

MINUTES

DRAFT / UNOFFICIAL

TECHNICAL COMMITTEE 8.7

2022 Annual Conference

June 27, 2022

Note: These draft minutes have not been approved and not the official, approved record until approved by the Technical Committee.



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

404-636-8400

DRAFT

TC/TG/MTG/TRG MINUTES COVER SHEET

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

TC/TG/MTG/TRG No. 8.7 DATE

TC/TG/MTG/TRG TITLE Variable Refrigerant Flow

DATE OF MEETING June 27, 2022 LOCATION Toronto, Canada

MEMBERS PRESENT	YEAR APPTD	MEMBERS ABSENT	YEAR APPTD	EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE

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

TAC Section Head:	SH8@ashrae.net Where x is the section number
All Committee Liaisons As Shown On TC/TG/MTG/TRG Rosters (Research, Standards, ALI, etc.)	See ASHRAE email alias list for needed addresses.
Mike Vaughn, Manager Of Research & Technical Services	MORTS@ashrae.net

1. Call to Order and Introductions

2. Minutes

- a. No minutes from previous meeting. Also, there are roster issues to be worked out, see below.

3. Chair Update

- a. ASHRAE will work to update the roster of officers and members, which will be effective 7/1/22.
- b. The chair missed the TC chair training breakfast but provided general updates on activities
- c. Prospective TC members should send their email with ASHRAE member number to ASHRAE staff if they cannot get an application online.

4. Agenda Review

- a. The TC approved the agenda as presented.

5. Sub-Committee Reports

- a. **Handbook:** Chris Williams reported that he is looking for candidates willing to be the Vice Chair of SGPC 41. This person would be expected to assume the Chair position after Chris rolls off. He stated that it would be beneficial for the new SGPC 41 Chair to also be the TC 8.7 Handbook subcommittee chair. Chris would be happy to mentor this person. Both Walt Hunt and Badri Patel expressed an interest.
- b. **Membership:** Madhav Kashinath was not present. ASHRAE is still working on roster issues and hope to have these resolved by July 1.
- c. **Programs:** Badri Patel reported that he is not receiving relevant information from ASHRAE because of the problems with the roster. For the 2023 conference, 9 different tracks are offered, and the TC is considering submitting a program, specifically application of VRF in cold climates. He has prepared a draft with objectives and will email it to the TC for review. The deadline for submittal is August 9. There is also a track for the conference related to refrigerants which may be of interest as related to VRF.
- d. **Webmaster** Badri reported that the process to upload documents has changed so now he can update the TC website. He is also looking for a volunteer to take over the position of TC webmaster.
- e. **Research:** Chris Laughman is open to ideas for new research projects. There is great interest and work being done on load-based testing for HVAC systems, such as CSA EXP07. Regulations are expected to go this route, but is it even possible for VRF? Improved modeling techniques for system performance may help but the challenge is to correctly capture and characterize the behavior of system controls. Most OEMs will not publish or release proprietary control algorithms, but a possible solution is technology focused on Energy Plus that allows connection of more dynamic equipment models into building models. One potential research project could involve a cloud- based demonstration of technology, a model of a VRF system in the cloud with IP controlled by the OEM. This would be closer to characterize a real-world system model, a proof of concept for architect/engineer, to determine energy use. The new version of Energy Plus will for the first time make it possible to integrate systems into a model of a building. Need buy-in from OEMs, need an RTAR, goal is to demonstrate the sort of system that could be used by OEM and energy advocates. This would cost approximately \$100k -\$200k. Kevin Frost indicated an interest in field study or some sort of way to correlate actual part load performance in lab or building. Modeling is only interesting if correlates to real world performance.
- f. **Standards:** Chandra Gollapudi.
 - i. UL 60335-2-40, 4th edition, is under recirculation ballot. If affirmed then it will be published soon.
 - ii. IAPMO is reviewing comments on the Uniform Mechanical Code. Report of comments is due in August and the annual conference will be held in September in Charlotte to vote on UPC and UMC. Over 200 comments, mainly on application of A2L refrigerants. ICC also has a similar cycle, but the 2024 codes are finished.
 - iii. The 2020 NFPA 70 (National Electrical Code) GFCI requirement has affected HVAC equipment. NFPA has discussed a delay until 1/1/2023, with a short-term fix to push to 2026 by referring

to the UL standard. Jeff Whitelaw reported that there are four tentative interim amendments (TIA) out for comment, each based on a different product type, which may determine whether all or certain types, such as variable speed systems, will be exempted.

- iv. ASHRAE 90.1: Doug reported that the 2022 edition will contain 100+ addenda. Addendum ay updated the VRF efficiency table with reduced EER values; one negative comment was received during public review, but the committee approved the addendum for publication. The table references AHRI 1230-2021 with an effective date of 1/1/2024.
- g. **ALI.** Brian Bogdan solicited volunteers to help with this. John Cummings and Walt Hunt will collaborate with Brian on an updated VRF training class. One specific area to update is standards and code compliance with UL 60335-2-40 and ASHRAE Standard 15. Other areas to update are efficiency testing changes with AHRI 1230-2021 and IEER/EER levels that are effective soon. This group would meet every quarter or so. Chandra expressed an interest.

6. Liaison reports

- a. ASHRAE 90.1: See above.
- b. ASHRAE 62.1: no attendee
- c. ASHRAE 205: Walt reported that the SPC is meeting tomorrow.
 - i. First draft coming this year, excluding VRF
 - ii. WGs have meet over the years; dissolved but getting back on track; has met twice so far
 - iii. Challenge: debating Energy Plus pathways being discussed for VRF
 - iv. 90.1 TSPR relationship: modeling pathway for qualification for a system
 - 1. WA State using TSPR but it is now included in 90.1 for inclusion by other states
 - v. AHRI: Each of the 4 Sectors to develop Systems Efficiency WG to work with different programs to help develop appendix for 205
- d. ASHRAE SGPC: 41:
 - i. One addendum is out for approval and then work on rewrite by year end; back in list of priority and likely roll into 2023 after 15 and others
 - ii. Created 2 working groups; plan to meet in Atlanta again with updates
- e. ASHRAE 189.1: no report
- f. ASHRAE 15:
 - i. Addenda l, m, and n: all approved and pending publication
 - ii. If you see anything that needs to be changed then write a CMP; committee meets monthly
- g. ASHRAE MTG.LowGWP: Short comment on meetings coming in next 2 days; encourage attendance

7. New Business:

- a. Shawn acknowledged that there are a lot of events on Monday evenings so it may be beneficial for the TC to meet earlier in the day since the current time may be impacting membership. He will review for the upcoming winter conference and see if it will be possible to meet from 4:00pm to 6:00pm.
- b. Chris Williams: Need to begin having Handbook meetings and discuss timing. He will discuss with Shawn and send out a Doodle poll for when we can meet to begin review starting from beginning; schedule every 2 weeks for 1 to 2 hours
 - i. Can be used for the ALI course
 - ii. Send Doodle poll to determine timing

- 8. **TAC Liaison:** Charlie Hank. Reminder on August 9 deadline to submit program abstracts for the upcoming winter conference. The TC also discussed the ongoing need to update our roster. TC chairs are to review by July 9 and if there are continued problems discuss with Tara at ASHRAE HQ.

9. Adjourn