



**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; January 26, 2015

LOCATION: Chicago, IL

MEMBERS PRESENT	YEAR APPTD	EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE (Corresponding Members)	EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE (Guests)
Brian Bogdan		Chris Bellshaw	Bill Artis
Dermot McMorrow		John Cummings	Alison Williams
John Molnar		Doug Tucker	Laura Degitz
Arturo Thur de Koos		Andrew Moore	Jay Madden
		Kirk Stifle	Wei Wang
		John Vucci	Klint Leete
		Paul Delaney	Steven Faulkner
		Ron Domitrovic	Gualian Wu
		Paul Doppel	Kyoungrock Kim
		Chris Lesnar	Piljae Im
		Pat Riley	Dan Pettway
		Oswaldo de S. Bueno	Pat Goethel
MEMBERS ABSENT	YEAR APPTD	Shawn Ohara	Richie Mohan
Dave Heckler		John Bade	Chris Laughman
Bob Skorupsky		Stephen Duda	Chris Williams
Ishtiaq A Chisti			Duke Hung
David Markusz			Stephen Wage
			Hitoshi Hashimoto Howard Cheung Mark Alatorre

			Yvette Daniel Xiaobing Liu
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DISTRIBUTION

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

1. Call to Order

Brian called meeting to order.

4 voting members in attendance. Quorum!

We will increase to ~13 voting members as of July 1.

2. Welcome/Introductions

~42 people in attendance.

3. Minutes Approval

Move to accept minutes, 2nd. Approved—acclamation.

4. Agenda Review/Updates

5. Chair's Comments (McMorrow)

New process for adding corresponding members—on ASHRAE website as a “provisional” corresponding member. If you attend meetings you will stay on, else, you’ll roll off.

Adding email aliases for key people in TCs.

New standard website template coming from ASHRAE—should be simpler.

Thank you letters can be sent to employers—will occur in July/August.

Roster: Many new voting members will roll on, July 1. Typical term is 4 years.

Upcoming meetings

Orlando (winter 2016)

Seminar proposals due August 10.

St. Louis – June 2016

6. Subcommittee Reports

6.1 Membership

Steve Duda (TAC liaison)

6.2 Research

6.3 Standards & ASHRAE Learning Institute (ALI)

6.4 Webmaster

6.5 ASHRAE Learning Institute (Dermott)

6.6 Handbook (Doppel)

Committee met to go over progress on chapter re-write. ~5 people. Draft was sent out within TC + other key people. Comments were received. Most comments were accepted.

Area under safety: ISO standard 5149 was passed last year—managing refrigerants. It has incorporated VRF systems & 2L refrigerants. So, the concepts of 5149 were inserted into chapter handbook. Chapter authors felt this is a significant industry development. There are key differences between 5149 & ASHRAE 15:

Refrigerant leak rate is defined in 5149

Risk management is clearly laid out in 5149
5149 addresses A2L
Many others...

Comment: The language in the Handbook that sound like a “shot-across-the-bow” of ASHRAE 15. Some thought that an attempt should be made to reconcile ASHRAE 15 with 5149, prior to putting wording in the Handbook chapter.

Comment: Because it is an ASHRAE Handbook, it should defer to ASHRAE references, like 15 & not “insult” it by referring improperly to 5149.

Comment: 5149 is simply another reference—it is not being endorsed by the Handbook chapter. There are many other standards and other materials that are referenced, without being endorsed.

Comment: Paragraph should be modified to include language explaining the nature of local adoption of specific codes as governing.

Request to remove the last sentence in the Safety Considerations paragraph...beginning with “This new standard is...” (page 18). Also, use language on page 17 under refrigerant piping considerations to address the local codes issue under Safety Considerations.

Wording will be revised during the meeting & revisited later in the meeting...

Membership (Dermott)

A new roster was developed between Chicago & Atlanta. Dermott reviewed and listed new voting members.

8 new voting members

We had 7, 2 are rolling off, plus 8 new = 13 going forward.

Program (Bogden for Heckler)

We have an 11:00am program (Seminar 45) on considering VRF with ASHRAE 15 in mind.

Programs for the future. Brian is seeking a new Program Chair for future when Dave rolls off. Chris Bellshaw volunteered.

Suggestion for program: Commissioning of VRF?? (Bill Artis will lead) Attempt to submit for Orlando.

Program suggestion: Demand Response with VRF (Harshal Upadhye can lead—Ron D’s suggestion)

We need to study what strategy is successful for getting programs into the pipeline.

Research (John Molnar)

Work statement 1684. A manufacturer has done research. Working with TC 9.1 & Standard 15. Since work has been done privately, the feeling is that ASHRAE research dollars need not me spent on the same. Results will be made public through ASHRAE papers, etc. 1684 may get revised for new scope...John will work through details & keep us posted.

Comment: There may still be a need for ASHRAE to do duplicate research for the sake of independence and completeness per ASHRAE's needs. Or, do a review of the work as a 2ndary check.

Question: Is there a timeline for when any change to scope must be changed. Deadline October 2016, the work statement must be complete, or it will be dropped by ASHRAE.

Standards (Chris Bellshaw)

Refer to the liaison reports for standards updates

ASHRAE Learning Institute (Dermott)

We sent around a draft proposal for a 3.5 hour course prior to the winter meeting. The proposal has been approved by ALC:

Design & Application of VRF on Jan 24 at Orlando.

Need to submit final PowerPoint by August ~24. (Martin Craft of ASHRAE)

This course could become a permanent part of ASHRAE course offerings.

Dermott is looking for additional participants to help with preparation & instruction.

Webmaster—no update. Webmaster not present.

Chair is looking for a potential future webmaster.

90.1 Standard for Commercial Buildings

2015 Addenda supplement is on the ASHRAE website

-Approval of an addendum modifies the water source tables.

90.1 has approved higher VRF efficiencies effective in 2017 (these will be higher than the effective levels in 189.1, and thus IGCC). These will need to be justified.

189.1 No report

189.1 is planned to be the technical basis for IGCC

Section 8 liaison (Steve Duda)

Steve is rolling off as Section 8 head. New Section 8 head is Dustin Meredith. Steve will remain involved TC 8.7.

ASHRAE 15 (Doug)

Not considering substantive changes currently. Trying to minimize exceptions

They have an ad-hoc committee on 2L refrigerants.

Announced that residential requirements will be split off (15.2) Sub-committee is being formed.

Question: is there any discussion in 15 for specific technologies—VRF:

Answer: No, 15 is typically general & not technology specific.

62 (Doppel)

Adjusting language to be more code enforceable—they removed certain words to add clarity.

Confirmed the split between 62.1 & 62.2. 62.2 now applies to all places where people sleep.

They are looking to do a seminar to help explain the differences.

VRF is well positioned to have different operating characteristics for spaces with different purposes within the same building. It may be a good subject for a future program.

Back to Handbook Chapter...

The paragraph in question was re-written during the meeting.

Language was added to address the need to follow appropriate codes for a given jurisdiction having authority.

Some other minor wording adjustments.

Motion to approve the Handbook chapter with revisions (attached with tracked changes)

2nd

Vote: 4-0-0 approved

New Business:

Doppel—need to get IEER approved by DOE (rather than EER). Will work through AHRI.

Modelers (including ASHRAE 205) are eager to get VRF data.

There is a need to characterize overall system efficiency—not just single unit efficiency.

Recommendation from RAC to form an MTG on: Guidelines for Avoided Electric Generation...with Heat Pumps.

John Molnar is interested in being on the committee. (Ron too as a non-voting member)

Work Statement 1684—connecting spaces. ASHRAE 15 committee had rejected it.

Chris L. (Mitsubishi Electric research Labs) presented a paper on CFD analysis of refrigeration leaks. It accomplishes essentially what 1684 seeks to accomplish. Paper will be published for Orlando.

This work may be the starting point for future similar or extended efforts. May put together a work paper after the Orlando meeting.

Comments: Presentation by Chris L. was excellent!

Motion to adjourn

2nd

Approved