

**AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS,
INC.**

**1791 Tullie Circle, N.E./Atlanta, GA 30329
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TC/TG/TRG MINUTES COVER SHEET

(Minutes of all TC/TG/TRG Meetings are to be distributed to all persons listed below within 60 days following the meeting.)

TC/TG/TRG NO 5.5 DATE February 1, 2011

TC/TG/TRG TITLE Air to Air Energy Recovery

DATE OF MEETING February 1, 2011 LOCATION Las Vegas, NV

MEMBERS PRESENT	Chapter Position	YEAR APPTD	MEMBERS ABSENT	Chapter Position	YEAR APPTD
Michael Sherber	Chair/ Member	2009	Bert Phillips	Membership Chm / Member	2007
Gregory Dobbs	Vice Chair/ Member	2009	David Shipley	TC Webmaster/ Corr Mbr	NVM
Ronnie Moffitt	Secretary/ Member	2009			
Bob Besant	Research Subc. Chm./ Member	2009			
Matthew Friedlander	Standards Chm/ Member	2009			
Paul Pieper	Member	2009			
Saunders Smith	Member	2007			
G.D. Mathur	Handbook Subc Chm/ Member	2008			
Drake Erbe	Member	2007			
Prakash Damshala	Handbook Subc. Chm./ Corr Mbr	NVM			
John Diekman	Member	2010			
See Attachment for Additional Attendees					

DISTRIBUTION

All Members of TC/TG/TRG plus the following:

TAC Section Head: Giustino Mastro	SH5@ashrae.net
TAC Chair: Donald Brundage	TACchair@ashrae.net
All Committee Liaisons As Shown On TC/TG/TRG Rosters:	Name Position Sheinman, Harris Handbook Liaison Mendez, Florentino Professional Development Comm (EDUC) Castellan, Danny Research Liaison Mumma, Stanley Special Pubs Liaison Subherwal, Bodh Standard Liaison Vaughn, Michael Staff Liaison
TC 5.5 Membership	TC0505@ashrae.net

- Call to Order /Welcome @3:45pm

Introduction

7 voting members present and quorum was met
Introduction & Sign up (Current e-Mail & updates) (See Attached)

Handbook (Prakash Damshala / GD Mathur)

A copy of the 2012 Chapter 25 (versus 44 in past versions) Air to air recovery chapter was handed out to review. This includes revised data that has been sent over the last couple years. The Prakash outline the following changes

Additions and Omissions from Previous Version of the Chapter

The following represents the modifications made to the chapter for your approval.

1. Two methods of capacity control have been added with two graphs representing capacity variation of recovered energy with (i) wheel speed and (ii) with amount of bypassed air.
2. Systems with multiple energy recovery exchangers has been added. These are added to have control on capacity of dehumidification and sensible loads. They can be added in parallel or series modes. The schematic and the corresponding processes displayed on the psychrometric charts are added along with six figures to augment the explanation.
3. Addition of passive desiccant wheel in place of second energy exchanger is a variation to this arrangement.
4. Liquid desiccant cooling systems (LDCS) has been added that has a great potential of latent air-to-air energy recovery by use of solar energy. Types of desiccant fluids, types of flow configurations in packed bed systems have been presented with addition of one figure and one table.
5. The thermosiphon and twin tower heat exchangers have been reinstated with additional figures and updated materials and performance curves depicting the variation of effectiveness with percentage of static charge and temperature differences for two different face velocities. A couple of two new references have been added to support the addition.
6. Eight more new equations have been added to represent the performance of energy recovery systems (Recovery Efficiency Ratio, RER and combined Efficiency, CEF) that account for energy consumption of these devices.
7. The Table of Contents of the chapter has been modified to better reflect the order of presentation of the materials in the chapter.
8. One equation and one Figure have been omitted from the previous version.

Review is as soon as possible. February 14th deadline review of the chapter was requested by the members, Final Revision is needed by July 4th.

- Agenda was reviewed

- Albuquerque Meeting Minutes Approval
First Matthew F, 2nd Greg Dobbs, Minutes passed 8-0

- 189.1/90.1 Update by Carol Marriott

90.1 Update, Approved work plan 2013 a 50% improvement over 2004, 2010 was a 30% improvement over 2004. No proposals changing requirements for energy recovery for either standard at this time from 2010 standards. 90.1 has effectiveness at 50% and 189.1 is at 60%. Greg Dobbs also stated there was no major items with respect to energy recovery, however DOAS systems may be included and are of interest in the coming in future.

- Chair's Report (M. Sherber)

2010-2011 High Tower award winners announced, Gary Phetteplace, Member of TCs 6.2 & 6.8

Advanced Energy Guide Peer Reviews that are coming up were listed.

Feb 14th Energy Efficiency Guide for Existing Commercial Buildings, 60% Draft

Feb 21st 50% Advanced Energy Design Guide for k-12 School Buildings -60%Draft

April 18th Performance Measurement Protocols: Best Practice Guides 60% Draft

April 25th Advanced Energy Design Guide for K-12 90% Draft

The scanning of badges is now being used versus signing in for continuing education credits.

A new Help Wanted section will be added for TC pages, to advertise for requests for help with committee activities.

More committees are opting for conference calls for sub committees, if committee member have requests for this they should be directed to Mike Vaughn.

Seminar and Forums are due Feb 14th final and Tech papers due March 7th for Montreal

Chicago Abstracts due April 18th, June 3rd for Seminars and Forums.

- Giustino Mastro: Section 5 Update

-Updates are needed for websites many are not up to date.

-Roster updates are needed by Feb 10th, as well as activities feed back form.

-Montreal meeting coming up, need passport when flying.

-There is a Discussion and move to develop multi-disciplinary groups that would work similar as TC to bring together multiple TCs to take advantage of similar activities.

Research (Bob Besant)

1461 RTR handed back to TC 4.4 that concern with building material and moisture adsorption. This RTR has been dropped.

1565 approved work statement for DOAS Design Guide has not been started and is slated for spring to go out for quote.

Suggestion for research was introduced during subcommittee meeting to look at performance of recovery equipment outside the AHRI test points. Another could look at unbalanced flow and affect of this on performance. This could help quantify year round performance. A proposed RTR is to be put together. Suggested that research adds a survey of what is available to today. It was asked if this could be completed by Mid April for group to review.

Carol Marriott mentioned it was previously mentioned looking at accuracy of energy modeling accuracy with respect to energy recovery. Nothing has been put forth on this yet. Paul Pieper volunteered to put a scope together on this.

Programs (Paul Pieper)

Short course of energy recovery had attendance of 61 people. There is a Wednesday Seminar scheduled at 11am.

A French seminar was suggested for Montreal, one in French only was rejected, however if presented in bilingual this could be approved. Topics are case studies for Montreal area and may try to tie in a site tour, another topic for advanced seminar is eXergy analysis with energy recovery systems. No current title.

For Chicago, a seminar on Guideline V updates and Guideline W. Case study on local school is also a possibility.

San Antonio no topics yet. Archive/Storage/Museums suggested by Stan.

There was a short course was proposed taught by D. Kosar which several in committee volunteered to review last meeting, as of this meeting this had not been reviewed by the group. Paul to follow up on resending the link for this review.

1. Website (Dave Shipley -Not Present)

Mike Sherber spoke that Dave Shipley was wanting to step down from TC website chair. Volunteer for this was requested. Charissa Garcia offered to help volunteered to help.

Standard 84 (Matt Friedlander)

The first meeting met during the Las Vegas Meeting. Matthew is optimistic that first draft of errors for meeting in Montreal. A web meeting is scheduled around May 1st to compile the changes the group has suggested.

Other

Paul Piper has videos for digital version of handbook showing ERV maintenance, but is need to know where to upload. Mike is to follow up on this.

Standard 62 Bede Wellford

Overall committee is satisfied with current standard. One comment on building pressurization from Stan Mumma was passed on to the committee. An addendum was proposed the Vote to be maintained by modulating fan speed and modulating damper or other means as concern is many are still utilizing fixed damper positioning.

TC 7.8 Klas Haglid

ASHRAE took over website to log building data, however error in place which did not take in new data. This is being worked on. There is data that can be retrieved from this data base of the 400 buildings. Expect more to be added.

Membership

Bert Phillips was not present. There was a solicitation for new voting members were asked to take place of 4 people rolling off roster in 2011. Names of Matthew Foster(Intertek), Mike Harvey, Klas Haglid, Charissa Garcia were proposed.

New Business

90.1 Technical support document for 2010 standard will available in April will have energy recovery results for 3 buildings showing 30% reduction in energy with recovery included.

Meeting Adjourned at 5:45pm

Adjournment

Attendees from Sign in list, 38

Name	Current Status
Gregory M Dobbs	Vice Chair/ Member
Gus Mastro	TC Section Head
Ronnie R Moffitt	Secretary/ Member Research Subc. Chm./
Robert W Besant	Member
John T Dieckmann	Member
Drake H Erbe	Member
Matthew Friedlander	Member
Paul L Pieper	Member
Saunders C Smith	Member
Gursaran D Mathur	Handbook Subc. Chm./ Member
Prakash R Damshala	Handbook Subc. Chm./ Member
Michael S Sherber	Member
Klas C Haglid	Chair/ Member
Mazen M Awad	Corresponding Member
	Corresponding Member

Peter K Grinbergs	Corresponding Member
Bede W Wellford	Corresponding Member
Carol E Marriott	Corresponding Member
Chris B Check	Corresponding Member
Clifford Mike Scofield	Corresponding Member
Stanley Slabinski	Corresponding Member
Thomas J Kelly	Corresponding Member
Xuan Le	Corresponding Member
Blake Erb	Guest
Charissa Garcia	Guest
Colin McGugan	Guest
Jackson Smith	Guest
James Dean	Guest
Junichi Takahashi	Guest
Kritian Tan	Guest
Marc Sorge	Guest
Matthew Foster	Guest
Meho Berkovic	Guest
Mike Harvey	Guest
Mike Woolsey	Guest
Solverg Brand	Guest
Tom James	Guest
Vijayanand Percannan	Guest
Wayne Caudle	Guest