

**AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING
ENGINEERS, INC.
1791 Tullie Circle, N.E./Atlanta, GA 30329
404-636-8400**

TC/TG/MTG/TRG MINUTES COVER SHEET

(Minutes of all Meetings are to be distributed to all persons listed below within 60 days following the meeting)

TC/TG/MTG/TRG No.: 5.5 DATE: 06/27/2017

TC/TG/MTG/TRG TITLE: Air to Air Energy Recovery

DATE OF MEETING: 06/27/2017 LOCATION: Long Beach, CA

MEMBERS	POSITION	STATUS	YEAR APPTD	PRESENT
Paul L Pieper, Eng, PE	Chair	Voting	2014	X
Matthew Friedlander	Vice Chair	Voting	2013	X
Tom Rice	Secretary	Voting	2014	X
Dr. Gursaran D Mathur, PE	Handbook Co-Chair	Voting	2014	X
Dr. Prakash R Dhamshala	Handbook Co-Chair	Non Voting	2014	X
Mr Ronnie R Moffitt, PE	Program Chair	Non Voting	2013	X
John T Dieckmann	Research Chair	Non Voting	2014	X
Xuan Le	Webmaster	Voting	2015	X
Marcus D'Arcy		Voting	2012	X
Peter K Grinbergs		Voting	2014	X
James Piscopo		Voting	2016	X

DISTRIBUTION

<i>All Members of TC/TG/MTG/TRG plus the following:</i>	
TAC Section Head:	Mr Kenneth C Peet kcpeet1@gmail.com
TAC Chair:	Dr Thomas M Lawrence lawrence@enr.uga.edu
All Committee Liaisons As Shown On TC/TG/MTG/TRG Rosters:	Cameron R Labunski PE, cameronl@tgce.com James A Arnold, PE, jim@haslettmechanical.com Patrick C Marks, PE patrick.c.marks@jci.com David A John, PE, davidjohntarpon@gmail.com Dr Arsen K Melikov, PhD, akm@byg.dtu.dk Mr Michael R Vaughn MORTS@ashrae.net
Manager Of Standards	Stephanie Reiniche
Manager Of Research & Technical Services	Mike Vaughn
TC 5.5 Membership	TC0505@ashrae.net

Paul Pieper called the meeting to order at 3:34 pm (pacific time)

- Paul Pieper read TC 5.5 purpose statement
- Paul Pieper read ASHRAE Code of Ethics
- Introductions
- (8) YEA in attendance
- (4) New attendees
- 6/7 voting members in attendance

Motion: To Approve Las Vegas minutes

Prakash Dhamshala moved, Matthew Friedlander seconded.

Votes 6/0/0 Chair Not Voting, motion passed.

I. Chair report (Paul Pieper, Chair)

Technical bulletins are a method of sharing specific official positions

New manual of procedures has been issued.

Thank you letters to employers for allowing individuals to participate in ASHRAE meetings are available – contact the chair.

II. Handbook Subcommittee Report (GD Mathur, Prakash Dhamshala Co-Chairs)

- Chapter was distributed to TC5.5 March 22.
- Chapter in Systems and Equipment must be finalized and approved by the TC in 2 years, i.e. by Summer Meeting 2019, for publication in 2020.
 - o GD proposes to set up monthly updates and set up a committee to support completion.
 - o ASHRAE is asking for more interim/remote meetings in which Subcommittees move their work forward.
 - o Members of the Handbook Subcommittee are: Ronnie Moffitt, John Bolster, Marcus D’Arcy, Mo Afshin, Carey Simonson
- Discussion: Possibly splitting chapter into 2 chapters: perhaps Exchanger Fundamentals, and Control and Applications.
 - o Chapters in “HVAC Applications” must be approved by TC by summer meeting 2018 for publication in 2019.
 - o Chapters in Fundamentals must be approved by TC by summer meeting 2020 for publication in 2021.

III. Program Subcommittee (Ronnie Moffitt, Chair)

- Long Beach presentation was attended by about 50 people:
 - o Topic: Residential Energy Recovery
 - Application – Manalee Nabar
 - Modeling – Peter Grinbergs
 - Equipment – Adam Fecteau
 - High Rise examples – James Dean
- Chicago Program

- TC 8.10 is submitting to present a DOAS design guide seminar
- TC5.5 Seminar: Large scale applications
 - Chair - Adam
 - Speaker – Ronnie Moffit
 - Speaker – Mo Afshin
 - Speaker - Looking for 3rd person (engineer of large project)
- Co-sponsorship with TC8.12: Hospital Surgery Suites
 - Co-sponsorship
 - Tom Rice – Speaker
- Ronnie suggested that members consider generating Conference papers for Houston; due August 28
 - Doesn't have to link to a presentation.
 - Humidity focus would be good because of location (Houston)

IV. Research Subcommittee (John Deickman)

- DOAS design guide is now complete (1712-RP)
 - Has been published and in the book store.
 - Publication announcement was passed around.
- Provided RAC update
- RTAR 1799
 - Scalability of test results study
 - Conditionally approved by RAC
 - Work Statement draft has been developed (basic help supplied by Matthew and Drake)
- RTAR Researching into energy modeling (what is out there) for ERV.
 - Improved sub models of energy plus
 - John reported he had engaged in dialogue with members of TC 4.7 “Energy Calculations”.
 - TC 4.7 members stated that they felt that the computer model part was the easy part, that what they need is an accurate description of how to physically model energy recovery exchangers (and that we are not unique in this respect, many other components champions complain about model results, but never really communicated how the component performance should be modelled in the first place).
 - As an alternative to an RTAR, TC recommends drafting a white paper on operation and basic context of an air-to-air component (~5 page).
 - Supporting John: Kristin Sullivan, Marc Tardiff, Marcus D’Arcy
 - This will further help the system approach of component operation with downstream components and potentially look at compliance with the standards such as 90.1 and others
- RTAR 1780 – (Brief update from Matthew Friedlander)
 - TC 9.10 Regarding transfer of building contaminant indicators
 - TC 2.3, TC 5.5, SSPC 62.1 are co-sponsors
 - 3 members of the TC 5.5 to be involved
 - Tom Rice, Adam Fecteau and Matthew Friedlander
 - TC 5.5 voted to not support the work statement as written (early 2017)
 - Work statement is being edited, Matthew Friedlander is following updates from Roland
 - Standard 84 is viewed as an energy method of test not a part specifically of this RTAR

- After work statement has been updated, there will be a letter ballot so we cannot delay the RTAR (needs to be completed by Nov 15 to make it into 2018 winter meeting)
- Cross TC working group is going to support the effort of updating the work statement
- There is available research by ASHRAE available as there have not been many RTARs requested

V. Standard Subcommittee (Matthew Friedlander)

- SPC 84
 - TC 5.5 reopened
 1. Adjust normative sections to mandatory language
 2. Introduce methods of test for fixed mass regenerators
 - Draft Completion 2017
 - Draft review Winter Meeting 2018
 - Public review 2018
 - Goal is to publish by end of 2019
 - Looking to do advisory public review

VI. TAC Liasion Report (Ken Peet):

- TAC thanks the group for us being willing voluntary participants
- Checked on offline meetings and remote meetings to make semi-annual meetings more efficient
- August 1st – Seminar and papers are required
- Checked for website updates
- CEC working on improving communication on seminar approvals and supporting additional availability to do more seminars
- CEC looking for track ideas, better communication on what is wanted by the membership
- 2 things from RAC:
 - Prioritizing the residential sector
 - Intent on making research projects are co-sponsored and pulling experience with so that research projects are well developed by experienced individuals

VII. Webmaster Report (James Scudamore)

- Information in the website available to share what we are a part of (research, handbook, etc)
- We will update website soon with details

VIII. Membership (Paul Pieper)

- Provisional Corresponding move to corresponding in Summer
- 8 voting members currently
- Paul Pieper to roll off as chair and voting member
- GD rolling off in June and Prakash to roll on
- John Deickman rolling on
- Ronnie Moffit rolling on
- Drake Erbe rolling on
- This will raise voting members to 11
- Adam taking secretary position in June

- Paul Explained that on your ASHRAE account you can confirm your position with the TC

IX. ASHRAE Learning institute Liaison Report (Paul Pieper)

- Looking to develop DOAS short course
- Looking to develop an ERV Control short course

X. SPC 90.1 Liaison Report (Matthew Friedlander)

1. Addendum dn is still unresolved. TC committee members did meet with 90.1 representative John Bade and some good progress was made but John has not been able to complete the modelling required. John is working to deliver that modeling by October.
2. Addendum h clarifies that an energy recovery system shall achieve at least 50% enthalpy recovery ratio at both heating and cooling design conditions, unless one mode is not required for the climate zone by the exceptions below.
It received 1 substantive comment, and will not be acted on by 90.1 until the comment is resolved.
3. Addendum j – addresses a possible loophole to Demand Controlled Ventilation requirements in mild climates. It is sometimes less expensive to install an energy recovery system at air handlers than to install DCV controls at each zone. But in climates where energy recovery is not required, they offer very poor energy savings and may in fact have negative savings due to fan energy penalties. This addendum therefore only allows the energy recovery exception where energy recovery is cost effective, i.e. where it is required by Section 6.5.6.1.
SSPC 90.1 has approved the addendum and it likely will be published in 2017.
4. Addendum q would have exempted ETS from ERV in the same way Class 4 air is exempted, but the addendum failed so ETS continues not to be addressed in any way.
5. There has been discussion regarding ERV bypass in free-cooling conditions: Should ERV bypass be limited to 0.2 in.w.g. pressure drop? Should both sides of the ERV be equipped with bypass? Chonglui Hui intends to re-examine the energy costs associated with this issue, and Adam Fecteau has volunteered to provide assistance.
6. HVI has requested that the 90.1 MSC form a working group to review 90.1 with the goal of addressing H/ERV requirements for high-rise residential in cold climates (zones 6-8). The 90.1 MSC directed the already-existing ERV group to carry this forward. 90.1 member John Bade had taken over from Susana Hanson a previous project with this group and was directed to address the request from HVI.

- **MOTION:** That TC5.5 form a working group including a member of 90.1 MSC, TC5.5 members, and representatives from Home Ventilating Institute, to address their request to evaluate requirements and metrics for single- unit H/ERV in dwelling units covered by 90.1.

Friedlander moved, second by GD, motion passes 6-0-0, Chair Not Voting.

Participants: Mo Ashfin (Chair), Adam Fecteau, Brandon Damas, James Scudamore, John Bade, Manalee Nabar

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- **MOTION:** that Adam Fecteau be appointed 90.1 liaison.
James Piscopo moved, seconded by Marcus D'Arcy
Motion passes 6-0-0 Chair Not Voting

XI. SPC 62.1 Liaison Report (Tom Rice)

- Spending a lot of time working on electronic filtration
 - o Concerned about certain electronic type filter manufacturers following IAQP process, lowering ventilation but no adequate test to verify that the filter manufacturers actually perform to that level
- Continued effort to normalize ASHRAE 170 and 62.1 consistency
- Natural ventilation and localized ventilation presentations given

XII. Other Business:

Ronnie Moffitt was recognized as having received the ASHRAE Distinguished Service Award

Paul Peiper was thanked for his service as TC Chair.

MOTION: that the Chair adjourn the meeting.

Moved by Marcus D'Arcy, Matthew Friedlander seconded.

Motion passes 6-0-0 Chair Not Voting

Adjourn at 5:34 pm (Pacific time)