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Meeting Minutes TC 5.5 Air-to-Air Energy Recovery

Room 617, Seattle Convention Center
3:30 p.m., June 22, 1999

1. Chairman Kirk Mescher opened the meeting with table introductions. A total of four (later increased to five) voting members were present, which did not constitute a quorum. Accordingly, no official votes could be taken.
2. The minutes from Chicago were distributed. A letter/e-mail ballot will be needed to get them improved. They are posted on-line in draft form. (**Action Item: Dave Shipley**)
3. Subcommittee Reports
 - a. Membership - Bert Phillips
 - Members present –Mescher (chair), Vyavaharkar(vice), Phillips, Hammack, Shipley.
 - Members absent – Elkin, Damshala, Ambs, Buckley, Grinbergs, Wawryk.
 - Bert is working on adding some people who have requested to be corresponding members.
 - As of the end of this meeting, Ambs, Buckley, and Elkin will be cycling off the committee. The new membership is shown on the membership listing posted on-line.
4. Liaison Reports
 - a. TAC Liaison - Ricardo Gamboa
 - Ricardo Gamboa presented Kirk Mescher with a certificate of recognition for his service as Chair of TC 5.5. Kirk thanked everyone for their help and support during his term.
5. More Subcommittee Reports
 - b. Handbook
 - Gerry Martin was not present, but those involved in the handbook reported that Gerry got it rewritten, an e-mail ballot occurred, and it went in to ASHRAE on time.
 - Larry is new chair. Has the chapter off the website. Need to get going on re-writing it. At next meeting, final electronic version as prepared by ASHRAE should be available.
 - c. Research
 - Peter Grinbergs was not at the meeting, but a subcommittee meeting was held in his absence. There is a new short form for

research ideas called the "R-TAR". Soon our research ideas will have to be recast in the new format. The subcommittee brainstormed research titles, as the basis for research ideas, and the results were shared with the TC. None of them is an R-TAR yet. Kirk attempted to get a sense of the priority we should attach to each idea. The following table summarizes the ideas and priority straw poll.

Idea	Priority Votes		
	High	Medium	Low
Compilation of life-cycle costs for energy recovery applications	9	4	0
Energy recovery applications - design guideline	7	0	1
Effects of grease laden air on air-to-air devices	0	4	10
Frost formation on air-to-air energy exchangers and control strategies	8	3	2
Impact of energy recovery on indoor comfort conditions	5	8	0
Effects of energy recovery on SEER and EER and CSA439	13	3	0
Investigation of energy recovery on schools	6	8	1
Ventilation rates and productivity (related to comfort idea)			
Effect of carry-over and leakage on effectiveness on air-to-air energy exchangers <ul style="list-style-type: none"> ▪ Effects of differential pressures on the two sides of the exchanger 	9	5	0
Impact of air-to-air preconditioning on active dessicant systems (impact on both performance and sizing)	3	0	11
Pressurization and balancing and humidity control using energy recovery to meet proposed 62-2 standards for ventilation, residential, hot humid climates	9	5	0
Dessicant system carry-over of other common chemicals in the commercial environment? Develop a test procedure?	0	6	7

Investigation durability of dessicants on wheels under use and cleaning cycles (incorporated in life-cycle cost idea)			
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- 1 August, research plan has to go in. 15 September any work statements have to go in. Kirk will talk to Peter about getting the returned work statement in better shape and resubmitted. It will need to have a cover letter that explains the responses to the comments. **(Action Item: Kirk Mescher, Peter Grinbergs)**
 - Bob Besant will write one up on frost control. **(Action Item: Bob Besant)**
 - The website will post any R-TARs that get written. **(Action Item: Dave Shipley)**
- d. Program - Katherine Hammack
- Katherine handed out a Program Subcommittee Report
 - Bede reported on the seminar held in Seattle. He thanked the four presenters. There were approximately 85 attendees. Lots of session evaluation forms were submitted: Bede will try to compile those. We seemed to get some new attendees in this timeslot.
 - We have two programs for Dallas, both seminars. Four or five abstracts are needed for each. Dilip Vyavaharkar volunteered for one of them ("The Squeeze Between Standards 62 and 90 - Real World Solutions with Air-to-Air Energy Recovery"). He has two speakers committed; he needs to talk to both of them. This one is intended to be application-specific. **(Action Item: Dilip Vyavaharkar)**
 - The other ("Wheels, Plates, Pipes and Run-Arounds - What Are They and How Do They Work?") was to be chaired by Katherine. Dallas will be an exhibition meeting, with lots of ERVs out there, so it would be good to help explain what all these devices are and how to use them. She's looking for people who can volunteer to talk about these devices. Kirk Mescher, G.D. Mathur, and Bob Besant are all possible speakers; we could ask Maury Wawryk to do plates? We need to include the distinction between these devices used for energy recovery or for dehumidification. We should probably send a note to the dehumidification TCs suggesting they do the related seminar at Atlanta. **(Action Item: Katherine Hammack)**
 - ASHRAE is looking for people to develop short courses, with instructors and curriculum. Could try to do one at Minneapolis or Atlanta in lieu of a symposium at one of those places.
 - A symposium planned for Minneapolis. Peter is not here, so we have some concerns about whether this will be ready. Abstracts are due 15 Sept and full papers are due Nov 1st; the review process takes place Nov, Dec, Jan. Peter should do another call for papers.

There were some potential authors in the room. (**Action Item: Peter Grinbergs**)

- A symposium planned for Atlanta. Kirk will get the call for papers form out. (**Action Item: Kirk Mescher**)
- Discussion on a short course: There was some interest, but these courses take a fair amount of effort. It needs to be someone who is above suspicion of bias (for example, it probably can't be someone from the manufacturers). We could approach DOE for some help with funding. Bert Phillips would be interested in being part of a team. Shall we accelerate the development of a work statement on developing design guidelines? George Benda might be a good participant.
- Forum topics-there are probably a number of topics that relate to the role of energy recovery in meeting the new requirements of 90.1. "Energy recovery ventilation to meet 90.1" for Minneapolis, chaired by Davor (**Action Item: Davor Novosel**)

e. Standards

- Maury Wawryk was not present to report.
- There was a meeting of the Std 84 committee June 21. Lots of work got done, including a lot of wordsmithing. It may be ready to get it voted out for review next meeting.

f. Journal and Insights

- No report.

6. More Liaison Reports

b. Standard 90.1 - Bede Wellford

- Standard is going to publication. Changes made during public review include definition of energy recovery effectiveness. It is now defined in terms of enthalpy instead of just temperature. Now application specific standards for energy recovery are published in the standard: air handling systems 5000 cfm or greater and also 70% outside air now have to have recovery of at least 50%. That's a big success.
- Also with 90.1 there are a lot of other changes we can pursue. The mechanical subcommittee has invited the industry to come back with research on energy savings in actual buildings with DOE2 or Blast type modeling. ARI is funding development of better add-ins to DOE2, etc., for modeling enthalpy recovery instead of just temp recovery. That should be done this summer, so then we can use that to do modeling. Then we will be able to present it to the SSPC doing the continuous maintenance on the standard. Bede invited people to make their input known.

c. Standard 62.2 - Bede Wellford

- Has not been actively following that. Seems to be still up in the air, but it sounds like the Board may not send it out. Davor Novosel reported that SPLS did not vote it out. The Board rejected

the public review draft because they believed consensus had not been reached in the society. The Board does not want to have similar comment experience as previous reviews of large standards.

d. Standard 62.1 - Bede Wellford

- The new chairman, Andy Persily, was with us for the meeting. An addendum has been voted out for public review. Based on discussions at full committee meetings over the weekend, the SSPC was persuaded not to delete the definition of energy recovery from the addendum. If we felt that energy was not being treated in 62.1 at all, we'd be comfortable with removing that definition.
- There are addenda coming out in a stream now. There are some very good things in there, so Bede will be putting in some positive feedback. Addendum 62.1N contains a new ventilation rate procedure, especially for dense occupancy spaces (80% of adapted occupants satisfied instead of 80% of new visitors). Now out for public review. We did not manage to influence this effectively during the TC feedback stage, so we have to have our input during the public review.
- There was discussion of how this new approach means as many as 20% of occupants may now be unsatisfied (and unproductive!!). This change will result in a decreased ventilation rate and hence a higher concentration of contaminants. There isn't a solid scientific basis for showing that these higher concentrations are appropriate. There is a substantial body of case law regarding experiences with low ventilation rates used by designers, based on Std. 62-1981.
- Ventilation effectiveness and system efficiency both still need more consideration in the standard. Some research has been coming in on this.

e. TC 3.5 - Davor Novosel

- TC 3.5 is in the process of initiating a standard and are asking if we would be interested in assisting with the development of it. It would be a method of test on wheels. TPS now drafted. Kirk asked for the feeling of those present. Based on the draft scope they have, we should probably be involved. Needs to go out for e-mail ballot. If the results are favorable, we would write a letter offering to co-sponsor. **(Action Item: Dilip Vyavaharkar)**

7. New Business

- Katherine Hammack reported to us on several papers ASHRAE says they have received and are putting through the review process. Some of them may potentially be able to be used in some of our upcoming programs.

2. Adjournment

SUMMARY OF ACTION ITEMS

Description	Responsible Party	Status
Letter Ballot on Chicago Minutes	Secretary	Open
Make sure research plan gets submitted to ASHRAE	Chair, Research	Open
Write up research idea on frost control	Bob Besant	Open
Post R-TARs and other research material on website	Website	Open
Organize Seminars for Dallas	Dilip Vyavaharkar, Katherine Hammack	Open
Call for papers for Symposium for Atlanta	Kirk Mescher	Open
Organize Forum for Minneapolis	Davor Novosel	Open
Conduct letter/e-mail ballot on TPS	Chair	Open
Status of items carried over from previous meetings but not discussed:		
Provide brief written reports to the TC	Subcommittee chairs and liaisons	Open
Place ad for symposium papers	Peter Grinbergs	???
Provide input to 5.8 chapter	Handbook?	???