Minutes

1. Call to order
   Meeting was called to order at 4:15 p.m.

2. ASHRAE Code of Ethics Commitment
   a. In this and all other ASHRAE meetings, we will act with honesty, fairness, courtesy, competence, integrity and respect for others, and we shall avoid all real or perceived conflicts of interests. (See full Code of Ethics: https://www.ashrae.org/about-ashrae/ashrae-code-of-ethics)

3. New People
   a. 5 first time attendees

4. Introductions

5. Determination of a Quorum
   a. Quorum was met. 12 of 12 voting members present.

6. Announcements and Highlights
   From TC Chairs Breakfast Meeting
   a. Due To ASHARE 125th Anniversary they are wanting/requesting abstracts on historical papers
   b. News portals online available to be helpful tools. Please check them out.
   c. If you would like to join a TC you will need to join online-Dane

7. Agenda additions
   a. Executive session to vote after adjournment

8. Liaison reports (as they arrive)
   a. MTG – Low GWP Refrigerants
      i. Research
         1. Three Current Projects
- **RP-1806**
  i. Contract awarded to Gexcon
  ii. Currently, approximately one year into project. Significantly behind what was expected.
  iii. The delay could turn out to be good, as findings in the original vapor only leakage scenario has been enhanced to include two phase leakage, standing pool fires, etc.

- **RP-1807**
  i. Purpose of project was to review available literature around the world on how to handle/store flammable refrigerants.
  ii. Australia stands out as a country that already has standards/regulations on transporting/handling end of life procedures for this type of refrigerants.
  iii. This allows us to identify where risk/gaps are and to focus our efforts on areas that need improvements/further work.
  iv. This is in final review by the PMS and should be available soon.

- **RP-1808**
  i. Contractor is CTS
  ii. Purpose is to look at mechanical joints available in industry to understand how dependable these joints are in the field, as well as over their lifecycle.
  iii. Expect to finish up 3rd quarter

2. Other organizations are doing parallel research in this area as well (CARB, AHRTI, DOE)

b. **MTG – ASEC**
   Baxter
   1. MTG has been disbanded

9. **Approval of minutes from Long Beach**
   Messmer
   a. Motion to approve Long Beach draft minutes, Ray Rite. Seconded by Sivakumar Gopalnarayanan.
   **PASSED unanimously 11-0-0-0 CNV (chair not voting)**

10. **Subcommittee reports**
   a. **Programs**
      Jeff Warther

   Jan 2018 TC 8.11
   Program Chair_HOUST

   i. Review of tracks for Houston. (9 total)
      1. HVAC&R Systems and Equipment
      2. Fundamentals and Applications
      3. District Energy and Cogeneration Plants
      4. HVAC & Resiliency: Safeguarding our World
      5. Residential – Modern Building in Hot and Humid Climates
      6. Professional Skills
      7. Research Summit
      8. HVAC&R Control Freaks
      9. HVAC&R Analytics
   ii. Discussion on potential seminar for Houston (Track 5)
      1. Title: “Sizing and Performance in Hot and Humid Climates”
         - Abstract Due Date: Feb 9th
         - Chair: Yunho Hwang
         - Potential Subjects/Presenters:
            i. Florida Solar and Energy
            ii. Building Science Corp.
            iii. AHRTI 9008
iv. NIST (Jon Winkler)
   v. RP-1445
   - TC4.1 Doing seminar that is quite similar
2. Title reworded to include Low GWP refrigerants.
3. Motion to sponsor seminar “Sizing and Performance in Hot and Humid Climates Including Low GWP Design” for Houston, Dutch Uselton.
   Seconded by Sivakumar Gopalnarayanan.
   **PASSED unanimously 11-0-0-0 CNV (chair not voting)**

iii. Discussion on potential seminar for Houston (Track 8)
1. Title: "We are up in your business…RTU retrofit successes"
   - Abstract Due Date: Feb 9th
   - Chair: Grant Wheeler
   - Jeff already has 3 presenters
2. Motion to sponsor seminar “We are up in your business…RTU retrofit control successes” for Houston, Dane. Seconded by Byron.
   **PASSED 10-1-0-0 CNV (chair not voting)**
   - Henry ‘Skip’ Ernst thinks it is going to be hard to get approved

iv. Atlanta Track Review
1. System and Equipment
2. Fundamentals and Applications
3. Refrigeration
5. Common System Options and Misapplications
6. Convergence of Controls, Indoor Air Quality, and Energy Efficiency
7. Building Integrated Renewables and Natural Systems
8. The Engineers Role in Architecture

**Bring Ideas to Houston**

v. TC 8.11 is Co-Sponsoring two programs in Chicago
1. Seminar 35
2. Debate 2

b. Research

   **Eric Berg**

i. Highlight from Research Chair Breakfast
1. RAC is adding another deadline to Review RTAR and WS: March 15th
2. Large backlog of projects were ready for bid. All were released.
3. Selected 6 finalists for the Innovative Research Grant (Total of 40 candidate submissions)
4. Reminder to have full votes for both the sponsoring and co-sponsoring TCs on all submission forms.
5. Need PMS member to be from all sponsoring TCs
6. WS form now requires milestones for the project which will be tied to payments.
7. It was stressed we must fill out the Dispersion of ASHRAE Sponsored Results form at the end of RPs. PMS Chair is responsible to submit this form.

ii. Current 8.11 RPs
1. RP-1645
   - Completed and expecting report very soon.
2. RP-1705
   - Phase one completed
   - Expected to be finished in October
   - Presentation on primary results given in sub-committee meeting in Chicago
3. RP-1721
   - Presentation on project status/update given in sub-committee meeting in Chicago
   - Having some difficulties getting parts and components
- Currently running a few months behind schedule
- Started collaboration with University of Kent in Belgium in hopes to help speed up the project.
- Expect to have some results by Houston

4. RP-1733
   - WS approved
   - 6 bids submitted
   - PMS is ready to make a recommendation to TC 8.11 (Executive Session)

5. RP-1743
   - Presentation on project status/update given in sub-committee meeting in Chicago
   - Currently finalizing test equipment and matrix
   - Request for Chad Kirkwood to join PMS
     Chair of 8.11 approved

6. RP-1785
   - Presentation on project status/update given in sub-committee meeting in Chicago
   - Multiple web meetings to finalize matrix and coils between Long Beach and Chicago
   - On the verge of getting the coils on order and building/fabricating the test setup.
   - It is believed they are just slightly behind schedule
   - Another web meeting planned in a month
   - Request to add member to PMS
     i. Chair of 8.11 approved

7. RP-1824
   - Currently RTAR approved
   - WS not moving along as quick as expected
   - Hope to work on this and go out for letter ballot
   - Next due date is March 15th.

   iii. Ideas
   1. Cyclic test result correlation based on unit design/configuration
      - No action at this point
   2. Room Stratification Impacts on Psychrometric Testing
      - Scott Karmer has WS ready to submit
      - May need a different form for this WS due to bypassing the RTAR stage.

   iv. Recommendation was made that TC8.11 should nominate a member/s for the Research Service Award.
   1. Discussed possible members to be considered
   2. Chair and Omar to work together to get member/s nominated

TC 8_11 Research Summary.xls

c. Handbook
   Ray Rite
   i. TC responsible for Chapter 1 in Applications
      1. Due date April 12th
      2. Still have a few more updates to do
      3. Ray has asked to do a letter ballot
      4. Highlights of the proposed changes
         - Chapter Name “Residences” to “Residential”
         - Reorganized content in the single family section
         - Added window Air Conditioners
         - Clean up on the controls sections
      5. Craig thinks we need to get input from people that have expertise in room air conditioners for next revision
ii. Letter ballot for approval of Chapter 1 in Applications went out February 5, 2018
Letter Ballot Results March 6, 2018
PASSED UNANIMOUSLY 11-0-0-0 CNV (chair not voting)

d. Standards
   Byron
   i. ASHRAE 16 has combined with ASHRAE 58
      1. Released in 2016
   ii. ASHARE 15.2
      1. New Standard being developed
      2. APR being published shortly
      3. Request was made for participation
   iii. SSPC 205
      1. Just went out for APR
      2. Meeting away from PPR
      3. Brief Summary of 205:
         - Defining what manufactures/OEMs should provide for equipment performance maps.
   iv. ASHRAE 37
      1. Currently going through a major revision
      2. Combining 37 and 116
      3. APR Expected: 2019
   v. ASHRAE 137
      1. Reaffirmed 2017
   vi. ASHRAE 206
      1. Reaffirmed 2017
   vii. SPC 213p
      1. New Standard defining Calculations for Psychrometric Properties of Air
      2. Most people reference Fundamentals handbook, but other standards cannot reference these calculations from Fundamentals as this handbook is not peer reviewed.
   viii. ASHRAE 41 series
      1. Multiple ASHARE 41s are in the revision state.
      2. ASHRAE 41.7 is currently out for reaffirmation in Chicago.
   ix. ISO
      1. Sub Committee 6
         - Current working groups meeting about twice a year.
         i. WG 1
            1. Just published a draft.
            2. Voting starts March 3rd.
         ii. WG 3
         iii. WG 10
         iv. WG 12
      2. ISO TS 16491
         - Task Group formed to revise this guideline to add a section to cover WSHP


e. Website
   Darin Nutter
   i. Updated

11. Membership/Roster
   Messmer
   a. Four VMs rolling off in June
      i. Ray Rite, Byron Horak, Kevin Mercer, Craig Messmer
   b. Chair’s Nominees (effective July 1st)
      i. Chair- Dane Christensen
      ii. Vice Chair- Chad Kirkwood
      iii. New VMs- Jeff Warther, Chris Stone, Chad Bowers
c. Ray Rite wanting to step down from Handbook Chair
   i. Recommendation for Ted Duffy to take over Handbook Chair

12. Old Business
   a. None

13. New Business
   a. TC 1.13 is asking TC8.11 for support on a New Track at June 2019 conference
      Title: “Optimization of HVAC&R”
   b. Motion TC 8.11 would support a New Track for June 2019 titled “Optimization of
      HVAC&R”, by Dane Christensen. Seconded by Bo Shen Man.
      PASSED 10-0-0-1 CNV (chair not voting)

14. Adjourn
   a. Motion to adjourn.
      i. Meeting was adjourned at 6:05 p.m.

15. Executive Session
   a. Motion for TC 8.11 approves the recommended bidder for RP-1733 by the PCS, Kevin
      Mercer. Seconded Byron Horak.
      1. PASSED 10-0-0-1 CNV (chair not voting)

VOTING MEMBERS FOR THIS MEETING (Need 7 for a Quorum)

<table>
<thead>
<tr>
<th>Dutch Uselton</th>
<th>Darin Nutter</th>
<th>Bo Shen Man</th>
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<tbody>
<tr>
<td>Kevin Mercer</td>
<td>Ray Rite</td>
<td>Kasey Worthington</td>
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<td>Kishan Padakannaya</td>
<td>Dane Christensen</td>
<td>Henry ‘Skip’ Ernst</td>
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<td>Craig Messmer</td>
<td>Byron Horak</td>
<td>Sivakumar Gopalnarayanan</td>
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ASHRAE’s Historical Committee

Announces Call for Papers for the Society’s 125th Anniversary

ASHRAE will celebrate the 125th anniversary of its founding during the 2019-2020 Society year.

As a part of the celebration, the Historical Committee has announced a call for papers on technologies and topics that occurred between the years 1920 – 2000. What do you consider are the milestone industry advances in heating, ventilating, refrigeration and air conditioning? How did they develop, who did it, how does it impact us now? HVAC&R engineering changed our lives! What did we engineers do? How did we do it? Your topic can be specific or broad, but let’s document the history. Accepted papers will be published in ASHRAE Transactions and presented at a Society Winter or Annual Conference during the celebration year.

Abstracts are due March 2018. Upon acceptance, papers are due September 2018. Papers can be a maximum of 30 double-spaced pages in length and undergo a double-blind review.

To submit an abstract, go to mc.manuscriptcentral.com/ashrae.

For more information, contact Jeff Haberl, 979-845-6507, jhaberl@tamu.edu.

Instructions to submit an ASHRAE 125th Anniversary paper:

1. Go to: https://mc.manuscriptcentral.com/ashrae
2. Enter the paper details:
   a. Title
   b. Short 100 words or less promotional abstract
   c. Select the publication subcategory of the Conference in which you prefer to present the manuscript: Atlanta 2019 or Kansas City 2019. The 2019 ASHRAE Winter and Annual Conferences take place as follows: Jan. 12 – 16 in Atlanta, GA and June 22 – 26 in Kansas City, MO > Save and Continue
   d. Select 3 keywords
3. Enter the author and co-author information: To check if an author already exists in the journal's database, enter the author's e-mail address and click "Find." If the author is found, their information will automatically populate for you. > Save and Continue
4. Cover letter: Use the space provided to indicate “ASHRAE 125th Anniversary Paper”
5. File Upload: Use the file upload module to submit your review abstract in Word format.
6. Review the details entered and submit

https://www.ashrae.org/membership--conferences/conferences/papers-and-programs
Conferences and Expositions Committee Information Items for Technical Committees
Winter Meeting, Chicago, 2018

1. Presentation Deadlines:
CEC has had an ongoing issue with presentations not being uploaded for commercialism review before the conference. This is problematic because it requires a “fire drill” for CEC on Saturday and Sunday to process commercial reviews for these presentations before they can be uploaded to the system. For clarification, presentation requirements include:
   a. Uploads need to be substantially complete; including the AIA Disclaimer and Learning Objectives. Blank slides and place holders do not constitute a substantially complete presentation.
   b. Recent Presentation Upload History
      i. For Chicago, 38 presentations had not been uploaded by the January 10th deadline.
         1. 24 presentations were still not uploaded as of 1/20/2017.
         2. 22 of those 24 were TC sponsored.
      ii. For Long Beach, 41 presentations were not uploaded by the final due date.
      iii. For Las Vegas, 48 presentations were not uploaded by the start of the conference.

CEC needs to hold speakers accountable for making deadlines. Starting with the 2017 Winter Meeting in Las Vegas, CEC started enforcing a 3 strike policy for speakers who do not upload their presentation by the published deadline. If a speaker receives 3 strikes they will not be able to present for the following year (two conferences).

2. Program statistics for Chicago; for a total of 106 available slots:

<table>
<thead>
<tr>
<th>Seminars</th>
<th>Workshops</th>
<th>Panels</th>
<th>Forums</th>
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<tbody>
<tr>
<td>115 submitted</td>
<td>10 submitted</td>
<td>11 submitted</td>
<td>16 submitted</td>
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<tr>
<td>67 presented</td>
<td>5 presented</td>
<td>1 presented</td>
<td>2 presented</td>
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<tr>
<th>Debates</th>
<th>Conference Papers</th>
<th>Technical Papers</th>
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<tbody>
<tr>
<td>10 submitted</td>
<td>132 abstracts submitted</td>
<td>21 submitted</td>
</tr>
<tr>
<td>3 presented</td>
<td>92 abstracts approved</td>
<td>18 presented</td>
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<tr>
<td></td>
<td>67 CP presented</td>
<td>6 Technical Paper Sessions</td>
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<td></td>
<td>17 Conference Paper Sessions</td>
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3. Potential Sources Bias Disclosure:
Since the 2016 Annual Meeting in St. Louis, speakers are required to fill out a potential sources bias disclosure document that will note affiliations/ involvement with any organizations with financial or commercial interest in the subject matter to be discussed, in accordance with the ASHRAE code of ethics. This IS REQUIRED to present at an ASHRAE Conference.

4. AIA/CES Presenter Quality Commitment:
All Presenters are REQUIRED to complete the following documents in order to have their presentation included in the conference program:
   - AIA/CES Presenter Quality Commitment Statement
   - Consent to Record
5. **Student Paper Recognition:**
Continuing the Student Paper Awards that were initiated at the 2017 annual meeting, we have selected the following. Certificates will be awarded to the following students at their assigned conference paper session. There will be (1) “Best Paper” and (2) Honorable Mentions for graduate candidates and PDH candidates (6 total papers awarded). 

**PhD Best:** Liquid Removal through Vibrations on a Flexible Film for Condensing/Dehumidification  
**Authors:** Ryan Huber, Giselle Guanes and Melanie Derby  
**Conference Paper Session 3 – Improvements in Heat Transfer Equipment - Sunday, January 21, 2018: 11:00 AM-12:30 PM**

**PhD Honorable:** A New Model for Frost Growth Incorporating Droplet Condensation and Crystal Growth Phases  
**Authors:** Ellyn Harges and Lorenzo Cremaschi  
**Conference Paper Session 3 - Improvements in Heat Transfer Equipment - Sunday, January 21, 2018: 11:00 AM-12:30 PM**

**BS/MS Best:** Resilient Design, Commissioning and Operation of the Canadian High Arctic Research Station  
**Authors:** Jean-Francois Pelletier, Michael D. Brown, Guillaume Castonguay and Cynthia Cruickshank  
**Conference Paper Session 1 – Operation and Design for Resilient and Responsive Buildings - Sunday, January 21, 2018: 9:45 AM-10:45 AM**

**BS/MS Honorable:** Dynamic HVAC Operations with Real-Time Vision-Based Occupant Recognition System  
**Authors:** Siliang Lu, Erica Cochran Hameen and Azizan Aziz  
**Conference Paper Session 5 – Designing Building Systems for Thermal Comfort - Monday, January 22, 2018: 8:00 AM - 9:30 AM**

6. **2018 ASHRAE Annual Conference in Houston, TX:** [www.ashrae.org/houston](http://www.ashrae.org/houston)  
   a. Seminar, Forum, Panel, Debate and Workshop proposals are due Friday, February 9, 2018 (as of Jan 19, 2018 we have received 155 submissions)  
   b. Web site opens for presentation uploads Monday, April 30, 2018  
   c. All presentations due online Friday, June 1, 2018  
   - **Track 1: HVAC&R Systems and Equipment:**  
     Track Chair: Frank Schambach  
     Email: frankschambach@mindspring.com  
   - **Track 2: Fundamentals and Applications:**  
     Track Chair: Dennis Alejandro  
     Email: denzjac@yahoo.com  
   - **Track 3: District Energy and Cogeneration Plants:**  
     Track Chair: Kimberly Pierson  
     Email: kdpwildcat@gmail.com  
   - **Track 4: Safeguarding your HVAC&R System:**  
     Track Chair: Rich Rose  
     Email: richr@mticontrols.com  
   - **Track 5: Residential – Modern buildings in Hot and Humid Climates:**  
     Track Chair: Dimitris Charalambopolous  
     Email: dimitris@ashrae.gr  
   - **Track 6: Commissioning– Optimizing New & Existing Buildings and their Operation:**  
     Track Chair: Kevin Marple  
     Email: kmarple@benzco.com
• **Track 7: Research Summit:**  
  Track Chair: Melanie Derby  
  Email: derbym@ksu.edu

• **Track 8: HVAC&R Control Freaks:**  
  Track Chair: Gary Debes  
  Email: gcdebes@verizon.net

• **Track 9: HVAC&R Analytics (Mini-Track)**  
  Track Chair: Vikrant Aute  
  Email: Vikrant@umd.edu

2. **2019 ASHRAE Winter Conference in Atlanta, GA:** [http://www.ashrae.org/atlanta](http://www.ashrae.org/atlanta)
   
a. Conference Paper Abstracts are due Monday, March 5, 2018
b. Seminar, Forum, Debate, Panel and Workshop submissions begin Monday, June 4, 2018
c. Conference Papers are due Friday, July 6, 2018
d. Seminar, Forum, Debate, Panel and Workshop proposals are due Friday, August 3, 2018
e. Program notifications go out Friday, September 7, 2018
f. Web site opens for presentation uploads on Friday, November 30, 2018
g. Presentation uploads due Monday, January 7, 2018

• **Track 1: Systems and Equipment**  
  Track Chair: Joe Firrantello  
  Email: j.firrantello@gmail.com

• **Track 2: Fundamentals and Applications**  
  Track Chair: Rick Hermans  
  Email: herma015@umn.edu

• **Track 3: Refrigeration**  
  Track Chair: Sonya Pouncy  
  Email: sonya.pouncy@gmail.com

• **Track 4: Construction, Operation, and Maintenance of High Performance Systems**  
  Track Chair: Leticia De Oliveira Neves  
  Email: leneves@gmail.com

• **Track 5: Common System Options and Misapplications**  
  Track Chair: Lee Riback  
  Email: lee.riback@gmail.com

• **Track 6: 207.2 (55+62.1+90.1): The Convergence of Comfort, Indoor Air Quality, and Energy Efficiency**  
  Track Chair: Ashish Rakheja  
  Email: ashish.rakheja@aeonconsultants.in

• **Track 7: Building Integrated Renewables and Natural Systems**  
  Track Chair: Maggie Moninski  
  Email: maggie.moninski@gmail.com

• **Track 8: The Engineer’s Role in Architecture**  
  Track Chair: Ashu Gupta  
  Email: ashu.energy@gmail.com

7. **TC Opportunities:**
   
a. TC members who want to submit a program should consult the Track Chair for assistance in preparing a good abstract, learning objectives, and Q&A to help assure complete submission.

b. TC’s and Sections are welcome to suggest new presentation formats (like how the Workshop was born). Best way to present material to benefit attendee is a goal.

c. TC’s and Sections are encouraged to work with a track chair to put together a series of sessions that can be used as a mini-track.

d. Putting together an entire track of programs in cooperation with other TC’s is also encouraged; keeping in mind that track subjects are typically determined 14-15 months prior to a conference.
e. CEC welcomes suggestions for tracks! We value your input. TAC/CEC agreed that the Comment Section on the activity form is the location for the TC to provide this information.

8. Speaker Ratings:
About 12 speakers from Long Beach had speaker ratings below 3.5 out of 5.0. These speakers were sent letters indicating that if they receive two additional low ratings they will be required to provide proof that they have received speaker training before they will be permitted to speak again.

9. CEC Announces a Call for Reviewers and Paper Session Chairs:
ASHRAE has a number of conferences coming up that include papers, and CEC seeks your help in reviewing them. Additionally opportunities to chair a paper session are available. Specifically, there is an immediate need for reviewers and session chairs for the 2018 Annual Conference and various specialty conferences.

Please submit your interest in reviewing a paper or chairing a paper session using the online form: http://web.ashrae.org/cec_request/. Please contact Tiffany Cox, ASHRAE Assistant Manager, Conference Programs, at tcox@ashrae.org for more information.

10. ASHRAE 125th Anniversary Call for Papers
The Historical Committee has announced a call for papers on technologies and topics that occurred between the years 1920 – 2000. Accepted papers will be published in ASHRAE Transactions and presented at a Society Winter or Annual Conference during the celebration year. Abstracts are due March 2018. Upon acceptance, papers are due September 2018. To submit an abstract, go to mc.manuscriptcentral.com/ashrae. For more information, contact Jeff Haberl, 979-845-6507, jhaberl@tamu.edu.

11. Specialty Conferences
ASHRAE’s topical conferences are focused on a particular aspect of the industry and bring together professionals for networking and professional development. Two specialty conferences are available for the remainder of 2018.

<table>
<thead>
<tr>
<th>Date</th>
<th>Conference</th>
<th>Location</th>
<th>Website</th>
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12. CLIMA 2019
The CLIMA 2019 Congress has announced a call for papers and a call for reviewers. The congress takes place May 26-29, 2019 in Bucharest, Romania. Papers are requested in the areas of advanced HVAC&R technology and IEQ; high performance buildings; information and communication technologies for intelligent building management; and sustainable urbanization
and energy system integration. Abstracts are due Sept. 30, 2018. Upon acceptance, papers are due Nov. 30, 2018. Reviewers with a background in these topics are requested. To submit an abstract, sign-up to be a reviewer or for more information, visit http://www.clima2019.org.

13. Program Types:

**Technical Paper Session:** TC sponsored/organized paper sessions are encouraged and may be submitted at: [http://web.ashrae.org/cec_request/](http://web.ashrae.org/cec_request/). Final approval is contingent upon successful peer review of the individual paper. These sessions present papers on current applications or procedures, as well as papers resulting from research on fundamental concepts and basic theory. Papers presented in these session have successfully completed a rigorous peer review. Forms for written comment are available at each session, and sent to respective authors for reply and publication in ASHRAE transactions, if received by a certain date.

**Conference Paper Session:** TC sponsored/organized paper sessions are encouraged and may be submitted at: [http://web.ashrae.org/cec_request/](http://web.ashrae.org/cec_request/) Final approval is contingent upon successful peer review of the individual paper. These sessions present papers on current applications or procedures, as well as papers reporting on research in process. These papers differ from technical papers in that they are shorter are length and undergo a much less stringent peer review.

**Seminar:** These sessions feature presentations on subjects of current interest. There are not papers attached to seminars.

**Workshop:** These sessions enable technical committees and other ASHRAE committees to provide a series of short presentations on a topic requiring specific expertise. These short presentations are provided with an increased emphasis on audience participation and training in a specific set of skills. There are not papers attached to workshops.

**Forum:** The sessions are “off-the-record” discussed held to promote a free exchange of ideas. Reporting of forums in limited to allow individuals to speak confidentially without concern of criticism. There are not papers attached to forums.

**Panel Discussion:** Panel discussions can feature a broad range of subjects and explore different perspectives on industry related topics. This session format includes a panel of 3-4 speakers each addressing a facet of the session topic, followed by an interactive discussion lead by the session chair. Panel Discussions may be 60 minutes or 90 minutes in length and will be posted online in the Virtual Conference.

**Debate:** Debates highlight hot-button issues commonly faced by our membership. Industry experts, either on teams or as individuals, argue opposing sides of an issue, concluding with position summaries and audience feedback. Debate sessions may be 60 minutes or 90 minutes in length and will be posted online in the Virtual Conference.
2018 ASHRAE Annual Conference

Houston TX | June 23 – 27, 2018

- Thursday, January 11, 2018: Website Opens for Seminar, Workshop, Forum, Debate and Panel Proposals
- Friday, February 9, 2018: Program (Seminar, Forum, Workshop, Debate and Panel) Proposals Due
- Friday, February 9, 2018: Revised Conference Papers/Final Technical Papers Due
- Monday, February 19, 2018: Conference and Technical Paper Final Accept/Reject Notifications
- Tuesday, March 1, 2018: Registration Opens
- Monday, April 30, 2018: Upload of PPTs Begin
- Friday, June 1, 2018: All PPTs Due Online
- Wednesday, June 20, 2018: Final Day for Commercialism Revision Upload prior to on-site

Houston Conference Tracks include:

- HVAC&R Systems and Equipment
- Fundamentals and Applications
- District Energy and Cogeneration Plants
- HVAC & Resiliency: Safeguarding our World
- Residential – Modern Building in Hot and Humid Climates
- Professional Skills
- Research Summit
- HVAC&R Control Freaks
- HVAC&R Analytics

Track 1: HVAC&R Systems and Equipment
- Track Chair: Frank Schambach
  Email: frankschambach@mindspring.com
  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: Dennis Alejandro
  Email: denzjac@yahoo.com
  Fundamentals are the foundation for understanding applications in engineering. Key components of ASHRAE fundamentals include thermodynamics, psychrometrics, fluid and mass flow. 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: District Energy and Cogeneration Plants
- **Track Chair:** Kimberly Pierson
  - **Email:** kdpwildcat@gmail.com
- As our world resources become more and more sparse there is an industry-wide movement toward efficiency and sustainability. One of the ways in which we can look to minimize our carbon footprint is to combine our resources. District energy systems and cogeneration plants do just that and are quite popular in some locales but have yet to gain traction in other developed cities. We will look at the advantages and limitations, do's and don'ts and best practices of utilizing this type of shared system.

Track 4: Safeguarding your HVAC&R System
- **Track Chair:** Rich Rose
  - **Email:** richro@mticontrols.com
- From seismic events to power outages and human error, how secure is your HVAC&R System? Mechanical, plumbing, electrical, and control systems all work together to create our living buildings, so it is imperative that designers and operators take into account the reactivity and interaction of these systems in response to natural disasters, human interference and other catastrophic events. Topics in this track include considering your design layout and accessibility, backup systems, supports and bracing, and more.

Track 5: Residential - Modern Buildings in Hot and Humid Climates
- **Track Chair:** Dimitris Charalambopoulos
  - **Email:** dimitris@ashrae.gr
- Residential dwellings require designers to consider a different scope of building functions, occupant use, and comfort. With increasing utility rates and a movement toward net zero housing, the traditional residential design models are continuously diversifying and evolving. This track will discuss how we can integrate modern residential design and building practices into hot and/or humid climates with specific challenges ranging from indoor comfort to ventilation and mold.

Track 6: Professional Skills
- **Track Chair:** Kevin Marple
  - **Email:** kmarple@benzco.com
- This track is designed to provide professionals an opportunity to develop in the areas of presentation skills, leadership, teambuilding, understanding various business operations, interpersonal skills, etc. In short, the Professional Skills Track can cover all aspects of business outside of engineering/technical applications and lends itself to interactive session types such as workshops and forums.

Track 7: Research Summit
- **Track Chair:** Melanie Derby
  - **Email:** derbym@ksu.edu
- Active research, and the exchange of those research findings are critical to the development of our HVAC&R industry and environment. The sixth annual research summit invites researchers to share those results; and this year we announce an exciting collaboration with ASHRAE's archival research publication, *Science and Technology for the Built Environment* (STBE). Researchers are invited to present papers, seminars, forums or participate in panel
discussions. Authors may also pursue an opportunity to further develop their submissions for later publication in STBE

**Track 8: HVAC&R Control Freaks**
- **Track Chair:** Gary C. Debes  
  **Email:** gcdebes@verizon.net  
- This track will focus on all things controls (note: please see track 9 "MiniTrack" as well). We invite you to join this exchange addressing one of the most dynamic areas in HVAC&R. Topics may range from design innovations spreading through our industry to the latest in building integration and observation, or even troubleshooting the most common issues occurring in building management systems.

**Track 9: HVAC&R Analytics**
- **Track Chair:** Vikrant Aute  
  **Email:** vikrant@umd.edu  
- This track will focus on the application of analytics algorithms/tools to automate systems. The tools and data are readily available, but the challenge is in using them in a timely and effective manner to add value to our HVAC&R Systems. By discussing the basics of analytics, methods, case studies and lessons learned we can consider if machine learning is ready to replace conventional controls.
A Research Study to Determine and Compare New Accelerated Corrosion Tests for Microchannel and Standard Heat Exchangers

Submitted a final report in September.

Update from Chad Bowers. Finishing literature survey and gather field samples. There is a plan to update to more research. Developing an accelerated test that a manufacturer could conduct. Calculating testing samples from different geographies. Finding residues will allow the main effect on a single stage system. Will also test different cleaning methods. Asked for PMS/Liaison. Over 10 volunteers. Collected samples from around the world. Will collect samples at January Long Beach. Two papers are in preparation. Preliminary data shows serious differences in the 1980s from some conditions that were in the field. The testing had little performance impact. 

Project awarded to University of Nebraska. Hugh Henderson chair of PMSEC. Project just got started. PMS will have first meeting in Orlando. Have some field units that will be tested in the lab.

Oil Return and Retention in Psychrometric Air Sampler and Mixer Apparatus for Use in ASHRAE Test Standards

Co-sponsors should vote to resubmit after revisions. Need to resubmit TC that the results of the vote are important for getting STARDocs approved. 10/11/17 – Resubmitted to RAC. Conditionally accepted.

PES has reviewed bids and has a recommendation. Letter ballot was sent out and approved the PES recommendation.

PES has reviewed bids and has a recommendation. TC needs to vote at full meeting. 1/30/17 - Voted to submit to RAC with some minor corrections. 10-0-0-CNV

PES has reviewed bids and has a recommendation.

PMS has been having regular meetings with the PI. Literature review and lab visits are complete. PMS has approved test setup design and construction of the test setup is underway.

TC has a little behind on setting up lab for testing for a 1 year extension. University of Nebraska.

Schedule to finish on time this fall with a paper due at the end of the year. 6/26/16 - Received three bids for this project. PES is reviewing. 9/6/17 - Chad updated the document to respond to RAC’s comments and sent to Curtis & for review. Curtis approved the changes and the updated document was sent to RAC for TC 10/17.

Schedule to finish on time this fall. 6/26/16 - Resubmitted to RAC. Conditionally accepted.

Schedule to finish on time this fall. 6/26/16 - Resubmitted to RAC. Conditionally accepted.

Project awarded to OSU, Bach. First meeting will be Long Beach. Bach has not had a vote on this yet. Will schedule a web meeting for early August.

Project awarded to OSU, Bach. Bach did not have an update at this meeting. Will schedule a web meeting for early August.

Project awarded to OSU, Bach. Bach did not have an update at this meeting. Will schedule a web meeting for early August.

PES has been having regular meetings with the PI. Literature review and lab visits are complete. Need to have either Scott or Eric drop in since they work for the same company.
ASHRAE Standard
ANSI/ASHRAE 16-2016
Standard 16-2016 -- Method of Testing for Rating Room Air Conditioners and Packaged Terminal Air Conditioners (ANSI Approved)

Standards 16 and 58 been combined into one standard with the number designation being 16. Standards Project Committee (SPC) 16, MOT for Rating Room Air Conditioners and Packaged Terminal Air Conditioners/Heat Pumps. Standard has been updated and released in 2016

ASHRAE 58-1986 (R2009)

See discussion provided above under ASHRAE 16-2016. Standard has been combined into ASHRAE 16

We may be asked to withdraw this at some time in the future.

ASHRAE STANDARD 15.2
Safety Standard for Residential Refrigeration Systems
New standard being developed systems 5 Ton or less. Single system serving single dwelling. 6 Web and 6 face to face.

SSPC 15 SC 15.2 8am – 12pm Tuesday June 27, 2017. Monthly meetings are scheduled. Final Standard planned for 2018.

Commented [SC1]: Need update
ADD:
SPC 205 Standard Representation of Performance Simulation Data for HVAC&R and Other Facility Equipment
First Public review did go out in 2017 and the committee is in process of reviewing the comments received.
Standards Subcommittee Report  
ASHRAE TC 8.11  
Unitary and Room Air Conditioners & Heat Pumps  
January 22, 2017 – Chicago

Electrically Driven Unitary Air-Conditioning and Heat Pump Equipment 
(ANSI Approved)

ASHRAE 37 has been opened up for revision. Next meeting will be held Wednesday Jan 24, 
2018 Chicago 8:00am – 12:00pm.

Review of prior meeting minutes, Revision of the TPS, Work Plan, and Status of 
RTAR's for required research projects were discussed during that meeting. 
Combining 37 and 116 into a common document.

TPS and Work plan have been submitted and approved. Note that SPC 116 has 
been disbanded and SPC 37 will continue development.

SPC Chairs: Chris Stone, Chad Kirkwood  
SPC Liaison: Erick Phelps

ASHRAE Standard 116-2010 -- Methods of Testing for Rating Seasonal 
Efficiency of Unitary Air Conditioners and Heat Pumps

Standard 116 was last released in 2010.

SPC 116 disbanded as the SPC 37 will combine 116 into the new revision of that 
standard.
Standards Subcommittee Report  
ASHRAE TC 8.11  
Unitary and Room Air Conditioners & Heat Pumps  
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Lead TC: 6.6 (Service Water Heating)  
Co-cognizant TC: 8.11

Reaffirmed in 2017


ASHRAE Standard 206 was published June 2013. Addenda a, b, c released in 2014. Voted to reaffirm at the Orlando Meeting January 2016. Reaffirmed in 2017

SPC 213P. Method for Calculating Moist Air Thermodynamic Properties

PURPOSE:
The purpose of this standard is to establish a standardized method of calculating thermodynamic properties of moist air for use in analyzing heating, ventilating, air-conditioning, and refrigerating applications. Sponsoring TC is TC1.1 Chair Vikrant will take over for James Schaefer.  
Meeting in Long Beach 8am-12pm Tuesday June 27, 2017:
SSPC 41 – Standard Methods for Measurement

Many of the SPC’s under this section are of interest to TC8.11 as there are referenced and used within the standards maintained by this TC. Input to these SPC’s are encouraged so the methods of test can refer to them as required. Additional requests and guidance will be supplied to these SPC’s specifically SPC 41.1, SPC 41.2 and SPC 41.6 as revisions to ASHRAE are addressed.

- 41.1-2013 Temperature, Jan 23, 2018 Tue Meeting 10am-12pm
- 41.2-2018 Airflow, Final approval end of 2017. To be published 2018
- 41.3-2014 Pressure, Jan 21, 2018 Sun Meeting 10am-12pm
- 41.4-2015 Lubricant Jan 22 2018 Mon Meeting 4:15pm -6:15pm
- 41.6-2014 Humidity Jan 22, 2018 Mon Meeting 10am – 12pm
- 41.7-2015 Gas Flow Vote to reaffirm Jan 2018
- 41.8-2016 Liquid Flow Published in 2016 (No Meeting)
- 41.9-2011 Refrigerant MF Calorimeters PPR draft approved Jan 20, 2018
- 41.10-2013 Refrigerant MF Flowmeters. Jan 23, 2018 Tuesday Meeting 8am-10am
- 41.11-2014 Power, Jan 22, 2018 Monday Meeting 2:15pm – 4:15pm
- 41.12 was disbanded. Intend to reference ASME PTC 19.1. Ad Hoc Uncertainty Examples Subcommittee created June 2016 meet 3pm – 4pm after SSPC41
ISO Technical Committee 86 (Refrigeration and Air Conditioning) 
Subcommittee 6 (Air Conditioners and Heat Pumps)

- Secretariat: ANSI
- Secretary: Maryline Lamborn
- Chairperson: Paul Lindahl

Working Group Designations – Active 
TC 86/SC 6/WG 1 Air-source air-conditioners and heat pumps
TC 86/SC 6/WG 3 Water and brine source heat pumps and air
TC 86/SC 6/WG 10 Energy recovery ventilators
TC 86/SC 6/WG 12 Heat Pump Water Heaters

Current Activity:
Working Group 1 of ISO TC 86/SC6 is currently working on updating ISO Standards 5151, 13253, and 15042.

WG activity to revise ISO 5151, 13253 and 15042 have been approved. First task of the WG will be to make all necessary corrections and alignment of symbols. Reviewing comments from public review at last meeting.


WG 3, WG 10, WG 12 will be meeting in March in South Korea
ISO has published the three Annual Performance Factor (APF) standards. April, 2013.

Default Bin distribution were not typical of USA and Europe and currently do not characterize typical operation over the entire range of use. Existing distribution is mainly applicable to south Asian climates.

ISO 16358-1
Air-cooled air conditioners and air-to-air heat pumps — Testing and calculating methods for seasonal performance factors
Part 1: Cooling seasonal performance factor

ISO 16358-2
Air-cooled air conditioners and air-to-air heat pumps — Testing and calculating methods for seasonal performance factors
Part 2: Heating seasonal performance factor

ISO 16358-3
Air-cooled air conditioners and air-to-air heat pumps — Testing and calculating methods for seasonal performance factors
Part 3: Annual performance factor
Standards Subcommittee Report
ASHRAE TC 8.11
Unitary and Room Air Conditioners & Heat Pumps
January 22, 2017 – Chicago

ISO/TS:2012 16491 - Guidelines for the evaluation of uncertainty of measurement in air conditioner and heat pump cooling and heating capacity tests

ISO/SC6 WG3 has formed a task group to revise 16491 and add a section to cover water source equipment testing.

Current Activity:
ISO 5151:2010, Non-ducted air conditioners and heat pumps — testing and rating for performance. Updated Standard was released in June 2010 as a revision to 1994 version.


This standard has been co-adopted by ASHRAE and AHRI and carries ANSI designation. The standard is referenced in ASHRAE Standard 90.1, is used in the AHRI certification program, and is available for purchase from ASHRAE. The 1998 standard was reaffirmed by ISO in early 2005.


New Draft Standard ISO 20733 for Seasonal Efficiency of Water Source Heat Pumps WG3 Activity

Working Group Meetings for TC 86 SC 6 were held in July 2015 at the AHRI office in Arlington, VA. Meetings for WG1, WG3, and WG10 occurred during the same week.

WG3 meeting was held in Plano, Texas February 2016

Meetings were held for SC6 and the Working Groups May 18-25, 2016, in Atlanta

October 24th 2016 WG3, WG10, WG12 will meet at AHRI office, Arlington, VA

March 20, WG3 meeting in Lyon, France
May 9th and 10th WG1 meeting in Brugge, Belgium

Report Submitted By: Christopher Stone