

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

1791 Tullie Circle, N.E./Atlanta, GA 30329  
**404-636-8400**

**TC/TG/TRG MINUTES COVER SHEET**

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

DATE OF MEETING: Tuesday, January 25 2011, 3:30 PM to 6:00 PM

LOCATION: Pavilion 4, Hilton, Las Vegas

<b>MEMBERS PRESENT</b>	<b>YEAR APPTD</b>	<b>EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE</b>	<b>EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE</b>
Bob Jones		Alok Sing	Ramaz Afify
Paul Doppel	2007	SUM C.M. Hui	Heather Tullis
Brian Bogdan		Kirk Stifle	Andrew Moore
Chris Bellshaw	2007	Scott Frey	David Markusz
Ron Domitrovic	2010	Tim Young	Bob Skorupsy
David Heckler		Chiaki Okubo	Dermott McMorro
Oswaldo de S. Bueno		Bo Shen	Paul Delaney
Paul Solberg		Christopher Lee	Norm Maxwell
Arturo Thur de Koos		Anton Wolmarans	Dominic Kolandayan
		Mbem Schemzer	Vivi Koutsogianni
		Yasu Yushida	John Molnar
		Takauni Ochi	Steve Opromolla
		Kazuyashi Shinozaki	John Cummings
<b>MEMBERS ABSENT</b>	<b>YEAR APPTD</b>	Tamohiko Kasai	Istiaq Chisti
		Masakaza Sunada	Jun Furuta
		Richard Raustad	Brian Dougherty
		John Bade	Buddy Delaney
		John Vucci	
		Osami Katauka	
		Els Baert	
		Harshal Upadhye	
		Tom Bourquin	
		Bach Tsan	

## DISTRIBUTION

<i>All Members of TC/TG/TRG plus the following:</i>	
TAC Section Head: William Mcquade	<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

Paul D. called meeting to order, Feb 1, 2011, Pavilion 4 conference room

### 2. Welcome/Introductions

**Roster:** We are set up to have a specific # of voting members (11) 9 are present at the meeting & unlimited corresponding members.

Voting members on roster:

- (p) Chris B.
- (p) Ron D.
- (p) Oswaldo (International)
- (p) Paul D.
- (p) Dave H
- (p) Robert J
- (p) Paul S
- (p) Arturo
- (p) Brian B (LG)

To become a corresponding member—put your ASHRAE number on the attendance list being passed around & put CC next to your name.

### 3. Minutes Approval

Minutes were passed out.

Corrections or additions? None.

Motion to approve & 2<sup>nd</sup>

Passed 8-0-0 CNV

#### **4. Agenda Review/Updates**

Agenda—changes/deletions?  
Motion to approve agenda.  
Passed 8-0-0 CNV

#### **5. Chair's Comments (Doppel)**

Next mtg. June 25-29 2011

Winter:  
Chicago Jan 21-25, 2012

San Antonio  
June 23-28, 2012

Section 8 chairs breakfast meeting:

Proposed by ASHRAE—multiple disciplinary task groups to share info between TCs to address specific measures involving multiple TCs.

We don't currently have a membership subcommittee chair: Paul is asking for a volunteer? Dave Heckler volunteered as did Paul S. Paul S. will do it.

ASHRAE Google groups—for online collaborative space—post new info to the group.

Help wanted section of TC page of ASHRAE website. For help on ASHRAE topics, handbook, reviews, etc.

#### **6.0 Liaison Reports:**

Liaison to ASHRAE 15

John Bucci (on ASHRAE 15 committee) liaison to TC 8.7 was in attendance. Also liaison to TC 9.1, large buildings (Chapter 5 --large buildings also has a piece on VRF & would like to coordinate effort / language.

Aug 6, 2010 TC 8.7 met to discuss ASHRAE 15.

Discussions about permanent openings & egress—attempted to interpret  
Location of refrigerant piping

We came up with proposed re-writing & coordinated with ASHRAE 15 committee for a general discussion to learn their (ASHRAE 15) specific approach / meaning.  
If there is an event that causes a catastrophic leak causing people to have to evacuate, concern is that flowing refrigerant would prevent people from leaving a building-> thus no refrigerant piping in areas for egress.

Similar discussions about other topics—meeting was productive.

Where we are now: We need to come up with suggested wording/changes for areas of our concern / interest.

Need to educate ASHRAE 15 members on the details & operation of VRF & how refrigerant leakage may occur & how it would be released.

Was discussion within ASHRAE 15 about internationalizing standards...nothing concrete.

Discussion about A2L refrigerants & options for refrigerant dispersion with & without mechanical ventilation.

Dominic mentioned need for a TC 8.7 person to interface with those (ASHRAE 15) working on A2L refrigerant requirements.

## **7.0 Subcommittee Reports**

### Handbook (Doppel)

Drop dead date is July 31 2011 to submit the completed VRF chapter.

Current plan:

Revisions discussed at Handbook sub-com. Meeting will be made & sent to sub-committee members prior to a March 2 meeting in Dallas for the Handbook subcommittee. Further revisions at meeting & send vote to accept by sub-committee by April 30. Then mail out to full committee for review & vote at Summer meeting. Drafts will be sent to all members & corresponding members

Comment: TC 8-11 handbook (chapter Unitary Chapter 44) has a ½ page description of VRF & would like to include a reference to the new VRF chapter.

### Program:

For Montreal

Abstracts: Feb 14 deadline for Seminars & Forums May 6 for presentation upload to ASHRAE.

Program track:

refrigerants

HVAC Fundamentals

Net zero

Professional skills

Alternative energy

We would like to propose VRF heat recovery under HVAC fundamentals (Domitrovic Chair) Speakers: Chris B, Harshal, & Paul D??

Water cooled VRF also under Fundamentals (Dermot-Chair)

Other possible topics:

Large buildings VRF

Water cooled VRF also under Fundamentals (Dermot-Chair)

Chicago possible Topics:

Field performance of VRF (Dermot & Ron—papers)

Conference papers due April 18

Commissioning VRF (Andrew Moore)

Modeling (Dominic)

Standards (Chris B.)

None.

Webmaster (Dominic)

Website had to be changed from Task Group format to TC format—that is complete & website is up to date.

If anyone has research papers they'd like to post on the website, send to Dominic.

## **8. Old Business –**

At last meeting we discussed starting research topics...any thoughts on research topics? Previously suggested topic was refrigerant RCL?? No interest in that topic at this meeting. Suggested that once Handbook chapter is printed, we will focus on research topics. Research chair is Dunston M. (not at meeting).

## **9. Committee Status**

TC-8.7

## **10. New Business**

90.1 was approved last Jan. including VRF & was published in ~Sept. / Oct.

DOE is looking at ~April to react to the changes in 90.1 to incorporate into 10CFR part 431 (commercial buildings). This will get updated to reflect

ASHRAE 189.1—VRF is not included in it. We (TC?) tried to work through AHRI. Not everyone was in agreement & AHRI has some concerns with 189.1.

AHRI certification program. AHRI approved certification program proposed by manufacturers (1230).

By ~1<sup>st</sup> of April, certified numbers for VRF will be available on websites. DOE also has to get standard into 10CFR part 431.

## **11. Adjournment**

Next meeting in Montreal—June 2011.

Motion to adjourn—2<sup>nd</sup>—passed.