



ASHRAE TC8.7 Variable Refrigerant Flow Committee



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

1791 Tullie Circle, N.E./Atlanta, GA 30329

404-636-8400

TC/TG/TRG DRAFT MINUTES COVER SHEET

**TC 8.7 Variable Refrigerant Flow
Monday, Jan 30, 4:15 pm–6:30 pm
Caesars Palace Room Augustus V/VI**

MEMBERS PRESENT	YEAR APPTD	EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE (Corresponding Members)	EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE (Guests)

DISTRIBUTION

<i>All Members of TC/TG/TRG plus the following:</i>	
TAC Section Head: Dustin Meredith	SH8@ashrae.net
TAC Chair	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**

Chairman McMorrow called the meeting to order at 4:15 p.m.

2. **Welcome/Introductions**

Chairman welcomed everyone to the TC 8.7 meeting. Chairman especially welcomed new committee members and guests, and those visiting from international locations. Chairman requested all attendees to sign the attendance sheet, passed for circulation. Chairman went over the list of voting members. 6 voting members were present. Therefore, a quorum was present.

3. **Minutes Approval**

TC 8.7 voted to APPROVE: THE MINUTES FROM THE 2016 ST. LOUIS MEETING.

Mr. Bogdan mentioned that the member roster needs correction. Chairman McMorrow will review the member roster to ensure that it up to date.

4. **Agenda Review/Updates**

Chairman mentioned that the meeting agenda had been distributed to the committee members prior to this meeting. Chairman requested for any updates to the agenda. No updates were made to the agenda.

5. **Chair's Comments**

Paul Lindahl is the recipient of the Hightower Award for his contribution to TC 3.6 and TC 8.6 Joseph Hubler is the recipient of the Service to ASHRAE Research award. A technology portal has been made available by ASHRAE to access research documents. A peer review is taking place for Advanced Energy Design Guide for K-12 School Building. A draft is available on the ASHRAE website and is 65% complete. A new multi-disciplinary task group (MTG) has been established to cover the following topic: Air change rate and spaces. Several TCs are involved in this MTG. A new TC website layout has been released on the ASHRAE website. TC 8.7 website has been updated based on this new layout. A new manual for TC, MTG, and TRG has been released that consists of all rules and procedures for handling specific ASHRAE related activities. Chair training workshop took place on January 29, 2017. TC subcommittee chair training is taking place on January 31, 2017. Handbook training session took place on January 29, 2017. Remote participation in meetings is being implemented in ASHRAE meetings. TC 8.7 has not yet discussed the implementation of remote participation provision yet. There is a new category of membership: provisional corresponding member.

The professional development committee (PDC) is impressed by the interest shown on VRF education topics from the HVACR industry. If there are any ideas for VRF education, members are welcome to discuss at this meeting. PDC Chairman thanked the committee members for their effort on the past workshops. CEC seeks program tracks suggestion for the 2017 Annual Meeting

6. Subcommittee Reports

6.1 Handbook Chapter

Mr Doppel reported that the handbook chapter is in a good shape as the chapter was reviewed and updated in 2016. The next revision will take place in 2020.

6.2 Membership

Mr. McMorrow mentioned that It seems that there may be correction needed on the membership roster, specifically the number of voting members on TC 8.7.ASHRAE is developing a method for updating membership activities online. TC 8.7 has been selected as the trial committee. Research subcommittee chair has requested to roll off from this duty. Chairman requested for any interested members to participate in this role. Chris Laughman from MEUS requested to be considered for this role. ALI subcommittee chair position is open. Any interested members are requested to reach out the Chairman. Standards subcommittee chair position is also open for any interested members. Membership chair position is also open for any interested members. Chairman mentioned that the TC manual and procedures document consists of a brief summary of the role description. In addition, Chairman requested interested members to speak with the current subcommittee chairs for additional information.

6.3 Program

Mr Artis confirmed the Program Committee is planning on sponsoring a Long Beach, CA, program: Commission considerations for VRF systems. A potential program for ASHRAE (Chicago): Track on standards and guidelines pertaining to VRF systems. P. Doppel mentioned that a seminar is being held on AHRI 1230 and AHRI 1231 on January 31, 2017 in Room 232. Any interested individuals are welcome to attend. Potential program for future ASHRAE conferences: VRF systems in tall buildings. If anyone interested to participate in this program should contact B. Artis. P. Doppel and C. Bellshaw showed support to participate in this program. Chairman McMorrow went over the list of tracks for upcoming ASHRAE conferences. This list of tracks can be obtained from Chairman McMorrow. It was suggested to share ideas for potential topics for research seminars specific to VRF systems. Any interested individuals in suggesting these topics, can reach out to B. Artis. Another potential topic for programs: Energy Modeling for VRF and the tie-up with lifecycle costing

Section Head Comments

TC 8.0 section head Dustin Merideth visited the meeting and requested for any questions or updates for him. There were no questions.

6.4 Research -

Mr Molnar reported on the new Research Liaison for Section 8 Technical Committees is Curtis Eichelberger and provided an update on current ASHRAE research projects:

New Projects Awarded:

1806-RP, Flammable Refrigerants Post-Ignition Simulation and Risk Assessment Update; Responsible Committee: MTG.LowGWP (Lower Global Warming Potential Alternative Refrigerants); Proposer: Gexcon US. Estimated Duration: 12 months; Cost to ASHRAE: \$797,000

Projects Out for bid:

1721-TRP, Oil Return and Retention in Unitary Split System Gas Lines with HFC and HFO Refrigerants; Responsible Committee: TC 8.11 (Unitary and Room Air Conditioners and Heat Pumps); Co-Sponsors: TC 10.3 (Refrigerant Piping, Controls and Accessories), TC 3.4 (Lubrication); Estimated Duration: 24 months; Estimated Cost to ASHRAE: \$150,000; Status: Bidding now.

1785-TRP, Experimental Validation of Refrigerant Charge Models in Coils for Residential Split Systems; Responsible Committee: TC 8.11 (Unitary and Room Air Conditioners and Heat Pumps); Co-Sponsors: TC 8.4 (Air-to-Refrigerate Heat Transfer Equipment), TC 6.3 (Central Forced Air Heating and Cooling Systems); Estimated Duration: 30 months; Estimated Cost to ASHRAE: \$199,000; Status: Bidding now.

1806-TRP, Flammable Refrigerants Post-Ignition Simulation and Risk Assessment Update; Responsible Committee: MTG. Low GWP (Lower Global Warming Potential Alternative Refrigerants); Co-Sponsors: None; Estimated Duration: 12 months; Estimated Cost to ASHRAE: \$800,000; Status: Awarded 12/9/16 to Gexcon US

1807-TRP, Guidelines for Flammable Refrigerant Handling, Transporting, Storing and Equipment Servicing, Installation and Dismantling; Responsible Committee: MTG. Low GWP (Lower Global Warming Potential Alternative Refrigerants); Co-Sponsors: None; Estimated Duration: 6 months; Estimated Cost to ASHRAE: \$80,000; Status: Bidding now.

1808-TRP, Servicing and Installing Equipment Using Flammable Refrigerants: Assessment of Field-Made Mechanical Joints; Responsible Committee: MTG. Low GWP (Lower Global Warming Potential Alternative Refrigerants); Co-Sponsors: None; Estimated Duration: 6 months; Estimated Cost to ASHRAE: \$120,000; Status: Conditionally Accepted - Work with RL to clear conditions.

1794-RTAR, The Incorporation of Odorants in Refrigerants to Improve Leak Detection; Responsible Committee: TC 3.1 (Refrigerants and Secondary Coolants); Co-Sponsors: None; Status: Accepted w/comments. Work with your Research Liaison (RL) to review the RAC comments on RTAR before proceeding with the development of the project's work statement

6.5 Standards

Mr Bellshaw suggested that anyone wishing to keep up with ASHRAE standards can elect to receive notification on standards from the ASHRAE website. ASHRAE Standard 135, addendum bk is currently out for public review until February 6. Additional addendums are also out for public review under the purview of this standard. Guideline 33, ASHRAE 124, ASHRAE 138 have recently been released to the public.

6.6 ASHRAE Learning Institute

Mr McMorrow updated the group on the ALI developments two active ALI sessions: VRF Technology Introduction & VRF Design & Application Considerations. Any additional topics are welcome for consideration. Mr. McMorrow is willing to pass on the ALI liaison responsibility to any interested TC 8.7 member, and can be contacted after the meeting.

6.7 Webmaster

Mr. Thur de Koos reported the new template layout released for the TC website and the website is up to date and current.

7. Liaison Reports

7.1 Liaison to ASHRAE 90.1

Mr. Cummings reported the new ASHRAE 90.1-2016 version, 121 addendums were released; 89 addendums were applied through TCs; and only 49 had energy impact. Highest energy improvements were in school buildings; while the lowest energy improvements were in large offices, followed by high-rise apartments. ASHRAE 90.1 has determined a target of 40-45% improvement in energy, for the next version of ASHRAE 90.1. There is also a consideration of revisiting the VRF economizer requirements, and separating the indoor fan coil requirements.

7.2 Liaison to ASHRAE 189.1

Mr. Tucker reported that Consists of an VRF efficiency table. This table is less stringent than the ASHRAE 90.1-2016 efficiency table. Dick Lord has been tasked to update the mechanical efficiency tables of this Standard. Various committees (ASHRAE TC 8.7 and Ductless Equipment product section) are expected to be involved in providing input.

7.3 Liaison to ASHRAE 15

Mr. Doppel suggested getting a group together to prepare rationale to present to the SSPC 15 committee on establishing ASHRAE 15.3 committee (specific to VRF equipment)

7.4 Liaison to ASHRAE 62.1

Mr. Doppel reported on the re-organization of the standard, as well as drain pans, and IAQ requirements. In addition to 62.1, a liaison has been requested to monitor ASHRAE 62.2 activities. R. Mohan volunteered to attend ASHRAE 62.2 meetings and monitor the committee activities.

7.5 Liaison to TC 205

Mr Doppel reported that AHRI is currently working towards the adoption of VRF modeling into CBECC-Com. Once approved, an addendum based on the work completed on VRF can be added to ASHRAE 205P.

7.6 ASHRAE GPC-41:

Mr Doppel reported on a four hour working session on January 30, 2017. The development work is progressing and a working meeting has been proposed in conjunction with the AHRI spring meeting (first week of March). It is intended to complete the draft standard and present it to TC 8.7 for review.

7.6 MTG Low GWP Refrigerants:

Mr Tucker reported that TC 8.7 is in fact the member of the MTG.

8. **Guest Presentation**

Presentation on MTG work on low GWP refrigerants by Jim Wolf

9. **Old Business**

No other business was discussed during this meeting.

10. **Old & New Business**

No other business was discussed during this meeting.

11. **Adjournment**

There was a motion to adjourn and second. The meeting was adjourned at 6:30 p.m. after presentation Q & A.