) Sundaresan – voting	2017			
Kenji Takizawa- voting	2020			
Barbara Minor- voting	2019			
Marc Scancarello- voting	2019			
Debra Kennoy (Standards)	2019			

DISTRIBUTION: All Members of TC/TG/MTG/TRG plus the following:	
TAC Section Head: Jay Kohler	SHx@ashrae.net Where x is the section number
All Committee Liaisons As Shown On TC/TG/MTG/TRG Rosters (Research, Standards, ALI, etc.)	See ASHRAE email alias list for needed addresses.
Mike Vaughn, Manager Of Research & Technical Services	MORTS@ashrae.net

Corresponding Members and Guests		
Mark McLinden	Valerie Lisi	Greg Linteris
Trevor Bellon	Samuel Yana Motta	Brian Fricke
Stephen Spletzer	Bryan Armstrong	
Sunil Nanjundaram	Derek Hamilton	
Takashi Shibaname	Chuck Booten	
Scott Macleod	Tom Leck	
Gus Rolotti	Kit Fransen	
Patrick Coughlan	Harrison Skye	
Rosine Rohatgi	Amir Jokar	
Elyse Sorenson	Jdue Uithaese	
Roberto Urrego	Dave Wilson	
Masud Chowdhurt	Casey Scruggs	
Greg Smith	Jian Sun Blanks	

KEY CONTACTS

Liaisons:

Steve Kujak, Trane, RAC Liaison
 Michael Vaughn, ASHRAE Staff Liaison
 Niels Bidstrup, Grundfoss Management, Standards Liaison
 Jay Kohler, Johnson Controls, TAC Section Head
 Sheila Hayter, NREL, Handbook Liaison
 Michael Bilderbeck, Pickering Firm, TAC Chair
 James Bochat, Commissioning Concepts, ALI/PDC

MEETING MINUTES

1. CALL TO ORDER (S. Kujak, Chair)

- A. Chair, Steve Kujak, called the meeting to order at 4:16 PM and member and guests introduced themselves. The meeting was held in Long Beach at the Renaissance Pike 3 Conference Room.
- B. Establishment of a quorum, 9 out of 10 voting members were present.

Voting members for this meeting:

Stephen Kujak- present
Kevin Connor- present
Ganesan (Sonny) Sundaresan- present
Debra Kennoy- present
Barbara Minor- present
Marc Scancarello- present
Sean Cunningham- present
Bob Richard- present
Knut Petry- absent
Kenji Takizawa- present

2. AGENDA REVIEW

No revisions or corrections were noted on the agenda.

*Motion to approve Long Beach draft agenda was made by Sonny Sundaresan and seconded by Debra Kennoy
Motion passed: 9 / 0 / 0 / CV. (For / Against / Abstain / Total [Chair Voting [CV] or Chair Not Voting [CNV]])*

3. APPROVAL OF LAS VEGAS, JANUARY 2017 MEETING MINUTES

Corrections noted by the Secretary

- Cover sheet- Sonny Sundaresan term expiration, change from 2014 to 2017
- Under distribution, remove Mark Spatz.
- Section 7C- Program track title- correct to read Long Beach and Chicago
- Section 12- Next meeting- change date to 2017

*Motion to approve Las Vegas draft minutes was made by Mark Scancarello and seconded by Barb Minor with the changes noted above.
Motion passed: 9/ 0 / 0 / CV. (For / Against / Abstain / Total [Chair Voting [CV] or Chair Not Voting [CNV]])*

4 CHAIRMAN'S ANNOUNCEMENTS (S. Kujak, Chair)

- A. Section 3 Meeting Report attached.
The Chairs report is provided in Addendum 1.

B. Roster Review

Summary of TC 3.1 membership and changes, effective July 1st 2016

Position	Members
Chair , voting	Stephen Kujak
Standards Subcommittee Chair, voting	Debra Kennoy
Handbook Subcommittee Chair, voting	Kevin C Connor
Webmaster, voting	Sean Cunningham
Voting	Sonny Sundaresan

Voting	Barbara Minor
Voting	Marc Scancarello
Voting	Bob Richard
Member Non-Quorum, voting	Knut Petry
Member Non-Quorum, voting	Kenji Takizawa

Other committee officers (non-voting):

Warren Clough, Carrier, Secretary

Christopher Seeton, Shrieve Chemical, Vice-Chair and Program Subcommittee Chair

Kenneth Schultz, Ingersoll Rand, MTG-GWP Liaison and Research Subcommittee Chair

Research Liaison update by Steve Kujak

ASHRAE RAC- RTAR and WS are going back to a word document format. This should make it easier to fill out these forms.

Co-sponsor sessions now requires a recorded the vote by the TC.

TAC Section Head Jay Kohler

Check to make sure the roster is correct.

Participants are welcomed to join training sessions and webinars.

5. RESEARCH (Ken Shultz)

A. Report from Research Subcommittee Chairs Meeting

Ken Schultz's provided a summary of all TC 3.1 related research activity that follows below.

B. Status of current research projects

1507-RP "Binary Refrigerant Flame Boundary Concentrations"

Contractor: Safety Consulting Engineers

Status- An e-mail ballot to approve final report initiated. Compiled vote as 8-0-0-2. The final report was submitted to MORTS.

Action: None, submitted to MORTS for approval.

1717-RP "Improve Accuracy and Reproducibility of ASTM E-681 Flammability Test Method for Flammability Measurement of 2L Flammable Refrigerants"

Contractor: University of Maryland, with Peter Sunderland as the P.I.

PMS: consists of D Kennoy (lead), S Cunningham, S MacLeod, B Minor, R Richard, and X Wang.

Status- Draft final report submitted to PMS. The question now is what to do with the improvements identified in the report. Consensus was not to go directly go to ASTM. Establish a working group to review the data. Possibly conduct a round robin to look at reproducibility. Add Patrick Coughlan in place of Barb Minor. Patrick will lead the working group to review the report and determine next steps.

Action: PMS to make a recommendation to TC 3.1, followed by committee vote by letter ballot.

C. AHRI/ASHRAE/DOE Collaboration on Flammable Refrigerants

Three projects have been developed into work statements and are funded by ASHRAE.

1806-RP “Flammable Refrigerants Post-Ignition Simulation and Risk Assessment Update”

Contractor- Gexcon, PI is Scott Davis

PMS: PES K Schultz (chair), O Abdelaziz, B Minor, G Linteris, P Johnson, K Takizawa, X Wang

Status- Work on this project is progressing. PMS approved a cost change to this proposal to calibrate/verify the flashing liquid model in CFD code. \$797K + \$46.5K= \$843.5K

Action: Needs to go for BoD approval. Scheduled completion is 1/21/18.

1807-TRP “Guidelines for Flammable Refrigerant Handling, Transporting, Storing, and Equipment Servicing, Installation and Dismantling”

Contractor- Navigant Consulting

PMS: B Fricke (lead), R Cooper, S Kulankara, W Mooris, K Nawaz, X Wang.

Status- RAC approved the contractor in March. Work is progressing.

Action: PMS will monitor progress of the project. Scheduled completion is 8/31/17.

1808-TRP “Servicing and Installing Equipment using Flammable Refrigerants: Assessment of Filed-made Mechanical Joints”

Contractor- Creative Thermal Solutions

PMS: B Fricke (lead), X Wang, P Geoghegan, D Halel, M Scancarello, K Nawaz

Status- RAC has asked for a more detailed test matrix to ensure getting value for additional funds requested (\$120K total); PMS and PI working on this.

Action: Provide detailed test matrix to RAC. Scheduled completion is TBD.

D. Proposed Research Projects

1773-WS “Ignition Potential from Electrical Devices in Commercial and Residential Applications using 2L Refrigerants”

Contractor:

PMS: W Clough (Lead), M Scancarello, B Minor, E Smith, K Takizawa, R Richard.

Status: A decision by the TC was made to put this project on hold till the completion of a related AHRI project 8017 is complete. At that time the final report of that project will be reviewed to determine the need for any additional information this project could add.

Action: Continue to hold on this Work Statement until the AHRI 8017 is completed in August.

1791-WS “Humidity effects on burning velocity”

PMS: D Kennoy (lead), R Richard, J Majurin, T Leck, F. Flohr, X. Wang (AHRI)

Status: RAC returned the work statement with comments. Drafted comments were sent back to RAC. It was suggested to wait for burning velocity at elevated humidity results from Project 1806.

Action: Hold until data can be reviewed from 1806.

1792-WS “ASHRAE 34 Toxicity data documentation and mixture calculation”

PMS: S Sundaresan (lead), B Richard, J Majurin

Status: Work statement was submitted. Hold the project pending feedback from SSPC 34. Not really research, but a software tool. A new spreadsheet calculator was created.

Action: No action. A new ATEL/RCL calculator was generated by Ken Schultz.

1794-WS “The Incorporation of Odorants in Flammable Refrigerants to Improve Leak Detection and Safety”

PMS: M Scancarello (lead), V Baish, J Majurin, E Clark

Status: A revised RTAR was submitted to RAC, which was accepted with a few comments. A work statement was generated, submitted to committee for a vote, and then sent to MORTS. CPSC is interested in moving forward and is co-funding phase 1.

Action: Waiting for ASHRAE approval to move forward with this research.

1797-WS “Risk Assessment Investigations to Develop Alternative Acute Toxicity Classification Approaches to the A or B Chronic Toxicity Classification of Refrigerants used by ASHRAE 34.”

PMS: D Kennoy, G Rusch, G Jepson, C Seeton, S Kujak.

Status: RAC returned the work statement with comments. Revisions to the work statement are being worked on.

Action: Gary Jepson to re-write for review by the PMS.

1802-WS “Defining the 2/2L Flammability Boundary in Standard 34”

PMS: D Kennoy (lead), F Flohr, B Richard, S Kujak, G Linteris, S Spletzer, X Wang

Status: Draft work statement circulated to TC for review and comment.

Action: Deb Kennoy to pick up again and move this work statement forward.

E. Other Research

Effect of lubricant on the flammability of refrigerants
On hold- wait for on-going work to be completed.

Understanding of energy transfer from ignition sources to refrigerant gases
On hold- wait for on-going work to be completed.

Electrical properties of new refrigerants

An RTAR was drafted which was circulated to the committee for consideration at Long Beach. A test method already exists, but the test equipment no longer available. The voting members need to review the RTAR and provide feedback.

Re-evaluate Calibration of 200L to 12 L flammability limits for borderline cases

A skeleton RTAR was drafted. The committee needs to review the RTAR and provide comments.

Research Summit Review- where do we go from here with research needs? This needs to be brought up at the next flammability research subcommittee (FRS) meeting.

6. **HANDBOOK** (Kevin Connor)

The 2017 revisions are complete. The next revision will be for the 2021 edition. Will start meeting in Chicago for the next revisions.

Chapter 29 (Refrigerants), Steve Kujak will lead.

Chapter 30 (Thermophysical Properties of Refrigerants), M McLinden will lead.

Chapter 31 (Physical Properties of Secondary Coolants), K Connor will lead.

7. **PROGRAM** (Chris Seeton)

A. Current Program Session (Long Beach 2017)

Wednesday, 8:00 – 9:30, Seminar 50— High Efficiency Commercial Refrigeration Systems with Natural Refrigerants

Sponsor: 10.7 Commercial Food and Beverage Refrigeration Equipment, Refrigeration Committee, TC8:1 Positive Displacement Compressors; TC3.1 Refrigerants and Secondary Coolants

Chair: Georgi Kazachki, Ph.D., Member, Dayton Phoenix Group, Inc., Dayton, OH

1. Doing It All Efficiently with CO2 Refrigeration Anywhere in the World Klaas Visser, P.E., Affiliate, KAV Consultants Pty Ltd, Kangaroo Flat, Australia
2. Design and Performance Validation of Ultralow Charge Ammonia Cascade System for Retail Food Environment Masood Ali, Kysor/Warren, Columbus, GA
3. Opportunities for Utilizing Two-Phase Ejectors to Increase Efficiency of Commercial Refrigeration Systems Using Natural Refrigerants Stefan Elbel, Ph.D., Member, Creative Thermal Solutions and University of Illinois at Urbana-Champaign, Urbana, IL
4. Packaged Ammonia/CO2 Systems for Refrigeration Scott Mitchell, Associate Member, Southern California Edison, Irwindale, CA

There was a request from Steve Brown to co-sponsor a program in Las Vegas. TC 3.1 voted to co-sponsor but it was not published in the program. Program is called Low-GWP Alternative Refrigerants and Their Applications, Part 1 & 2.

A call for papers deadline for the Houston Annual Conference is August 18th. A title and abstract are needed by this date. The papers are due Dec 8th. Peer review is in early January. The Chicago Winter Conference deadline for Conference Papers is July 7th. Seminar, Forum, Debate, Panel, and Workshop proposals are due August 1st.

Steve Kujak was recognized on receiving the Crosby Field Award for a technical paper on the "Examination of the Reactions of R-40 with R-134a and POE Refrigeration System Materials."

If the committee would like to do another mini-track for Houston or later then we need to start thinking about it soon.

Electronic URL's will be allowed in the bibliography slides only. Top level domain URL's are not acceptable. The URL and the reference should be as specific as possible and relevant to the citation.

B. Future Program Plans

1. "How to design systems with refrigerants – "The perils and pitfalls of NOT using Guideline 6", Steve Kujak
2. Leak detection technologies and sensors; potential co-sponsor with TC 3.8
3. Seminar on R404A replacements (TC 10.7 is leading and submitting)
4. Results from AREP II testing (Alternative Refrigerant Evaluation Program, organized by AHRI—Air Conditioning, Heating, and Refrigerating Institute
5. Workshop on A/B toxicity classification. (Wait until proposed research project is started; give an update on progress and get feedback.)
6. F-gas update
7. Montreal Protocol-.....do we want chair in Chicago. Most likely Houston.

ACTION: Motion was made to sponsor a seminar "Regulations Governing the Impending Refrigerant Change, European F-gas, Kigali Agreement and CARB : Update and Experiences Learned."

Motion was made by S Sundaresan and seconded by D Kennoy.

Motion passed: 9/ 0/ 0/ [CV]. (For / Against / Abstain / Total [Chair Voting [CV] or Chair Not Voting [CNV]])

Chicago – AHR Expo Mini track (TC 3.1, 3.2, 3.3, 3.4, 3.8)

Seminar Titles

1. Next Generation of lower or low GWP next generation HVAC&R Equipment
2. Some Low GWP Next Generation Refrigerants will be Flammable. What does it mean to be Flammable?
3. Lubricants Changes for Low GWP Next Generation Equipment
4. Contaminant Control: What is the same and what is new?

Program tracks Chicago and Houston

January 2018—Chicago	June 2018—Houston
HVAC&R Systems and Equipment	HVAC&R Systems and Equipment
Fundamentals and Applications	Fundamentals and Applications
Standards, Guidelines and Codes	District Energy and Cogeneration Plants
Earth, Wind & Fire	Safeguarding your HVACR System
Transportation IAQ and Air Conditioning	Residential: Modern Buildings in Hot, Humid Climates
Tall Buildings	Professional Skills
Modeling Throughout the Building Life Cycle	Research Summit
Heat Exchange Equipment	HVACR Control Freaks
Refrigerant Mini Track @ Expo	HVACR Analytics
Residential Mini Track @ Expo	

8. STANDARDS (Debra Kennoy)

- A. ASHRAE Standard 34, *Designation and Safety Classification of Refrigerants* (D. Kennoy)
 - Many applications need to be reviewed
 - There are several continuous maintenance proposals to modify the standard
- B. ASHRAE Guideline 6
 - This was published in 2015. It is up for review again in 2018.
- C. ASHRAE Guideline 39p (formerly SPC-177P), *MOT Fractionation Measurement of Refrigerant Blends* (R. Richard)
 - This is not a required test, just a guideline.
 - The document went out for PPR. It came back with no comments.

9. WEB SITE (Sean Cunningham)

ASHRAE has migrated the TC websites to a new format, and TC 3.1 website is now in this new format. Our web page has the agenda for the current meeting, minutes from past meetings, slides from past presentations, and more. The new URL for the TC 3.1 web page is:

<https://tc0301.ashraetcs.org>

Minutes and research plan are on the website. Presentations can be added to the website as well.

10. OLD BUSINESS

None

11. NEW BUSINESS

There was discussion of how TC 3.1 might be able to get involved with ASHRAE standards development.

12. NEXT MEETING

2018 ASHRAE Winter Meeting; Chicago January 20-24th, 2018.
TC 3.1 will meet Monday, January 22nd, 2018.

13. MEETING ADJOURNED at 6:06pm.

Addendum 1

Announcements and Reminders for TC/TG/TRG & MTG Chairs LONG BEACH 2017

1. Let's Celebrate ASHRAE's Technical Excellence Historically!

ASHRAE is highly regarded for its technological advances. Consider that these advances evolved from the efforts of our predecessors and you, and the current members of ASHRAE's Technical Committees in advancing HVAC&R technology are building on a deep foundation. So, what is the historical foundation of your Technical Committee specialty? ASHRAE will be celebrating its 125th anniversary in a couple years. The Historical Committee has a project to publish articles in the ASHRAE Journal and organize paper presentations celebrating our technical heritage for the anniversary. We plan to emphasize technical advances after 1920. Can you help with an article or a paper or can your TC organize and sponsor a program session for the 2019-2020 meetings?

Here is a list of topics that TC members have already suggested.

- Development of open communication protocols such as BACNET.
- Modern improvements in psychrometrics (Goff & Gratch).
- History and effect of the Environmental movement on our technology. How technology and equipment has improved the indoor environment.
- The refrigerant revolution
- Solving the problems of "sick buildings."
- The re-discovery of past technology and its application today (such as district energy, hydrocarbon refrigerants, off peak energy storage, "total energy" systems, etc.)
- History of the application of electronics to HVAC&R technology.
- ASHRAE's long history in applying innovative technology.
- History and importance of frozen food technology.

All of these topics and others you may think of need to be written up and/or presented by someone.

How about YOU?

The 125th anniversary will be celebrated at the 2020 winter and Annual meetings. The Historical Committee has been charged with the responsibility of organizing Society and industry history projects for the 125th. If you would like to submit an article or a paper or organize a program session, contact Emily Sigman, Historical Committee Staff Liaison at esigman@ashrae.org.

There is a deadline – please submit abstracts or outlines before **September 30, 2017**.

2. Oversight of TC websites with regard to *Technical Bulletins (White Papers)* and alignment with Society positions, policy, or opinions

TCs are allowed to develop Technical Bulletins - A Technical Bulletin does not result from a technical meeting and is a brief 1-2 page statement on a special interest HVAC&R topic that has been developed by either a technical or grassroots committee of ASHRAE. After the TC approves the Technical Bulletin, TAC is responsible for coordinating a peer review by a minimum of three persons with expertise in the field of the bulletin before it can be posted. In addition, ASHRAE's policy for websites states the following: **"4 (3) f. Statements and presentations may not appear on web sites that state, purport, or imply that they present ASHRAE positions, policy, or opinions."**

3. Additional TC E-mail Position Aliases Now Available

New position e-mail alias addresses have now been created 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 16-17 E-mail Alias list with these new position aliases is posted on the ASHRAE website

4. New Restructured TC MOP (Manual of Procedures) issued

TAC has restructured the TC MOP so that it is easier to navigate and find information. The new TC MOP can be found on the ASHRAE website www.ashrae.org/TCs under the heading *Procedures, Forms & Information for TCs/TGs/MTGs and TRGs*.

5. Distribution of TC minutes changed in TC MOP

The TC MOP and *TC/TG/MTG/TRG Minutes Cover Sheet* form have both been updated and you are no longer required to send the TAC chair a copy of your minutes after each meeting. The new minutes cover sheet can be found on the ASHRAE website www.ashrae.org/TCs under the headings *Procedures, Forms & Information for TCs/TGs/MTGs and TRGs – Routine Forms for TC/TG/MTGs/TRGs*.

6. How to Import Your TC Roster Information into MS-Outlook

Detailed instructions on how to import your TC roster information into MS-Outlook has been created and an e-mail announcement will be issued to all TC chairs, vice chairs, and secretaries once these instructions and the restructured TC MOP are posted to the TC page of the website (www.ashrae.org/TCs)

7. Updated TAC Presentation Template Available for TC members to use with local Chapter

TAC recently updated the standard presentation and presentation notes that TC members can use, without a lot of effort, to explain what TCs do for the Society and how that work benefits members in your local ASHRAE Chapter. You should also know that use of this presentation at a chapter meeting in SY 17-18 will earn a chapter 50 (100 points maximum) PAOE points. Additional PAOE points are also possible in SY 17-18 for a presentation(s) on the work of one specific TC.

The new presentation and presentation notes files are posted now at the following link www.ashrae.org/tcs under the heading *General TC Information* at the top of the page in case you prefer to direct others to these files posted online. The presentation material is now also available in both English and Spanish.

8. Basecamp Information from ECC

More and more TCs and standing committees are making use of ASHRAE's subscription to Basecamp3 to better organize, store, and distribute online committee files that are needed for their meetings through a dedicated committee Basecamp site. If you would like to learn more about Basecamp and how to request a site for your particular committee, please go to the Electronic Communications Committee (ECC) web page:

(<https://www.ashrae.org/society-groups/committees/electronic-communications-committee>) and scroll down to the section titled *Guidance for Basecamp 3*

AT THIS MEETING

1. On-Site Training Options

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

Sunday June 25th, 9:45-10:45 AM in Room #101A, 1st Floor, in the Long Beach Convention Center. The training will start with a brief presentation on how to run Effective Meetings and then highlight some of the online resources that are available through the TAC training portal for additional training and information on a variety of topics. The training session will also have a Q&A session so that you can also get answers to your specific questions.

ii. RAC's Research Subcommittee Chair's Breakfast

Monday, June 26th, 6:30 AM – 9:30 AM in Regency room, 4th Floor, Hyatt Regency Hotel. 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 changes to the *Research Manual*.

iii. TC Program Subcommittee Chair Training in Long Beach

Tuesday, 6/27, 11:15 AM – Noon, Room #202C, 2nd Level, in the Long Beach Convention Center. *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. Location of Section Head Mailboxes & Free Wi-Fi Access at this Society meeting

Mailboxes are located just outside ASHRAE Headquarters Office (Seaview Ballroom B & C – Lower Level (1st floor) – Hyatt Regency 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.

Wireless internet will be available in all meeting rooms at the Hyatt, Renaissance, and Long Beach Convention Center. 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.

Hyatt & Renaissance Wi-Fi Access: **PSAV_High_Speed** is the network, **ashrae2017** is password (case sensitive).

Long Beach Convention Center Wi-Fi Access: **ashrae2017** is the network, **longbeach** is password (case sensitive).

3. RPM (Remote Participation Meetings) being held in Long Beach

The 12th RPM (Remote Participation Meeting) Capable Society Meeting, which allows some TC members to participate in the TC meeting from a remote location electronically, will occur in Long Beach and the following fifteen TCs have agreed to participate in this effort: TC 1.6, TC 1.10, TC 1.12, TC 2.1, TG2(HVAC), TC 5.8, TC 5.11, TC 6.9, TC 7.3, TC 7.9, TC 8.3, TC 9.2, TC 9.4, TC 10.3, and TC 10.6 – This represents a 25% increase over the number of TC's hosting RPM meetings in Las Vegas. A total of 43 RPM meetings will be hosted in Long Beach when you include project committee and other committee meetings. For comparison, a total of 38 RPM meetings were hosted in St. Louis last year at this time.

The chairs of those TCs participating should provide to their Section Head feedback on their RPM meeting experience before TAC meets on Wednesday morning, 6/28.

4. Name Badges

As offered in the past, members of TCs who are not registered for the Conference and plan to only attend TC meetings may receive a free, plain white name badge. The purpose of these badges is for TC members not registered for the Conference to be able to identify one another in meetings.

To receive your badge, please go to the ASHRAE Registration desk located in room 104 at the Long Beach Convention Center and look for the sign for "TC Badges." Please identify yourself as someone only attending committee meetings, not registered for the Conference, who would like a white name badge. An ASHRAE staff person will create a badge for you that includes your name, company name and city, state and country (if outside the U.S.). The badge will not have a QR code and will not allow you into the Technical Program.

However, if you'd like to register for the entire Conference you can do so in advance or onsite. We realize your time is limited, one-day registrations (\$270 for Members) are available as well as one-session registrations (\$70). If you wish to register for one day of the Technical Program you or one session, you can do so at the ASHRAE Registration desk. The One-Day option gives you access to the Virtual Conference which is viewable on-demand for 18 months. Questions? Contact meetings@ashrae.org.

5. Retiring TC/TG/TRG/MTG 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).

UPCOMING DEADLINES

1. TC Activity Forms for the Long Beach Meeting are due to Your Section Head before Wednesday, 6/28/17

TC/TG/TRG Activity Feedback Form (Excel) 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.

2. Thank You Letters to Employers

ASHRAE President – Tim Wentz– 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 2016-2017. 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.

3. Seminar and Forum proposals for Chicago are due by Tuesday, August 1st, 2017.

Please visit the following site to submit your proposal:

<https://ashraem.confex.com/ashraem/w18/cfp.cgi>

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

4. 2017-2018 Hightower Award & Service to ASHRAE Research Award Nominations by Friday, September 1st

Nominations for the 2017-2018 *George B. Hightower Technical Achievement Award* are due to you Section Head by September 1, 2017. 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>

Nominations for the 2017-2018 *Service to ASHRAE Research Award* for TC volunteer efforts in research are due to RAC research liaison by September 1, 2017. 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>

5. 2018 RPM (Remote Participation Meetings) Request for Chicago Meeting

ASHRAE has streamlined the process for requesting RPM meetings moving forward, which will allow us to confirm meeting information earlier in advance of the actual meeting dates.

The updated procedures are as follows:

- ALL committees that want to be considered for an RPM capable meeting in Chicago next January must turn in an *ASHRAE Meeting Room Request Form* for Chicago to the ASHRAE Meetings section.
- The request should include the reasons why you are requesting RPM meeting capability.
- RPM meeting requests for the upcoming Chicago Winter meeting should be submitted by **Monday, October 2nd or sooner.**
- Confirmation emails (verifying the requests) will be sent out in November 2017
- Requests received after the above date may not be accommodated due to high and growing demand for this service.

REMINDERS

- 1. 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>
- 2. Request for each TC to briefly review ASHRAE Code of Ethics at start of meeting** See the following link for the latest version of the ASHRAE Code of Ethics: <https://www.ashrae.org/about-ashrae/>
- 3. Make a Special Effort to welcome new Members, and Visitors to TC meeting**

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.

- 4. 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 MORTS@ashrae.netor

- 5. Is Your Committee Website up to Date?**

If not, please ask your webmaster to at least post the latest minutes and the Long Beach 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. The new TC website template has greatly simplified the duties of the TC webmaster and this form of communication is critical to the efficient operation of your committee, and for attracting new members.

The recent conversion to a new TC website platform highlighted a couple areas where a refresher of the ASHRAE rules on website maintenance is warranted. First be aware that ASHRAE Products (i.e., handbook chapters, journal articles, final reports from research projects, etc.) cannot be published on your TC's website. It is very appropriate to post the title and scope of the product and then link the reader to the ASHRAE bookstore or other location on the ASHRAE site

where the product may be purchased. Any possible exceptions to this rule must be sent through Steve Comstock for review and approval (scomstock@ashrae.org<https://www.ashrae.org/standards-research--technology/technical-committees/tc-training-and-presentations>). The second issue involves timely posting of the draft minutes. Draft minutes (and final, approved minutes from the prior meeting) should be posted to your website (or otherwise distributed to the members) within 60 days after the meeting. Please ensure that your secretary and webmaster are aware of this deadline. To assist your secretary in understanding the procedures for taking and reporting minutes, a video has been developed and posted on the Technical Committees' Training page ([.](#)). On the same page, a video has also been posted for use by webmasters to learn about the procedures and schedule to maintain the new websites.

6. TC 2017-2018 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.

RECENT ANNOUNCEMENT

1. RAC Prioritizing Research Topics Related to the Residential Sector

Continuing in 2017-2018, 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.

2. CEC's Standing Request for Future Society Meeting Program Track Suggestions

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 Atlanta 2019 winter 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 Long Beach meeting.

3. CEC Always Seeks 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.

4. The Professional Development Committee (PDC) is seeking ideas for new ASHRAE Learning Institute (ALI) courses.

The Professional Development Committee (PDC) is actively seeking ideas for new ASHRAE Learning Institute (ALI) courses. We need practical courses of broad interest to be presented as face-to-face seminars or short courses, instructor-led online courses and self-paced courses. Examples include courses with a focus on new technologies that need to be shared, fundamentals for engineers new to the discipline, standard applications that need explanation, and courses based on new design guides. Does your TC have a potential course idea?