



**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 DRAFT MINUTES COVER SHEET**

TC/TG/TRG TITLE: TC 8.7 Variable Refrigerant Flow

DATE OF MEETING: 4:15 PM to 6:15 PM; June 30, 2014

LOCATION: Seattle, WA

## DISTRIBUTION

<i>All Members of TC/TG/TRG plus the following:</i>	
TAC Section Head: Steve Duda	<a href="mailto:SH8@ashrae.net">SH8@ashrae.net</a>
TAC Chair: Craig Way	<a href="mailto:TACCHAIR@ashrae.net">TACCHAIR@ashrae.net</a>
ASHRAE Manager of Technical Services:	<a href="mailto:MORTS@ashrae.net">MORTS@ashrae.net</a>
All Committee Liaisons as shown on TC/TG/TRG Rosters:	Program: <a href="mailto:PL8@ashrae.net">PL8@ashrae.net</a> Special Publications: <a href="mailto:PUBCHAIR@ashrae.net">PUBCHAIR@ashrae.net</a> Handbook: <a href="mailto:HBS8@ashrae.net">HBS8@ashrae.net</a> CTTC: <a href="mailto:CTTC8@ashrae.net">CTTC8@ashrae.net</a> RAC Research: <a href="mailto:RL8@ashrae.net">RL8@ashrae.net</a> PDC: <a href="mailto:PDCCHAIR@ashrae.net">PDCCHAIR@ashrae.net</a>
Additional Distribution	
ASHRAE Manager Of Standards	<a href="mailto:MOS@ashrae.net">MOS@ashrae.net</a>

### 1. Call to Order

Chris Bellshaw called meeting to order

### 2. Welcome/Introductions

### 3. Minutes Approval

Motion to approve—with change of spelling of MOLNAR

Approved

### 4. Agenda Review/Updates

- a. Agenda; Any adjustment to the agenda?
- b. Chris will give update for research for Heckler (absent)

### 5. Chair's Comments (Bellshaw)

#### Chair's breakfast:

New MTG's formed: Cold Climate. New this year, Moisture in Buildings. Interested people can go to [ASHRAE.org/ts](http://ASHRAE.org/ts) for info

Update your bios in ASHRAE!!

Society is looking for volunteers: Support for meetings—session chairs, conference & technical paper reviewers.

Register with ASHRAE (Chris passed around a sign-up sheet).

Looking for winter 2016 Track topic suggestions

Ask Chris if you'd like a thank you letter to be sent to your company for your ASHRAE service.

Upcoming meetings:

Chicago—Winter (2015)

Atlanta—Annual (2015)

This is Chris' last meeting as Chair. He expressed his gratitude to all for participation and support.

## 6. Subcommittee Reports

### 6.1 Membership

Chris rolls off as Chair, Brian rolls on as Chair after this meeting.  
Bob S. will not be continuing as liaison to ALI. Looking for a volunteer to take on that roll?  
Dermot M. tentatively volunteered (with Co-Chair Keith R.)

Bob S. is leaving the committee.

### 6.2 Program (Heckler)

Winter conference (Chicago) - 8 tracks  
Annual meeting (Atlanta) - 8 tracks  
Of interest for Atlanta: commissioning, modeling  
Other suggestions for track subjects: Owning & Operating Costs

Atlanta:

Commissioning session (target a conference paper):

Participants:

- Mitsubishi
- Daikin
- Heckler

Work with TC 7.9 (commissioning) to co-sponsor

Deadline is Sept 22, 2014

Work through the Track Chair

Work through a Program Subcommittee Chair of TC 8.7.

Suggestion #2 - Energy modeling (target a conference paper session)

Chair (Pam A.)

- Chris B.
- Dermot M.
- Pam A. has a contact...

Others mentioned:

Code Compliance - perhaps in fundamentals track??

-Workshop?

Mythbusters II - Chicago? (in the fundamentals track)

Pam suggested a debate style between TC 8.7 & some other TC, like VAV, etc...

-Who would be crazy enough to take us on?

Deadline for Forums etc. is August 11 (for Chicago winter)

Debate session will be the first choice, fallback will be Mythbusters II.

Chair: Pam A. (she will reach out to other TCs)

**Steve Duda (TAC liaison)**

Nothing earthshattering

Continuing to move forward with Most-Outstanding TC award. One per section is awarded.

Decision in October for award in Chicago

New roster will take effect on Wednesday afternoon (July 1).

Steve acknowledged the work of the Chair & presented Chris a certificate!!

**6.3 Research**

9.1, Standard 15 & 8.7 met on the phone in February. 1684 due date is August 15. They worked out details of work statement submission & will attempt to submit by Aug 15. RAC wants to see a draft by 8/15, but the work statement can be revised further after the 15<sup>th</sup>.

TC 9.1 is the lead submitter.

Dermott asked questions about how it was determined that a leak rate was deemed necessary.

**6.4 Standards & ASHRAE Learning Institute (ALI)**

Question about ALI: Any thoughts on a chapter by chapter VRF certification program?

**6.5 Webmaster**

Website was updated several days ago with minutes, etc.

If anyone has suggestions or links for papers, etc. please send them to McKayla

**6.6 Handbook**

Held a handbook forum on Sunday. Some areas were pre-identified as needing work:

Controls & BMS integration, night setback, system commissioning; received much support at the forum

Code compliance

- refrigerant piping
- ASHRAE 15

Modeling with VRF

Now need volunteers to help write these subjects into the chapter...

Finished product needs to be complete by December 2014 for review in Chicago 2015.

Volunteers:

Chris B., Brian B., Chris Lasner, Pam A., Dermot M.,

## **7. Liaison Reports**

### **90.1**

Some revisions to 90.1 may affect VRF—ventilation

Mechanical subcommittee

189.1 (need a liaison from 189.1...)

Approved VRF efficiency tables. They used CEE Tier 1 values. Will be submitted to the ASHRAE board in August for publication.

Addendum E—remove economizer table for computer room units

### **15 - (Doppel)**

Rewrite of ASHRAE 15 is ongoing. VRF is considered “high probability” because leakage goes to occupied space. This may be an ASHRAE definition & not the purview of Standard 15. Paul D. disagrees with this position. ASHRAE 15 chair agreed to look at that section of the standard and potentially re-work.

Several issues with 1684 draft. Too much mention of VRF exclusively. Other issues that will be addressed...

Paul had multiple itemized issues with the re-write - he is speaking up and addressing.

Any substantial change in a standard must go out for public review. We should have ample opportunity to comment & suggest adjustments per our views.

There is potential for A2L refrigerants to be used in future VRF systems. Should these refrigerants be accounted for in the current research? Perhaps two separate research projects...

### **62.1 & 62.2 - (Doppel)**

Minimum filtration is MERV 8 (62.2), MERV 6 (62.1). Discussion about how to split out college dorms (62.2 or 62.1)?? Still under consideration...

We should pay attention to discussions on ventilation requirements for VAV zoning systems. This could ultimately trickle down to VRF.

## **8. Old Business**

None.

## **9. New Business**

Comment from John Bucher (University of MD). Identified a problem - lack of BACnet connectivity. Not happy at inability for staff to diagnose any issues beyond the thermostat.

Question about any update on a MTG for hot climates?? No one from TC 8.7 appears to be involved at present.

Keith (TC 7.8) adding info on VRF for life cycle analysis. Looking for input about VRF expected life. Chris thinks that info is in the Handbook VRF chapter.

**Meeting Adjourned...**





Snapping Tomorrow's  
Built Environment Today

### TC Sign-in Sheet

Meeting Info: TC 8.7 Date: 6/30/14

Name	Affiliation	E-mail	Member (Voting, Corresponding, or Guest?)	YEA Member? (Yes/No)
Ron Domitrovic	EPRI	rdomitr@epri.com	MEMBER	No
indongwang	AHR1	XWang@ahriet.org	Guest	No
John Molnar	Armstrong Fluid Technology	jmolnar@armstrongfluidtechnology.com		Yes
Duke Hung	Lennox	duke.hung@lennoxind.com	Corresponding	No
Steven Faulkner	Georgia Power	s1faulkn@southernco.com	Add corresponding ASHRAE #8011856	No
Brian Bogdan	LG Electronics USA, Inc	brian.bogdan@lge.com	Voting Member	N
JOHN CUMMINGS	LG ELECTRONICS USA	john.cummings@lge.com	CORRESPONDING	NO
BOB JONES	PARKER SPORLAN	ROBERTA JONES @ PARKER.COM	C M	NO
Jay Madden	SOE	JAY.MADDEN@SOE.COM	Guest	NO
Chris Lesnar	Trane	clesnar@trane.com	Guest	No

Name	Affiliation	E-mail	Member (Voting, Corresponding, or Guest?)	YEA Member? (Yes/No)
Robert Squillace	Carel USA	Robert.Squillace@carel.com	Guest	NO
SHAWN OHARA	SMACNA	SOHARA@SMACNA.ORG	CORRESPONDING	
PAM ANDROFF	MITSUBISHI ELECTRIC	PANDROFF@HVAC.MEA.COM	CORRESPONDING	YES
Yunhua Li	Bes Tech Inc.	yli@bes-tech.net	Guest	NO



Shaping Tomorrow's  
Built Environment Today

TC Sign-in Sheet

Meeting Info: TC 8.7 Date: 6/30/14

Name	Affiliation	E-mail	Member (Voting, Corresponding, or Guest?)	YEA Member? (Yes/No)
Yvette David	Mitsubishi	yDavid@hvac.mea.com	Guest	No
Doug Tucker	Mitsubishi Electric	dtucker@hvac.mea.com	Guest	No
Henry Delgado	Mitsubishi Electric	hdelgado@hvac.mea.com	Guest	Yes
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Mike Stein	ETC	Mike.Stein@fujik.com	Guest	N

