



MINUTES

TC8.11 Unitary and Room Air Conditioners and Heat Pumps

**2020 ASHRAE WINTER MEETING
Orlando, FL**

**Monday, February 3, 2020: 4:15 – 6:30 PM
Location: Hilton Orlando, Lake Sheen**

TC8.11 Subcommittee Meeting – Sunday, February 2, 2020 3:00-6:30 PM
Location: Hilton Orlando, LL, Orange E

Minutes

- 1. Call to order Christensen

Meeting was called to order at 4:24 p.m.

- 2. Review Scope

Technical Committee 8.11 is concerned with products for use in comfort cooling and/or heating systems. The factory engineered vapor compression systems include: (1) unitary equipment which generally requires the field engineering of the product mounting and ducting, piping and electrical connections, (2) room air conditioners such as window mounted units and ductless split systems and (3) packaged terminal equipment. Specifically excluded are unitary combustion engine driven systems.

- 3. ASHRAE Code of Ethics Commitment Christensen

In this and all other ASHRAE meetings, we will act with honesty, fairness, courtesy, competence, integrity and respect for others, and we shall avoid all real or perceived conflicts of interests. (See full Code of Ethics: <https://www.ashrae.org/about-ashrae/ashrae-code-of-ethics>)

- 4. Introductions All
 - a. Determination of a Quorum Christensen

VOTING MEMBERS FOR THIS MEETING (Need 7 for a Quorum)

Chad Kirkwood-2020 (Present)	Dane Christensen-2020 (Present)	Kirk Stifle (Present)
Chris Stone-2022 (Present)	Darin Nutter-2021 (Present)	Henry 'Skip' Ernst-2021 (Present)
Sivakumar Gopalnarayanan-2020 (Present)	Jeff Warther-2022 (Absent)	Chad Bowers-2022 (Present)
Kishan Padakannay-2021 (Present)	Bo Shen-2021 (Present)	Dutch Uselton-2020 (Present)

- b. Quorum was met. 11 of 12 voting members present.
- c. Since last meeting 8 new provisional members have joined TC through the website request.

- 5. Agenda additions All
 - a. No additions

- 6. Chair's Report Christensen

- a. TAC has asked each TC to have a discussion about possibility of consolidating/merging 8.11 with another TC.
 - i. Idea to keep TC and collaborated on Research/Programs Subcommittee with other TCs
 - ii. TC 8.11 is a large TC and has high participation and thoughts is it effective as is.

b. Motion to maintain TC 8.11 as a standalone TC yet open to absorbing other TCs that have common interests Chad Kirkwood, Seconded by Darin Nutter. PASSED unanimously 10-0-0-1-CNV (chair not voting)

- i.
- c. ASHRAE has setup at this conference, a large dictated room/place for everyone to meeting without reserving a rooms

- 7. Liaison reports (as they arrive) Liaisons

- a. Refrigeration Committee
 - i. This committee will be changing their name. MTG.RAC.....Refrigeration Assessment Committee
 - ii. A dedicated track will be at every winter meeting called "Refrigeration and Refrigerants".
- b. Drew Welch agreed to be 8.11 liaison for RAC
- c. MTG – Low GWP Refrigerants Uselton

- i. AHRI Task Force
 - ii. Currently there is a big push to educated code officials

- 8. Approval of minutes from Kansas City Christensen
 - a. **Motion to approve Kansas City draft minutes, Henry 'Skip' Ernst Seconded Sivakumar Gopalnarayanan by. PASSED unanimously 10-0-0-1-CNV (chair not voting)**

- 9. Membership/Roster Berg
 - a. Grant Wheeler volunteer to be voting member
 - b. Jon Winkler volunteer to be voting member
 - i. An arm wrestling match will be scheduled between these two distinguished gentlemen to determine which will have the opportunity to roll on to the roster as a VM.

- 10. Subcommittee reports Grant Wheeler
 - a. Programs
 - i. 2020 Summer Austin (Programs due Feb 10)
 - 1. Fundamentals & Applications
 - Update on current research from TC 8.11 (Presenters: OSU)
 - 2. HVAC&R Systems and Equipment
 - CCHP (Initiated by: Grant Wheeler, Presenters: Don Shirey, Bo, NRCAN, NEEA, NEEP, Carrier)
 - 3. Research Summit
 - 4. Professional Development
 - 5. Grid-Interactive Efficient Built Environment
 - HVAC & GEB (Initiated by: Grant Wheeler, Presenters: Don Shirey, NREL)
 - 6. Multifamily and Residential Buildings
 - Residential storage and generation
 - 7. Resilient Buildings and Communities
 - 8. Zero Energy Buildings and Communities: Opportunities and Challenges
 - 9. Building Myths
 - Air Source vs. Ground Source (Initiated by: Dane Christensen)
 - ii. 2021 Chicago (Programs due July 10?)
 - 1. HVAC Fundamentals & Applications
 - 2. Systems and Equipment
 - 3. Refrigeration and Refrigerants
 - Low GWP refrigerant benefits vs. consequences (Initiated by: Dutch Useton)
 - 4. Environmental Health through IEQ
 - 5. Building Performance and Commissioning for Operation and Management
 - 6. Energy Conservation
 - 7. International Design
 - Global HVAC system performance (Initiated by: Chao Ding LBNL)
 - i. Standards, Guidelines and Codes
 - ii. ASHRAE Standard 37 Update (Initiated by: Chris)
 - iii. Ideas
 - 1. Load-based testing (Initiated by: Grant Wheeler, Presenter: Chad Kirkwood, AHRI)
 - 2. OSU and Purdue to do a Conference Paper Session in Chicago
 - b. Research Eric Berg
 - i. Highlights from Research Chair Breakfast
 - 1. Only 2 RTARs considered at the last RAC meeting
 - 2. 49 Active Research Projects ongoing
 - 3. 11 WS considered at the last RAC meeting

4. ASHRAE sent out a Survey but very little response back. ASHRAE plans to resend out the survey.
 5. Asking everyone serving on a PES or PMS to attend training.
 - PMS and PES training will be available at one of fall and/or spring meeting as well as a webinar on the ASHRAE website.
 6. New work statement template is now available on basecamp.
 7. ASHRAE is working on a new Research Strategic Plan
 - Looking for people to serve on this planning panel.
 8. ASHRAE has started putting all RP-WS information (cost, project length, etc.) into a database to help PMSs on RP WS generation and bid selection.
- ii. Current 8.11 RPs
1. RP-1645
 - Completed.
 2. RP-1705
 - Report is already published and ASHRAE members can download the report by logging in and searching the ASHRAE technology portal for RP-1705.
 - <https://technologyportal.ashrae.org/>
 3. RP-1721
 - Presentation on project status/update given in sub-committee meeting in Orlando
 - i. Data has been generated for past several months now
 - ii. Initial testing with R134a is completed
 - iii. Currently they are moving on to R410a and planned to do testing on two more Refrigerants along with different tube diameters
 - iv. They have also add a buffer tank after the 2nd oil separator to provide a time buffer to allow for more stable data collection.
 - v. They are asking for a 1yr No Cost extension with an expect project completion Jan 2021
 - **Motion was made to grant a 1 year no cost extension, Chad Kirkwood. Seconded by Dutch Uselton. PASSED unanimously 10-0-0-1-CNV (chair not voting)**
 4. RP-1733
 - Presentation on project status/update given in sub-committee meeting in Orlando
 - i. Chad Kirkwood comment that good progress has been made to this point on this project.
 - ii. Initial CFD Analysis has been completed and Experimental testing has started.
 - iii. Likely requesting a 1 year extensions
 5. RP-1743
 - Presentation on project status/update given in sub-committee meeting in Orlando
 - i. Original Student Graduated and a New Student continuing the project on.
 - ii. Issue with test room has been resolved and repaired; expect to start testing mid-July-19
 - iii. They have done preliminary leak testing on their test duct setup and have achieved less than 1% leakage rate.
 6. RP-1785
 - Presentation on project status/update given in sub-committee meeting in Orlando
 - i. Details on the test setup and coil test holder along with diagrams and pictures were presented.

- ii. PI has proposed/developed a method to measure the internal volume of the test sections. This method of measurement uses the idea gas law much the same way a pycnometer measures density.

7. RP-1824

- WS was approved by RAC and is going out for bid in October.
 - i. RAC suggested extending RP length from 18 months to 24 months.
- John Winkler agreed to be chair of the PMS
- Received 2 Bids and PMS has Recommendation
- **In an executive session after the main TC meeting a Motion was made to Move forward with the PMS recommended bidder. PASSED unanimously 10-0-0-1-CNV (chair not voting)**

iii. Ideas

1. New Idea

- Load Base Testing Method of Test
- Latent Load at off design conditions
- Development on a model for climate optimized design tool.
- Good conversations about new ideas but no real clear directions.
 - i. Dane to call a intern web meeting to continue conversation

2. Room Stratification Impacts on Psychrometric Testing

- Scott Karmer had WS ready and has submitted to Eric Breg.
- Eric plans to review WS with our Rack Liaison first then send it out to TC 8.11 members for letter ballot.
- Got comments back from RAC Liaison which need to be addressed
- Not a lot of progress made since last meeting and still a work in progress

3. Filtration in Mini Splits and VRF System

- Lead by TC 2.4 and Tom Justice
- No progress to report

4. New 41.2 has been released, would like to compare the effects of the results based on the difference between this release, older versions, and ASHRAE 37

- Eric brought up topic with RAC liaison at Research Chair Breakfast.
 - i. RAC seems not interested. Stance is the New Standard has already been released.
- Within 8.11 members still seem to have concerns about this and it was proposed to go straight to a WS.
- Chad K. plans to bring up this topic for more discussion and action in SPC 37 meeting.

5. Oil Retention in MC HX

- Chad Bowers working on RTAR
- This is a co-sponsor opportunity with TC 8.4
- About 80% done.
- No Progress since Atlanta.

6. Cyclic test result correlation based on unit design/configuration

- No action at this point



TC 8_11 Research
Summary.xls

- c. Handbook Bob
 - i. Currently our TC has two chapter submitted for publication one up for review.
 - 1. Up for review is Chapter 1 in Applications

 - d. Standards Chris Stone
 - i. ASHRAE 221p
 - 1. They rejected most of the comments made during public review #2
 - 2. They are planning on going out for 3rd public review soon.
 - ii. ASHRAE 16 has combined with ASHRAE 58
 - 1. Released in 2016
 - 2. Plan to vote on reaffirmation or open for edit at Orlando meeting. Will circulate material prior to Orlando Meeting.
Motion to open 16 Standard to be Revised, Chris Stone. Seconded by Dutch. PASSED unanimously 10-0-0-1-CNV (chair not voting)
 - 3. Chris and Byron to reach out to people on 37 to help with the revision to this Standard as
 - iii. SSPC 205
 - 1. Nothing new to report
 - iv. ASHRAE 37
 - 1. Currently going through a major revision
 - 2. Combining 37 and 116
 - 3. APR Expected: 2019
 - 4. Plan to reaffirm with formatting changes in Orlando
 - v. ASHRAE 137
 - 1. Reaffirmed 2017
 - vi. ASHRAE 206
 - 1. Reaffirmed 2017
 - vii. SPC 213p
 - 1. Nothing new to report
 - viii. AHSRAE 41 series
 - 1. Multiple ASHRAE 41s are in the revision state.
 - 2. Chris Stone encouraged TC members/attendees to get involved with the SPCs for the 41 series standards
 - 3. New SPC 41.13 opened and meeting now
 - ix. ISO
 - 1. Multiple ISO Standards relevant to this TC are very active.
 - 2. Chris Stone encouraged TC members/attendees to get involved with the Standards
 - x. **Motion to Reaffirm 116 Standard to be Revised, Chad K. Seconded by Su. PASSED unanimously 10-0-0-1-CNV (chair not voting)**

 - e. Website Darin Nutter
 - i. "Up to date"
11. Awards
- a. Chair would like for ideas on who from our TC can be submitted/nominated for awards
12. YEA
13. Old Business
- a. None
14. New Business

- a. None
15. Adjournment
- a. **Motion to adjourn.**
 - i. Meeting was adjourned at 6:22 p.m.