



## DISTRIBUTION

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### 1. Call to Order

Chairman Bogdan called the meeting to order at 4:18 p.m. Members and guests introduced themselves. There were 11 members in attendance out of 13. A quorum was present.

### 2. Welcome/Introductions

Members and guests introduced themselves at the beginning of the meeting.

### 3. Minutes Approval

Upon motion made and duly seconded, TC 8.7 unanimously voted to approve the Winter Conference, January 2016 meeting minutes.

### 4. Agenda Review/Updates

No updates were made to the agenda.

### 5. Chair's Comments

Chairman Bogdan reported on the announcements made at the ASHRAE Chairman's breakfast meeting and reminded that members should follow the ASHRAE code of ethics in all meetings. Chairman Bogdan also welcomed new guests to TC 8.7 meetings and encouraged active participation in all TC 8.7 related discussions. The member roster will be shortly online on the ASHRAE website, and a separate email address (and outlook access) will be provided to ASHRAE TCs for communication. Chairman Bogdan also mentioned that a three strike policy has been implemented across all ASHRAE committees to ensure that minutes are uploaded on the ASHRAE website after the meeting occurrence in a timely manner. Thank you letters can be sent out to the employers of members. Please contact Chairman Bogdan for additional information on obtaining these thank you letters. There exists a form

to fill the potential sources for bias to ensure that balance and integrity is maintained within the ASHRAE committees.

## 6. Subcommittee Reports

### 6.1 Handbook Chapter

Mr. Doppel reported that the handbook chapter has been updated and published, and thanked those members who participated in the revision of the handbook chapter.

### 6.2 Membership

Mr. McMorrow mentioned that there is a new roster format being implemented and will be online shortly. There are 13 voting members.

If there is any interest to join the TC 8.7 membership, please contact Mr. McMorrow after the meeting.

### 6.3 Program

Mr. Ardis? reported that a program was submitted for ASHRAE's consideration but was not approved. The Program committee will work towards setting up a program for the Long Beach meeting. TC 7.3 will be reached out for co-sponsoring of the program.

Potential upcoming program presentation topic: A presentation on sequence of operations from different types of VRF systems.

Mr. Doppel mentioned that GPC 41 proposes to conduct a workshop in Las Vegas, NV, and will request for ASHRAE 8.7's co-sponsorship. Topic for this workshop will be: Outline of Design, Installation, and Commissioning for VRF Systems. Mr. Doppel also mentioned that a program on VRF in Passive Buildings (Seminar 51) is being held concurrently with the 2016 ASHRAE summer meeting (St. Louis).

Members discussed TC's interest in conducting a conference paper session in Long Beach, CA. Conference paper abstracts are due on August 29, 2016, and the conference papers are due by December 9, 2016.

TC 6.3 Program Subcommittee proposes to hold a program on: Comparing and Contrasting mini-split and ducted systems. Sub-topics include: Comfort level, field testing, American-designed vs. Foreign-designed systems. Pamela Duffy and Paul Doppel volunteered to take part in this program. Chairman Bogdan will share additional information after the meeting.

Members suggested that AHRI Ductless Equipment product section present a seminar on AHRI Standard 1230/1231P revisions and development work.

### 6.4 Research

Members discussed possibly renewing interest in ASHRAE WS-1684 based on the recent developments on A2L refrigerants in the industry. Members agreed on taking another approach at the RTAR for WS-1684. Chris Williams mentioned that Bill Hansen has some formulas to make calculations relevant to this RTAR and will share the contact information with [Research Chair] after the meeting.

### 6.5 Standards

AHRI Standard 1230: Chairman of the Ductless Engineering Committee Technical Committee (EC TC), Mr. Doppel, reported that the EC TC is diligently working to revise AHRI Standard 1230. The Committee's goal is to update the Standard by 2016, prior to the upcoming DOE's review of its rulemaking on VRF equipment. Major revisions include aligning AHRI 1230 with the latest revision drafts of AHRI Standard 210/240 and AHRI Standard 340/360, and developing a guideline for testing of VRF systems for third-party certification program testing.

AHRI Standard 1231P: Chairman of AHRI Standard 1231P Working Group, Mr. Doppel, reported that AHRI has been developing a new version of AHRI Standard 1230, consisting of an internationally based IEER equation and new outdoor ambient testing temperatures based on international applications. Chairman Doppel further noted that we are waiting on the Ductless EC TC to complete their revisions to AHRI Standard 1230 (expected to be completed in another 1-2 months). Once completed, the revisions will be copied into AHRI draft Standard 1231P. The updated version of AHRI draft Standard 1231P will then be circulated among the membership for final approval. In the meantime, AHRI held a seminar on AHRI Standard 1231P in Beijing, China, in April, 2016. The seminar was well received by manufacturers and other VRF stakeholders from Asia.

## 6.6 ASHRAE Learning Institute

Mr. McMorrow updated on the ALI developments and reminded that the ALI is a good window to educate on VRF systems. Mr. McMorrow added that the course topics for Las Vegas have not been defined yet, and whether they will be fundamentals based or application based. 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 that the webpage is up to date using the new format.

# 7. Liaison Reports

## 7.1 Liaison to ASHRAE 90.1

Mr. Cummings reported that ASHRAE 90.1 -2016 will be published on October 14, 2016. This version will be a single columned, I-P and SI version. This modification took 1.5 code cycles to implement and a lot of effort has been put into the revision. Regarding VRF, addendum bs was presented to the ASHRAE 90.1 mechanical subcommittee in 2015, and has been tabled since then due to comments received by the DOE during the public review stage. The comment was against the introduction of the new EER metric. The committee left the EER in the previous version and added IEER.

There will be a future proposal for adding commissioning checklist into ASHRAE 90.1.

## 7.2 Liaison to ASHRAE 189.1

Mr. Tucker reported that the current edition is from 2014. For the 2017 version, the committee has taken the action to review all of the addenda from 90.1 and compare the efficiency tables shown in ASHRAE 90.1 and ASHRAE 189.1. ASHRAE 8.7 and/or AHRI Ductless Equipment section should review the efficiency levels and make recommendations ASHRAE 189.1 Chairman, accordingly.

## 7.3 Liaison to ASHRAE 15

Mr. Tucker reported that ASHRAE 15 is undergoing a complete rewrite of the Standard (purely editorial). The Standard is expected to be released later in 2016. ASHRAE 15 is also handling the coverage of 2L refrigerants in the Standard. Proposing a charge limit of 92 lbs, and adding ventilation requirements (based on IEC 62-240). Mr. Tucker will notify TC 8.7 members once the public review has been initiated.

ASHRAE 15.2 was developed in 2016. Rusty Tharp (Goodman) is the chairman of this committee. The SPC has met numerous already, and the APR is expected to be released by the end of 2016. The intent is to present the Standard for the 2121 YMC & UMC-2017 versions.

Members agreed to review the upcoming new ASHRAE 15-2016 standard in group and submit comments (individually and TC 8.7 as a whole), to ASHRAE SSPC 15.

#### 7.4 Liaison to ASHRAE 62.1

Mr. Doppel reported that the new organizational structure includes: Administration, Research, Ventilation, Building Systems and Equipment. ASHRAE 62.1 is proposing a guideline on indoor air quality (TPS has not yet been shared). Any interested members can reach out to Mr. Doppel to join the guideline development work.

#### 7.5 Liaison to TC 205

Mr. Doppel reported that AHRI contracted NORESKO (an outside consultant) to incorporate simulation based compliance into the CEC compliance manager, CBECC COM, for VRF products. The final report and compliance tool is now ready and will be presented to the CEC in July, 2016 for inclusion in their CBECC-Com. It can take up to 6 months before CEC adopts the compliance tool. This is in relation to the ASHRAE 205P work.

#### 7.6 ASHRAE GPC-41:

Chairman Doppel reported that the first meeting was held in St. Louis, MO. Mr. Doppel requested for new members to join this committee, especially from non-producers sectors of the industry. The final draft is intended to be released for public review by January, 2018.

### 8. **Old Business**

### 9. **New Business**

Chairman Bogdan mentioned that multiple negative feedbacks have been received on the ASHRAE headquarters tours. Some of these tours have been skewed towards ground-water heat pumps and negatively targeting VRF technology. Mr. Reihl mentioned that he will be closely working with the ASHRAE Professional Development Committee and will take a closer look into the negative comparison of VRF systems during ASHRAE tours and instruction classes.

On behalf of ASHRAE TC 8.7, Mr. McMorrow thanked Chairman Bogdan for his leadership during his chairmanship of ASHRAE 8.7.

### 10. **Adjournment**

There was a motion to adjourn and second. The meeting was adjourned at 6:15 p.m.