

Minutes
2016 ASHRAE ANNUAL MEETING - St. Louis, MO

TC8.11 Unitary and Room Air Conditioners and Heat Pumps

Monday, June 27, 2016: 4:15 – 6:30 PM

Location: 221 (2)

TC8.11 Subcommittee Meeting – Sunday, June 26, 3:00-5:00 pm – 223 (2)

Sponsored Program – none at this meeting

Minutes

1. Call to order Berg
 - a. Meeting was called to order at 4:16 p.m.

2. Introductions All
 - a. Introductions were made, concluding at 4:20 p.m. Good attendance at this meeting.

3. Determination of a quorum Berg
 - a. **Quorum was met. 11 of 11 voting members present**

4. Announcements and Highlights Berg
 - a. Highlights from Chair's Breakfast:
 - b. Two new MTGs – impact of energy & performance... <insert info from Eric>
 - i. Email aliases are now open for each TC – in case you don't know names of the officers of other TCs. Lots of good info on ASHRAE.org site. For our TC, the follo
 - ii. ASHRAE has assigned new email aliases for subcommittee chairs
 1. Chair: TC0811@ashrae.net
 2. Vice Chair: TC0811.vch@ashrae.net
 3. Secretary: TC0811.sec@ashrae.net
 4. Handbook Chair: TC0811.hbk@ashrae.net
 5. Program Chair: TC0811.pro@ashrae.net
 6. Research Chair: TC0811.rec@ashrae.net
 7. Standards Chair: TC0811.std@ashrae.net
 8. Webmaster: TC0811.web@ashrae.net
 - iii. New ASHRAE code of ethics – see site
 - iv. Option to have subcommittee calls prior to the on-site Meetings. Our subcommittee response was negative yesterday – concerns were raised that the dialogue & attendance in conference calls may be less effective than in person.
 - v. CEC call for reviewers – email Tiffany Cox if you are interested in being a reviewer.
 - vi. ASHRAE is interested in ideas for new courses – if you have ideas let Eric Berg know.

5. Agenda additions All
 - a. Dutch Uselton: AHRI/ASHRAE/DOE refrigerant joint funding report will be offered. Refer to Research (below)

6. Liaison reports (as they arrive) Liaisons
 - a. MTG.LowGWP refrigerants. Dutch Uselton agreed to attend
 - b. MTG.ASEC – our Liason, Van Baxter, gave the following update: This Multidisciplinary Task Group on Avoided Source Energy Consumption was established to revise a work statement being prepared for RTAR 1752, entitled: "A Guideline for Calculating the Avoided Source Energy Consumption Due to Waste Energy Recovery (WER) and Heat Pump (HP) Technologies".

WS Executive Summary: This work statement describes the needs, benefits, potential impacts, suggested approaches, and expected deliverables for the development of a Guideline for Calculating the Avoided Source Energy Consumption Due to Waste Energy Recovery and Heat Pump Technologies. The goal of this project is to develop a set of guidelines to quantify the avoided source energy consumption resulting from applications of waste energy recovery and heat pump (WER&HP) technologies. Such guidelines are crucial for wider adoption of the WER&HP technologies. These guidelines should include both residential and commercial applications.

A copy of the work statement as submitted to RAC on May 24 is attached for TC 8.11 members' information and comment. Please send feedback to Van.

7. Approval of Minutes from Orlando Berg

A few minor additions/edits were requested.

Motion to approve Orlando draft minutes, with those amendments, by Ray Rite.

Seconded by Byron Horak.

PASSED unanimously 10-0-0 CNV (chair not voting).

8. Membership/Roster Berg

a. Roster updated after last meeting. Eric reviewed & found changes to be correct.

b. C. Messmer replaces E. Berg as chair

c. D. Christenson replaces C. Messmer as V. Chair

d. Luis Escobar replaces D. Christensen as Secretary

e. E. Berg replaces D. Schuster as research chair

9. Subcommittee reports

a. Programs Kevin Mercer

i. No programs this meeting

ii. Aug 8 is deadline for Las Vegas seminar abstracts

iii. Sep is deadline for Long Beach conference papers

iv. Ideas:

1. Seminar planned for Las Vegas: Summary of DOE new rule

- Potential speakers: AHRI Rep, DOE Rep, Energy Advocate, Utility Company

- Potential chair:

2. Steven Brown (co-editor of science in the built environment) emailed to request that we cosponsor overview of low-GWP refrigerants along with TC1.1, TC1.3, and TC3.1 – vote to be conducted once we know more.

3. Lorenzo (Auburn) is organizing a 2018 Winter Conference mini-conference on system field performance (4-5 seminars & 3-4 conference paper sessions on fouling, frosting, etc.)

4. How can we improve ratings metrics and test methods to result in / showcase “good controls”?

5. Reduction of uncertainty of psychrometric testing

6. Codes: ventilation

7. Connected home products – can it be leveraged for better EE & comfort? Potential: home automation expert / IT?

8. Conference paper on RP1608 Load based testing? (Lorenzo) – should land in “research track” of future meeting

b. Research Don Schuster

i. See Research Subcommittee Report

ii. Notes from research meeting breakfast

iii. RTAR comments must be readdressed and notes provided on how they were addressed. Also, cosponsoring TCs have not been sufficiently involved in this revision process. Ray notes that RAC emails do not go out to cosponsoring TCs so only primary TC gets the comments.

iv. Any voting abstentions or negative votes should have reasons provided.

- v. Updated PMS/PES training materials are being approved soon and should be posted online after this conference.
- vi. New progress reporting materials is going to be required soon.
- vii. Research database is now online with 250 projects – more to be added.
- viii. \$2.5M cooperative effort between ASHRAE, AHRI and USDOE on low-GWP refrigerants. Expected that most of this ASHRAE-funded research will be defined by Low GWP MTG (multidisciplinary task group). Any further needs have opportunity through RTAR.
Report from Dutch: AHRI has Research & technology committee. There is movement toward Montreal-protocol-type phase-down of HFCs. Low GWP alternative refrigerants for air-conditioning are all A2L (mildly flammable). AHRI includes refrigerant and equipment producers; discomfort for refrigerants being removed without “way being paved” for new refrigerants. In April last year a “Flammable Refrigerant Subcommittee” was formed. Worldwide survey issued to poll experts regarding unmet research needs for A2L refrigerants. 158 suggestions received. After filtering and condensing – 40 prime suggestions were prioritized by urgency and importance. AHRI sought co-sponsorship from other organizations. Codes may need to be changed to permit flammable refrigerants, and equipment designs must be changed. Research needs transferred to AHRTI for development and funding. In April 2016 this gelled. AHAM is interested. White House Council on Environmental Quality helped get ball rolling. What’s happening now? ASHRAE is contributing \$1.2M for this research. AHRI has committed \$1M. USDOE is contributing \$3M (total of \$5.2M). Top 6 priorities are already in progress or about to be sent for bid – this is moving fast:
 1. Benchmarking risks from real-life leakage (UL)
 2. Establish baseline for ignition temperatures from hot surfaces for A2L refrigerants
 3. Use CFD information from A2L refrigerant dispersion to verify/contradict schemes for charge limitation on mildly-flammable equipment & verify mitigation schemes for periods when refrigerant charge cloud has not sufficiently dispersed
 4. Leak sensors & detectors for A2L refrigerants/equipment
 5. Assessing post-ignition risk of these refrigerants
 6. Guide for handling, installing & maintaining A2L equipment and refrigerants

Priorities 1-5 are underway; #6 work statement is in development. OEMs may have someone already participating in this. To get more information, contact AHRI.
- ix. Completed Research: RP 1608 final report was submitted for review and approval.
- x. Active Research: Two work statements have been submitted:
 1. WS-1721 – oil return & retention in unitary system return & gas lines – return to committee addressing issues in first submittal. Submitted to RAC; Accepted with conditions
 2. WS-1785 – refrigerant charge modeling in residential coils - work statement submitted to RAC; PES informed. Accepted with conditions
 3. WS-1733 – develop design criteria for psychrometric sampler and mixing apparatus for use in ASHRAE testing standards - must be submitted by August 15, 2016.
 4. WS-1743 – effect of inlet duct and damper design on inlet pressure measurements – currently a work statement. Was approved by letter ballot – 3 bids received; need to be reviewed by the committee. Appendix M may remove the need for this research; pushed back to SPC-37 to reevaluate whether this is still needed and/or should be rescoped.
 5. No RTARs submitted since last meeting.

6. RP-1645 (cosponsoring with TC 8.4) – research study to compare microchannel heat exchangers. Seems to be moving along pretty well. Should complete by March 2017. Rusty gave a brief report of initial progress.
7. TRP-1705– investigation of air-side corrosion tests on outdoor HXs – January was first meeting. Hugh gave a brief update.
- xi. New Research Ideas: SPP-37 contributed several topics of interest.
 1. Cyclic test result correlation based on unit design configuration; Dutch & Vance may work on RTAR
 2. Code tester nozzle test evaluations (on hold until 41.2 updated)
 3. Barometric Pressure & Dewpoint specification rather than WB/DB. RTAR in development and may be ready to submit to RAC soon.
 4. Temperature measurement device evaluations / chilled mirror & other psychrometers.
 5. Room stratification impacts on testing – draft RTAR in the works
 6. Cosponsor requests:
 - Effects of airflow contaminants (CO₂, VOCs, refrigerants, etc.) on psychrometric properties – TC1.1 & SPC 2.13p
 - Unsolicited from AHRI – emissions from unitary equipment
 - MTG on low-GWP refrigerants will have a research subcommittee
 7. Discussion on RP-1581; form keeps getting lost. Don will follow up again.

c. Handbook

Ray Rite

- i. HVAC Systems & Equipment: CH 49 & 50 were published! Thanks to everyone who reviewed. These will come up again Summer 2018 to begin next revision.
- ii. HVAC Applications: CH1 – 2019 version; begin reviewing next meeting.
- iii. Coming soon: If you are a member or corresponding member, Basecamp access to all chapters will be available for editing the chapters online (similar to Wikipedia). Outside experts can also apply to be added. <https://authoring.ashrae.org> ← must use Internet Explorer
- iv. Dutch recommended that Communicating Controls section, and images, should be updated.
- v. To access your handbook online: just type “Handbook Central” into the search bar

d. Standards

Chris Stone

- Chris Stone provided an update on the standards relevant to TC 8.11 – a detailed summary is in the attached Standards Report. Brief summary:
- i. ASHRAE 16 and 58 have been combined into one document; it was being processed for publication!
 - ii. ASHRAE 58 – will need to be withdrawn at some point in the future, once the new standard is published and references can be updated.
 - iii. ASHRAE 37/116 - revision of this combined standard continues. 37 was reaffirmed previously; 116 will need to be reaffirmed today.
 - iv. ASHRAE 137 desuperheater water heater - TC 6.6 - no activity required.
 - v. ASHRAE 206 - integrated heat pumps – was reaffirmed previously
 - vi. SPC 213p – meets tomorrow 8am. TC1.1 is prime sponsor; 8.11 is cosponsor. Chair will change to Vikrant Aute.
 - vii. SSPC 41: Many standards
 1. ASHRAE 41.1, temperature measurement, was reopened and meets tomorrow
 2. Many other ASHRAE
 3. ASHRAE 41.9, refrigerant mass flow measurement, is in revision
 4. ASHRAE 41.10, refrigerant flow with flow meters; is in revision

- 5. ASHRAE 41.12, uncertainty, committee disbanded with recommendation to refer to ASME PTC19.1. The scope could be revised and this committee reopened. Creating examples for other committees is under consideration. PTC19.1 could replace ASHRAE Guideline 2.
- viii. Rusty: ASHRAE Std 15.2 safety standard for residential refrigeration systems: goal is to have an advisory document for public review by January. Publication target is public review Summer 2017 and final publication in ~18 months in order to hit the next code revision cycle.
- ix. General update on ISO: working groups' activity was briefly discussed. 18326 (MOT for portable air conditioners) is out for committee draft. Meetings for WGs 3, 10 and 12 will occur at AHRI in October (week of 14th) if anyone is interested in participating. Three standards will go out for review later this year.
- x. Reaffirmation of ASHRAE Standard 116
Motion by Byron, seconded by Craig. Passed 8-0-0-cnv

- e. Web site Darrin Nutter
 - i. New website is live.

10. Old Business
a. None

11. New Business
- a. RP-1608 final report:
 - i. PMS unanimously recommended that the committee to accept this report.
 - ii. Vote to accept the RP 1608 final report.
Motion: Chris Stone, seconded Craig. Vote: 7-0-1-cnv (Dane Christensen abstained)

12. Adjourn
Motion to adjourn. Passed 7-0-1-cnv
Meeting was adjourned at 6:04 p.m.