

**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 1/26/2016

TC/TG/MTG/TRG TITLE Air to Air Energy Recovery  
DATE OF MEETING January 26, 2016 LOCATION Orlando, FL

MEMBERS PRESENT	YEAR APPTD	MEMBERS PRESENT	YEAR APPTD	MEMBERS ABSENT
Paul L Pieper, Eng, PE VM Chair	2014	X	2014	Peter K Grinbergs VM Non Quorum
Matthew Friedlander VM Vice Chair	2013	X	2012	Bede Wellford VM Non Quorum
Dr. Gursaran D Mathur, PE Dr. Prakash R Dhamshala VM Handbook Co-Chairs	2014	X	2014	Helen Davis VM Secretary
Mr Ronnie R Moffitt, PE NV Program Chair	2013	X		
John T Dieckmann NV Research Chair	2014	X		
Xuan Le VM Webmaster	2015	X		
Drake Erbe, VM	2012	X		
Tom Rice VM	2014	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@engr.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 Manager Of Research & Technical Services	Stephanie Reiniche Mike Vaughn
TC 5.5 Membership	<a href="mailto:TC0505@ashrae.net">TC0505@ashrae.net</a>

Paul Pieper called the meeting to order at 3:40

Have quorum (5 out of 6 with 6<sup>th</sup> to arrive during meeting)

Review of Atlanta Minutes

- GD moves to approve, Swan 2nds
- Motion passes 4, 0, 0 chair doesn't vote
- Minutes were approved
- **Vote – 4, 0, 0, chair doesn't vote**

Chairs Report (Paul Pieper)

- Steven Duda is award winner
- No nominations for service on research award

Subcommittee Reports

Standards (Matt Friedlander)

Adjusted agenda to discuss reconviene SPC-84

Matt Friedlander – spoke as last standards chair

- Looking to maintain on 5 year schedule
- Looking for finish 2018
- Changes of SPC-84 would include:
  - 1 – to add MOT for alternating mass exchangers
  - 2 – to amend defects to standard regarding mandatory standard language
- Volunteers – andy caberneck (mass exchanger), cary simonson, Mary Opoka (AHRI), TJ Farrel (Lab usage)
- Matt proposed to proceed and submit to revision reaffirmation subcommittee.
- Assuming acceptance and group identified, could start at St. Louis Summer Meeting
- Matt moved to submit the periodic maintenance recommendation to SRS
- GD Seconds
- Std 84-2013 active use for 1060 test. Current version is not in current language. Test for alternating mass will be reviewed for inclusion.
- Motion resinded.
- Matt: Move the technical committee to revise Standard 84
- GD Seconds
- **Vote – 4, 0, 0, chair doesn't vote**

Kenneth Peak – TAC

- Multidisciplinary Task Group
  - o MTG ABSC
  - o MTG IATC
  - o MTG ISPACQE (8.10)
  - o MTG OBB
  
- Updated websites – TC 5.5 has been updated.
  - o Swan is webmaster
  - o Updated more easily (tied to ASHRAE updates)
  - o All minutes should be updated on
  - o Any research, handbook, RTAR updates are on the website
  - o 60 days after the meeting minutes get updated
  - o 30-45 days must get agenda out
  - o Meeting/time/place must be populated
  - o Contact Swan/Paul Pieper on any inaccuracies or improvement
  - o The website is mobile friendly
  - o CEC is working on procedures and rules regarding presentations during TAC meetings
  - o They will be advertised in the book, and ASHRAE will vet
  - o Can have speaker during TC meeting
  - o Could see that it would work during working meeting. Only normal time is allowed.
  - o Members only section of the website is available
  
- Active members:
  - o Aliases for members have email for TC through ASHRAE.

### Handbook (GD Mathur)

- Chapter 26 updates
  - o Heat rejection for recovery
  - o Heatpipe section updates
  - o Figure #12 has been changed
    - 1. Psych Chart was same for series and parallel
  - o Figure # have been updated
  - o Approval in this meeting will get the chapter in the handbook
  - o Figure #5 will be replaced with an updated version
  - o A few members have also updated Table #3
    - 1. Sensible, Latent, and total effectiveness
  - o Looking for feedback from members in the next few days. (by Friday) looking for electronic vote.
  
- Discussion to vote at present based on known changes from the working group time period.
- Table 3 is the only contentious item, but the detail is developed through the AHRI rating.
- Matt – moves to approve GD’s text with the modifications he has presented
- Swan seconds

- **Motion passes 5,0,0**
- Discussion to review technical merit to possibly add the alternating mass exchangers
- Next revision would be started 1.5 years from now
- GD will complete chapter 26 and send clean copy to the members for use for future.

#### Program (Ronnie Moffat)

- Cutting edge technologies (carbon copy submission for summer – need to ID tract)
  - o Core technologies
  - o Liquid desiccant transfer
  - o Speakers
    1. Mark with Kathabar? (confirm name and company)
    2. Someone from dPoint
- Indoor air comfort health tract for St. Louis
  - o February 8 abstract deadline - seminar
  - o Looking for speakers (Tom Rice, Matt Friendlander)
  - o Title: “Increased Ventilation Utilizing Energy Recovery versus IAQP”
- For Las Vegas
  - o Interest in writing conference paper for water recovery
    1. Must submit by March 14, papers due in July
    2. Evap cooling technology for example
    3. Heatpipe in natatorium for direct/indirect evap cooling
      -
    4. Data center using heatwheel to reduce water savings
      - Phillip
  - o Organize site location with ASHRAE for a visit (contact host regional ASHRAE chapter to coordinate) to indirect evap cooling casino in Vegas
  - o Industrial Applications (Tract)
    1. Go see Ronnie about opportunities (e-mail RM or PP) for discussion at summer meeting

#### Research (John Dieckmann)

- RP 1712 – Develop Design Guide for DOAS
  - o John passed copies of summary
  - o Status – Contractor selected
  - o Contract signed May 2014, project start June 2014
    1. Task – table of contents
    2. 3 chapters have been drafted
    3. 1 chapter about ready
  - o Goal is to be completed by December 2016
  - o Energy recovery is being prominently in the design guide
  - o Should have 80-90% review by TC

- If there are people of TC 5.5 that want to be involved in review, contact JD or PP
- No active research projects, 2 RTARs out there
  - First is to improve the energy modeling using energy recovery
    1. Not really anywhere yet
    2. TC 4.7 should be asked to co-sponsor
    3. Fits into ASHRAE SPC 205?
      - should TC 5.5 add an appendix (separate effort from RTAR)
      - John has 2 modelers and Drake/Matt to support efforts
  - Second is to evaluate very large energy recovery air to air heat exchangers
    1. Very close to submission
    2. Looking for any more input
    3. About ready to take the formal vote
      - Drake moved to approve to proceed
      - Matt F. seconds
      - **Motion passes 6,0,0 Chair votes 1 absentee no abstentions**
- Swan – Mold
  - Looking at inhibiting microbial growth standard
  - No standard that is specific to Air to Air heat recovery
  - RTAR to look at experts to identify applicable standards and our application associated with our component operation that may occur
  - Looking for providing direction on rating air to air heat exchangers with regard to mold avoidance
  - Microbial test for air to air heat exchangers?
  - How do you prevent – would this be something associated with 84?
  - Standard should be Bias and accurate for the application.
  - ASHRAE std 52.2 is sometimes being used for particle fouling on ERVs.
    1. Next step would be to look at the active particles (growth)
    2. Paper has been written
    3. IAQA would be available to help in this endeavor
  - Issue found in coils (obviously) but also found as an issue with regards to polymer cores
  - Swan moves to create an RTAR on mold growth in air to air heat exchangers to identify the correct standard for that measurement, if there is not a standard then we would create
  - GD seconds
  - Create RTAR and pull in IAQA participants to support (John to coordinate and start). See if ASHRAE 62 would be a cosponsor and possibly TC 8.10.
  - Healthcare is looking for this. Industry is not specifically calling for it, but looking at salability so we can determine a more concrete statement.
  - Swan is going to work on initial RTAR
  - **Paul calls a vote: 3 nos, 1 abstention, 2 yes, 0 not voting**
  - Motion denied. Swan is going to refine for more detail.
- RTAR 1720 – by lab TC 9.10
  - Develop a method to measure contaminate transfer

- TC 2.3, TC 9.6 and ASHRAE 62.1 is cosponsoring
- Approved with comment that TC 5.5 should be involved
- Are we willing to cosponsor.
- Putting to a vote –
  1. Matt F. Move to indicate co-sponsorship of the RTAR and develop the work statement.
  2. Ginsberg seconds
- John Dieckman states this could be opening pandoras box
- **5 yes, 1 no, chair no vote, 1 absentee (Helen)**
- Tom (SEMCO), Matt (Renewaire), Mark (Alfa Laval),

Soliciting membership:

- NTG work statement
- TC 5.5 is supporting
- Ronnie volunteers to be a voting member on the NTG.

SPC 84 reprise by Matt Friedlander:

- Discuss alternating mass heat exchangers
- ASHRAE standard language update of the SPC 84
- ASHRAE will send a call for members and will develop a balance
- St. Louis working meetings will discuss the additional members

Membership

- 4 YEA in attendance
- Helen rolled off as VM, HPT
- July – Drake is rolling off

Liaison reports:

- ASHRAE learning institute
  - Paul did advanced course on Monday
  - 40+ attended, well accepted
  - Good questions
  - Paul submitted proposed revisions to short courses
    1. Once PDC is approved
    2. Paul will create edited ppt
    3. Then there will be review period for group
- SSPC 90.1
  - Addendum proposal when more than 130% of min OA requirement is being provided, then the minimum ERV effectiveness must exceed 60% total (public review)
  - ARAW going for publication

- Addendum DN approved for publication/public review for ERV exceptions 6.5.6.1 (item 5 and 9 only apply for heating) – get information to add detail
- Appendix G will become a compliance path in 2016 version
  1. Why important – enhance adoption of 90.1 universally
  2. There is no performance path in IECC
  3. 45% better than 90.1-2004 – basically requires the use of energy recovery

Meeting was adjourned at 6:15