



## **MINUTES**

**DRAFT**

### **TECHNICAL COMMITTEE 9.2**

2018 Winter Meeting

**January 23, 2018**

Note: These draft minutes have not been approved and not the official, approved record until approved by the Technical Committee.



1791 Tullie Circle, N.E./Atlanta, GA 30329

404-636-8400

**DRAFT**

## 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. TC9.2 DATE February 28, 2018

TC/TG/MTG/TRG TITLE Industrial Air Conditioning and Ventilation

DATE OF MEETING January 23, 2018 LOCATION Chicago, IL

MEMBERS PRESENT	YEAR APPTD	MEMBERS ABSENT	YEAR APPTD	EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE
Eileen Jensen	2015	Kevin Marple	2016	Ken Mead
Erich Binder	2017	Michael Connor	2016	Scott MacMurray
Bill Lampkin	2017	Mike Baucom	2017	Ravi Ganta
Deep Ghosh	2015	John McKernan	2017	Dylan Nev
Vin Gupta	2015	Paula Hernandez, MNQ	2015	Joel Foster
Norm Maxwell	2014	Vladimir Fedkiw, MNQ	2014	Kay Clark
Douglass Abramson	2016			Harvey Schowe
				Erik Ostberg
				Tae Kwon
				April Ricketts
				Mark Baines
				Mike Vaughan
				Tony Arens (remote)
				Ken Goodman (remote)
				Bill Kumpf (remote)
				David Carroll (remote)

### **DISTRIBUTION: All Members of TC/TG/MTG/TRG plus the following:**

TAC Section Head: Krishnan Gowri

SH9@ashrae.net

ALI/PDC: Norm Maxwell CTTC Liaison: Michael Heinrich Research Liaison: Jeff Gatlin Standard Liaison: Niels Bidstrup	<a href="mailto:Normm1@verizon.net">Normm1@verizon.net</a> <a href="mailto:Michael.heinrich@westplainsengineering.com">Michael.heinrich@westplainsengineering.com</a> <a href="mailto:Jeff.gatlin.pe@gmail.com">Jeff.gatlin.pe@gmail.com</a> <a href="mailto:nbidstrup@grundfos.com">nbidstrup@grundfos.com</a>
Mike Vaughn, Manager Of Research & Technical Services	MORTS@ashrae.net

Note: These draft minutes have not been approved and not the official, approved record until approved by the TC.



## **ASHRAE TC 9.2**

### **Industrial Air Conditioning**

### **Winter Meeting Agenda**

### **Chicago Illinois**

**Room: Salon 1- 3rd Floor, Palmer House Hilton**

**Tuesday 1/23/2018**

**1:00 - 3:30 P.M. Eileen Jensen chaired the meeting**

#### **1. Call to Order and Opening Remarks - Jensen**

ASHRAE Code of Ethics reviewed and is on Web site

<https://www.ashrae.org/about-ashrae/ashrae-code-of-ethics>

#### **2. Self-Introduction of Members and Guests– All**

See sign in sheet for attendees.

#### **3. Quorum Status** Determination of Meeting Quorum - Jensen/Binder

Yes we have quorum:

4 –Remote Non-voting Members (Conference Call)

3 - Guests

9 - Non-Voting members (Present in Chicago)

7 -Voting members present at the meeting

#### **4. Approval of Minutes from Long Beach Minutes -Binder/Maxwell**

No Amendments or Corrections to the Minutes

**MOTION: Moved by Norm Maxwell and seconded by Doug Abramson to accept the minutes as presented.**

**Motion Passed - Unanimous**

#### **5. Chair Report Section Chair Meeting Update - Jensen**

- See attached report for details

- High lights are:

- 2017-2018 George B. Hightower Award Recipient – Art Hallstrom – TC 1.6
- 2017-2018 Service to ASHRAE Research Award Recipient – Brian Silveti – TC 6.9
- Deep Ghosh was recipient of ASHRAE Fellow at the Plenary session.
  - o Historical committee looking for write-ups for 125th anniversary, due 2/28/18

- Seminar and Forum proposals for Houston are due by Friday, February 9, 2018
  - o RAC Prioritizing Research Topics Related to Residential Sector

#### **6. Membership Report Voting Member Status, Roster Update & New Members:**

- Rolling Off as Voting members are Eileen Jensen, Norm Maxwell, & Doug Abramson  
Rolling On as voting members are Duncan Phyfe, Ravi Ganta & Joel Foster
- New Provisional Corresponding Members
  - o Nathan Frymire
  - o Stephen Wren
- Eileen will update the voting member status

#### **7. Nuclear Subcommittee (Meeting Monday 2:15 - 4:15) - Scott MacMurray**

- Scott MacMurray will provide a written report
- The Rewrite of Nuclear handbook chapter is being drafted for the next applications 2019

#### **8. Chapter Technology Transfer Committee (CTTC) Liaison: Michael Heinrich**

- No one from CTTC was in attendance and no Report

#### **9. Handbook Subcommittee Report (Meeting Sunday 5:00 - 7:00)**

Report on Status of Chapters for Future Handbooks - Jensen

- Chapters for Applications industrial Chapters
- Chapter 31 & 32 are ready for review
- Chapter 14 due date is April 1,2018
- Engine Test Facilities due date is March 1,2018
- Printing plants has very few updates and due date is May 1,2018
- 3D printers due date is TBA
- Textiles is being updated by Andy Cocohran due date is May 1,2018
- Wood & Paper chapter has minor changes and should be ready for review
- Power Plants Erich Binder has few updates due April 1,2018
- Nuclear Plants are due May 1, 2018
  - o Mine AC and Ventilation due date is April 1, 2018
  - o Industrial Drying is ready for review

#### **10. Research - Ken Mead**

- RTAR are being accepted 4 x/year
- Electrical Design Building Guide Heat & Cool Calcs has been completed in 2010 but the Design Guide was never published; Erich Binder to check with Steve Comstock.

#### **11. Program Report: Future Programs and Program Plan – Vin Gupta**

- See attached report.
- March 1 – Registration opens for 2018 ASHRAE Annual Conference, June 23-27, Houston, Texas <https://www.ashrae.org/houston>
- Mar 5 – conference paper abstracts, technical papers, and paper session requests due for the 2019 ASHRAE Winter Conference, January 12-16, Atlanta, Georgia <https://www.ashrae.org/conferences/winter-conference>
- Mid-March – seminar, forum, workshop, panel and debate notifications sent out for 2018 ASHRAE Annual Conference, June 23-27, Houston, Texas <https://www.ashrae.org/houston>
- 2018 ASHRAE Annual Conference presentation uploads: April 30 – June 1 <https://www.ashrae.org/houston>

#### **12. Update on all Standards – Deep Ghosh**

- STD 128 - Testing of portable AC units is in for publication pending final approval
- IEEE Guideline 21- TC 9.2 is awaiting responses to comments, the plan is to publish mid 2018
- New standards being developed are:
  - Resiliency & security in Industrial HVAC support
  - MTG OBB Occupant Behaviors in Buildings

#### **13. Hazardous Spaces**

- Hazardous Spaces Guide is still being written by Mike Baucom
- Progressing well.
- Chapter 1-8 are almost ready for review

#### **14. STD 62.1 Liason**

- Duncan Phyfe is liaison- no report
- 

#### **15. STD 90.1 Liason**

- Liaison-position is open -no report

#### **16. TG 2 HVAC Liason**

- Doug Abramson is liaison - nothing to report.

#### **17. Webmaster**

- Mike Baucom is webmaster no report. Ken Goodman reported a broken link to the website.

#### **18. Journal/Insights Liason**

- Norm Maxwell is liaison nothing to report.

**19.ASHARE Learning Institute (ALI)**

- Norm Maxwell is liaison nothing to report.

**20 Old Business:**

- All old business was covered in earlier reports.

**21. New Business Confirmation of New Chair -**

**Slate of Officers for 2018-19: Chair - Kevin Marple, Vice-Chair - Erich Binder, Secretary - Duncan Phyfe; Handbook SubCom Chair - Ken Goodman, Program SubCom Chair - Joel Foster, Research SubCom Chair - Norm Maxwell, Standards SubCom Chair - Deep Ghosh, Nuclear SubCom Chair - Scott MacMurray. Vin Gupta moved to recommend the slate of officers, Deep Ghosh seconded. Vote was unanimous.**

**22.Adjourn Announcement of Next Meeting**

- Next meeting Houston, Texas Summer meeting **June 26<sup>th</sup>, 2018**

**Motion to Adjourn Norm Maxwell moved. 3:10 pm**

**Respectfully submitted**

Erich Binder  
Secretary  
February 23rd 2018

**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 10<sup>th</sup> 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:**

<b>Seminars</b>	<b>Workshops</b>	<b>Panels</b>	<b>Forums</b>
115 submitted	10 submitted	11 submitted	16 submitted
67 presented	5 presented	1 presented	2 presented
 <b>Debates</b>	 <b>Conference Papers</b>	 <b>Technical Papers</b>	
10 submitted	132 abstracts submitted	21 submitted	
3 presented	92 abstracts approved	18 presented	
	67 CP presented	6 Technical Paper Sessions	
	17 Conference Paper Sessions		

**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). (2)

**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](mailto:frankschambach@mindspring.com)
  - ***Track 2: Fundamentals and Applications:***  
Track Chair: Dennis Alejandro                      Email: [denzjac@yahoo.com](mailto:denzjac@yahoo.com)
  - ***Track 3: District Energy and Cogeneration Plants:***  
Track Chair: Kimberly Pierson                      Email: [kdpwildcat@gmail.com](mailto:kdpwildcat@gmail.com)
  - ***Track 4: Safeguarding your HVAC&R System:***  
Track Chair: Rich Rose                      Email: [richr@mticontrols.com](mailto:richr@mticontrols.com)
  - ***Track 5: Residential – Modern buildings in Hot and Humid Climates:***  
Track Chair: Dimitris Charalambopoulos                      Email: [dimitris@ashrae.gr](mailto:dimitris@ashrae.gr)
  - ***Track 6: Commissioning– Optimizing New & Existing Buildings and their Operation:***  
Track Chair: Kevin Marple                      Email: [kmarple@benzco.com](mailto:kmarple@benzco.com)

- **Track 7: Research Summit:**  
Track Chair: Melanie Derby      Email: [derbym@ksu.edu](mailto:derbym@ksu.edu)
- **Track 8: HVAC&R Control Freaks:**  
Track Chair: Gary Debes      Email: [gcdebes@verizon.net](mailto:gcdebes@verizon.net)
- **Track 9: HVAC&R Analytics (Mini-Track)**  
Track Chair: Vikrant Aute      Email: [Vikrant@umd.edu](mailto:Vikrant@umd.edu)

**2. 2019 ASHRAE Winter Conference in Atlanta, GA:** <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](mailto:j.firrantello@gmail.com)
  - **Track 2: Fundamentals and Applications**  
Track Chair: Rick Hermans      Email: [herma015@umn.edu](mailto:herma015@umn.edu)
  - **Track 3: Refrigeration**  
Track Chair: Sonya Pouncy      Email: [sonya.pouncy@gmail.com](mailto:sonya.pouncy@gmail.com)
  - **Track 4: Construction, Operation, and Maintenance of High Performance Systems**  
Track Chair: Leticia De Oliveira Neves      Email: [leneves@gmail.com](mailto:leneves@gmail.com)
  - **Track 5: Common System Options and Misapplications**  
Track Chair: Lee Riback      Email: [lee.riback@gmail.com](mailto: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](mailto:ashish.rakheja@aeonconsultants.in)
  - **Track 7: Building Integrated Renewables and Natural Systems**  
Track Chair: Maggie Moninski      Email: [maggie.moninski@gmail.com](mailto:maggie.moninski@gmail.com)
  - **Track 8: The Engineer's Role in Architecture**  
Track Chair: Ashu Gupta      Email: [ashu.energy@gmail.com](mailto: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/](http://web.ashrae.org/cec_request/). Please contact Tiffany Cox, ASHRAE Assistant Manager, Conference Programs, at [tc Cox@ashrae.org](mailto:tc Cox@ashrae.org) for more information.

#### **10. ASHRAE 125<sup>th</sup> 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](http://mc.manuscriptcentral.com/ashrae). For more information, contact Jeff Haberl, 979-845-6507, [jhaberl@tamu.edu](mailto: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.

##### 2018

Date	Conference	Location	Website
Sept 26-28	ASHRAE Building Performance Analysis Conference and SimBuild	Chicago, IL	<a href="http://ashrae.org/BuildPerform2018">ashrae.org/BuildPerform2018</a>
Oct 4-5	3 <sup>rd</sup> International Conference on Efficient Building Design	Beirut, Lebanon	<a href="http://ashrae.org/Beirut2018">ashrae.org/Beirut2018</a>

#### **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 in 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” discussions held to promote a free exchange of ideas. Reporting of forums is 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.

## **Attachment**

### **Program Chair Report for TC 9.2, Chicago, IL**

**January 23, 2018    Vin Gupta/Bill Lampkin**

#### **A. No Programs Planned for Chicago**

#### **B. Future Planning**

1. Seminars 2. Workshop 3. Technical Papers 4. Forum

#### **Seminars/Workshops/Forum under consideration from prior years are:**

We should Plan? Discussion ? \_\_\_\_\_

1. Topic- Will Green Technologies affect Industrial applications- Zero Impact, Zero energy
  - a. Speakers- Mark Miller, Don Colliver, Kevin Marple
  - b. TC 9.2
2. Topic- What Industrial Technical Committees do in ASHRAE
  - a. Speakers- Kevin Marple, Mike Connor, Morgan
  - b. TC 9.2, TC-5.4
3. Topic- Industrial Energy Generation and savings for Sustainable operations
  - a. Speakers- Erich Binder, Vin Gupta, Joel foster
4. Topic- Battery Room Ventilation-
  - a. Speakers- Deep Ghosh, Erich Binder,
  - b. Others TC-9.9 – May be done in Atlanta
5. Topic- Design/build of Industrial Facilities/Industrial equipment
  - a. Speakers - Erich Binder, Norm Maxwell, Vin Gupta.
  - b. Work with TC7.2
6. Forum under Consideration- Use of Desiccant in Ultra Low Dehumidification –
  - a. Speakers – Ravi Ganta, Norm Maxwell?
7. Erich Binder is working on a specialty conference for industrial HVAC