



**TECHNOLOGY COUNCIL**  
Fall Meeting Webinar  
Friday, November 1, 2019

*NOTE: These are not the official minutes until approved by Technology Council*

*All reports noted in the minutes can be found on Basecamp at [Tech Council/Docs and Files/Meetings/2019\\_11\\_01 Technology Council Fall Meeting](#)*

**Motions**  
**Technology Council Fall Webinar**  
**Friday, November 1, 2019**

MOTION	DESCRIPTION
M1	Technology Council approved the June 11, 2019 and June 26, 2019 meeting minutes as distributed.
CM2	<p>Technology Council approved the following 15 consent motions for publication.</p> <ol style="list-style-type: none"> <li>1. BSR/ASHRAE Addendum <i>a</i> (<i>RCL values of refrigerant blends</i>) to ANSI/ASHRAE Standard 34-2016, <i>Designation and Safety Classification of Refrigerants</i>.</li> <li>2. BSR/ASHRAE Addendum <i>b</i> (<i>toxicity data</i>) to ANSI/ASHRAE Standard 34-2016, <i>Designation and Safety Classification of Refrigerants</i>.</li> <li>3. BSR/ASHRAE Addendum <i>c</i> (<i>corrects errors in several RCL values</i>) to ANSI/ASHRAE Standard 34-2016, <i>Designation and Safety Classification of Refrigerants</i>.</li> <li>4. BSR/ASHRAE Addendum <i>d</i> (<i>adds the zeotropic refrigerant blend R-469A</i>) to ANSI/ASHRAE Standard 34-2016, <i>Designation and Safety Classification of Refrigerants</i>.</li> <li>5. BSR/ASHRAE Addendum <i>e</i> (<i>adds the zeotropic refrigerant blend R-470A</i>) to ANSI/ASHRAE Standard 34-2016, <i>Designation and Safety Classification of Refrigerants</i>.</li> <li>6. BSR/ASHRAE Addendum <i>u</i> (<i>adds the zeotropic refrigerant blend R-466A</i>) to ANSI/ASHRAE Standard 34-2016, <i>Designation and Safety Classification of Refrigerants</i>.</li> <li>7. BSR/ASHRAE Addendum <i>y</i> (<i>basic requirements in ASHRAE Standard 188</i>) to ANSI/ASHRAE Standard 62.1-2016, <i>Ventilation for Acceptable Indoor Air Quality</i>.</li> <li>8. BSR/ASHRAE Addendum <i>i</i> (<i>90.1 Reference Update</i>) to ANSI/ASHRAE Standard 90.4-2016, <i>Energy Standard for Data Centers</i>.</li> <li>9. BSR/ASHRAE/USGBC/IES Addendum <i>k</i> (<i>Performance Renewables</i>) to ANSI/ASHRAE/USGBC/IES Standard 189.1-2017, <i>Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Building</i>.</li> <li>10. BSR/ASHRAE/USGBC/IES Addendum <i>n</i> (<i>Composite Wood Products</i>) to ANSI/ASHRAE/USGBC/IES Standard 189.1-2017, <i>Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings</i>.</li> <li>11. BSR/ASHRAE/USGBC/IES Addendum <i>y</i> (<i>Mechanical Penetrations</i>) to ANSI/ASHRAE/USGBC/IES Standard 189.1-2017, <i>Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings..</i></li> <li>12. BSR/ASHRAE/USGBC/IES Addendum <i>ad</i> (<i>Chapter 7 Deletions</i>) to ANSI/ASHRAE/USGBC/IES Standard 189.1-2017, <i>Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings</i>.</li> <li>13. BSR/ASHRAE/USGBC/IES Addendum <i>ag</i> (<i>Fan Efficiency</i>) to ANSI/ASHRAE/USGBC/IES Standard 189.1-2017, <i>Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings</i>.</li> <li>14. BSR/ASHRAE/USGBC/IES Addendum <i>al</i> (<i>Acceptance Testing</i>) to ANSI/ASHRAE/USGBC/IES Standard 189.1-2017, <i>Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings</i>.</li> <li>15. BSR/ASHRAE/USGBC/IES Addendum <i>am</i> (<i>Definition of On-site Renewable Energy</i>) to ANSI/ASHRAE/USGBC/IES Standard 189.1-2017, <i>Standard for the Design of High-Performance Green Buildings Except Low- Rise Residential Buildings</i>.</li> </ol>
M3	Technology Council approved research project 1760-RP, <i>Update of Clothing Database for Existing and New Western Clothing Ensembles, Including Effects of Body Posture and Air Movement</i> be awarded a funded extension in the amount of \$18,400 to Loughborough University in order to expand the project scope to include several medical clothing ensembles to the testing program of RP-1760 before the project concludes. Total cost of project will increase from \$168,669 to \$187,069.

<b>M4</b>	Technology Council approved changes to <i>Procedures for ASHRAE Standards Action (PASA) Section 2, Scope, Section 4, Approval of Proposed Standards, Section 7, Criteria for Approval, Withdrawal and Discontinuance of ASHRAE Standards, A1 Definitions, Annex B: Appeals of Board of Directors; Standards Actions or Inactions and Annex E: Procedures – Emergency Interim Standards Action</i> , as shown.
<b>M5</b>	Technology Council approved changes to <i>Procedures for ASHRAE Standards Action (PASA) 7.2.7, Negative Votes on Letter Ballots of PCs and Project Subcommittees</i> , as shown.
<b>M6</b>	Technology Council approved the modification of section D2.3 of the Technology Council Manual of Procedures (MOP) to correct spelling error(s) and to remove the reference to attachment A (as shown below in strike-out and underline), and to move Attachment A, “Procedures for ASHRAE Special Projects” in its entirety to the Technology Council Reference Manual.
<b>M7</b>	Technology Council will recommend to the BOD that they approve the publication of the Energy Efficiency in Buildings PD.

**Action Items**  
**Technology Council Fall Webinar**  
**Friday, November 1, 2019**

<b>ACTION ITEM #</b>	<b>RESPONSIBILITY</b>	<b>STATUS</b>	<b>DESCRIPTION</b>
1	Standards	Done	Provide the background material for Addendum aa to 62.2 for the council’s review by January 10, 2020.
2	Knight, McQuade	Done	Reminder to follow-up on 62.2 AI#1 and to include the information in the TechC Report to Board at their November meeting.
3	OPS		Look at proposed change to REF-MOP requesting to delete section E1.6 from the draft REF-CPCC MOP requiring REF-CPCC subcommittees to meet at the Annual and Winter meeting.

**Minutes  
Technology Council Fall Webinar  
Friday, November 1, 2019**

**Voting Members Present**

Dennis Knight, Chair  
Bill McQuade, Vice Chair  
Van Baxter  
Rick Hermans  
Sarah Maston  
Jaap Hogeling  
Trent Hunt  
Steve Emmerich  
Art Giesler  
Billy Austin  
Krishnan Gowri  
Heather Platt Gullede  
Kishor Khankari

**Non-Voting Members Present**

Wayne Stoppelmoor  
Jay Kohler  
David Yashar  
Rajan Rajendran  
Paul Francisco  
Dru Crawley  
Dustin Meredith  
Chris Wilkins  
Yunho Hwang  
Pat Graef

**Absent**

Mike Bilderbeck, VM  
Wade Conlan  
Wei Sun

**ASHRAE Staff**

Steve Ferguson, Sr. MOS  
Steve Hammerling, AMORTS  
DD Latham, Admin  
Lilas Pratt, MOSP  
Stephane Reiniche, DOT  
Mike Vaughn, Sr. MORTS

**1. CALL TO ORDER**

Chair, Dennis Knight, called the meeting to order at 9:05 a.m. Vice Chair, Bill McQuade, was asked to record any action items during the meeting. Tech Council Chair asked for any changes to the agenda. There being none, the agenda was accepted as presented.

*Secretary's Note: Quorum was met with 12 voting members, plus Chair.*

**2. MINUTES/ACTION ITEMS**

- M1** It was moved that the Technology Council's June 11, 2019 and June 26, 2019 meeting minutes be approved as distributed. Minutes and Action Items can be found on Basecamp at *Tech Council/Docs and Files/ Meetings/2019\_11\_01 Technology Council Fall Meeting*.

**TechC Vote: 9-0-3<sup>1</sup>, CNV**

**3. STANDING COMMITTEE REPORTS**

**A. Residential**

Chair, Paul Francisco updated the council on the activities of the committee. Please see full report on Basecamp at [04F RBC Report to TechC 2019-11-01 r1.pdf](#).

**B. Standards**

Chair, Wayne Stoppelmoor reported on Standards committee activities. The full report is located on Basecamp at [04A StdC Report to TC Fall Mtg \(003\).pdf](#).

- CM2** It was moved by Wayne Stoppelmoor and seconded that following 15 consent motions be approved as presented.

<sup>1</sup> Billy Austin, Heather Platt and Rick Hermans abstained because their terms on the Technology Council did not start until July 1, 2019.

1. BSR/ASHRAE Addendum *a* (*RCL values of refrigerant blends*) to ANSI/ASHRAE Standard 34-2016, *Designation and Safety Classification of Refrigerants*.
2. BSR/ASHRAE Addendum *b* (*toxicity data*) to ANSI/ASHRAE Standard 34-2016, *Designation and Safety Classification of Refrigerants*.
3. BSR/ASHRAE Addendum *c* (*corrects errors in several RCL values*) to ANSI/ASHRAE Standard 34-2016, *Designation and Safety Classification of Refrigerants*.
4. BSR/ASHRAE Addendum *d* (*adds the zeotropic refrigerant blend R-469A*) to ANSI/ASHRAE Standard 34-2016, *Designation and Safety Classification of Refrigerants*.
5. BSR/ASHRAE Addendum *e* (*adds the zeotropic refrigerant blend R-470A*) to ANSI/ASHRAE Standard 34-2016, *Designation and Safety Classification of Refrigerants*.
6. BSR/ASHRAE Addendum *u* (*adds the zeotropic refrigerant blend R-466A*) to ANSI/ASHRAE Standard 34-2016, *Designation and Safety Classification of Refrigerants*.
7. BSR/ASHRAE Addendum *y* (*basic requirements in ASHRAE Standard 188*) to ANSI/ASHRAE Standard 62.1-2016, *Ventilation for Acceptable Indoor Air Quality*.
8. BSR/ASHRAE Addendum *i* (*90.1 Reference Update*) to ANSI/ASHRAE Standard 90.4-2016, *Energy Standard for Data Centers*.
9. BSR/ASHRAE/USGBC/IES Addendum *k* (*Performance Renewables*) to ANSI/ASHRAE/USGBC/IES Standard 189.1-2017, *Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Building*.
10. BSR/ASHRAE/USGBC/IES Addendum *n* (*Composite Wood Products*) to ANSI/ASHRAE/USGBC/IES Standard 189.1-2017, *Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings*.
11. BSR/ASHRAE/USGBC/IES Addendum *y* (*Mechanical Penetrations*) to ANSI/ASHRAE/USGBC/IES Standard 189.1-2017, *Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings*.
12. BSR/ASHRAE/USGBC/IES Addendum *ad* (*Chapter 7 Deletions*) to ANSI/ASHRAE/USGBC/IES Standard 189.1-2017, *Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings*.
13. BSR/ASHRAE/USGBC/IES Addendum *ag* (*Fan Efficiency*) to ANSI/ASHRAE/ USGBC/IES Standard 189.1-2017, *Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings*.
14. BSR/ASHRAE/USGBC/IES Addendum *al* (*Acceptance Testing*) to ANSI/ASHRAE/USGBC/IES Standard 189.1-2017, *Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings*.
15. BSR/ASHRAE/USGBC/IES Addendum *am* (*Definition of On-site Renewable Energy*) to ANSI/ASHRAE/USGBC/IES Standard 189.1-2017, *Standard for the Design of High-Performance Green Buildings Except Low- Rise Residential Buildings*.

**TechC Vote: 12-0-0, CNV**

Standards information items were reviewed, highlighting various CMP complaints and their status. In addition, information item #4 (below) was discussed. Rick Hermans explained in detail the process and the Board's decision not to approve SSPC 62.2 addenda a. The following actions items were assigned.

4. *Standards Committee reviewed the material related to addendum a to Standard 62.2. This addendum was recommended for publication by Standards Committee in June 2019. The ASHRAE Board of Directors disapproved that recommendation but did not provide any reasons for their disapproval. Neither Standards Committee nor SSPC 62.2 are certain of the next steps.*

*Standards Committee is planning on reconsidering this action in February 2019 at the Winter Conference in Orlando, FL, and invite unresolved objectors and SSPC leadership to the meeting to listen and review the issues again to determine if procedures have been followed or not.*

*Normally items that have unresolved objectors are not shared with Technology Council per PASA. However, Standards Committee requests Technology Council members that are on the Board of Directors review the material and provide feedback or ask questions if the background material is unclear so those issues can be specifically reviewed during review by Standards Committee and can be addressed more specifically in the background material if the addendum is recommended for publication again. Standards Committee requests that feedback by January 10, 2020. If members of Technology Council want to review information in addition to the Analysis Sheet, please contact the ASHRAE Senior Manager of Standards.*

*AI#1 – Standards – Provide the background material for Addendum aa to 62.2 for the council's review by January 10, 2020.*

*AI#2 – Knight/McQuade – Reminder to follow-up on 62.2 AI#1 and to include the information in the TechC Report to Board at their November meeting.*

### **C. Research Administration**

RAC Chair, David Yashar updated the council on their committee activities. The full RAC report can be found on Basecamp at [04B-RAC-Exec. Session and Info. Items.F19.r1.pdf](#).

In Executive Session, it was moved by David Yashar and seconded by Art Giesler that:

**M3**

Technology Council approve that active research project 1760-RP, *Update of Clothing Database for Existing and New Western Clothing Ensembles, Including Effects of Body Posture and Air Movement* be awarded a funded extension in the amount of \$18,400 to Loughborough University in order to expand the project scope to include several medical clothing ensembles to the testing program of RP-1760 before the project concludes. Total cost of project will increase from \$168,669 to \$187,069. (Appendix RA-A)

**Background:** This additional scope will directly benefit TC 9.6 (Healthcare Facilities) and SSPC 170 (Ventilation of Healthcare Facilities) and it is supported by the sponsoring TC for RP-1760 - TC 2.1 (Physiology and Human Environment) MOTION PASSED: 10-0-2<sup>1</sup>-2 (14) CNV

**TechC Vote: 12-0-0, CNV**

### **D. Technical Activities**

Chair, Jay Kohler provided the council with a brief update on TAC activities and the full report can be found on Basecamp at [04C-TAC F19.docx](#).

Sarah Maston, TAC Membership Coordinator/CEC Liaison, noted that TAC Ad Hoc on TC reorganization continues to meet regularly and explore ideas to utilize members' time most efficiently and effectively

### **E. Environmental Health**

In EHC Chair, Wade Conlan's absence, Rick Hermans gave a brief verbal update on the committee's activities. No written report was provided.

## F. Refrigeration

Chair, Rajan Rajendran provided the council with a brief update on the committee's activities and the full report can be found on Basecamp at [04E-REF Rprt to TechC.19\\_Release1.pdf](#).

*AI#3 – OPS – Look at proposed change to REF-MOP requesting to delete section E1.6 from the draft REF-CPCC MOP requiring REF-CPCC subcommittees to meet at the Annual and Winter meeting.*

## 4. SUBCOMMITTEE REPORTS

### A. Operations

OPS Chair, Art Giesler presented a report on the committee's activities. Full report with attachments can be found on Basecamp at [05A OPS Report to TechC.pdf](#).

It was moved by Art Giesler that:

- M4** Technology Council approve that Procedures for ASHRAE Standards Action (PASA) Section 2, *Scope*, Section 4, *Approval of Proposed Standards*, Section 7, *Criteria for Approval*, *Withdrawal and Discontinuance of ASHRAE Standards*, *A1 Definitions*, *Annex B: Appeals of Board of Directors; Standards Actions or Inactions* and *Annex E: Procedures – Emergency Interim Standards Action*, be approved as shown in Att A.

**TechC Vote: 12-0-0, CNV**

- M5** Technology Council approve that Procedures for ASHRAE Standards Action (PASA) 7.2.7, *Negative Votes on Letter Ballots of PCs and Project Subcommittees*, be approved as shown in Att B.

**TechC Vote: 12-0-0, CNV**

OPS discussed a new referral received from [Region VI \(Minnesota Chapter\) – Motion 36 \(06/25/2019\)](#): That the Society create a standard Chapter Climate Change Committee for climate change education, research and policy work. Bill McQuade noted that TC 2.5 is currently producing a handbook on this subject.

### B. Special Projects

Special Projects Chair, Van Baxter reported on the committee's current activities. The full report can be found on Basecamp at [05B\\_SpcProj\\_Report\\_to\\_TechC\\_2019-11-01\\_F.pdf](#).

It was moved by Van Baxter that:

- M6** Technology Council approve the modification of section D2.3 of the Technology Council Manual of Procedures (MOP) to correct spelling error(s) and to remove the reference to attachment A (as shown below in strike-out and underline), and to move Attachment A, "Procedures for ASHRAE Special Projects" in its entirety to the Tech Council Reference Manual.

#### D2.3 Special Projects Subcommittee

D2.3.1 Scope – The Special Projects Subcommittee shall be responsible for the administrative and financial oversight of all ASHRAE Special Projects.

D2.3.2 Responsibilities



- D2.3.2.1 To assist the Director of Technology in soliciting and negotiating with outside organizations interested in special projects, including such factors as criteria for compensation, methods of funding, types of agreements, and avoidance of conflicts of interests.
- D2.3.2.2 To enforce and maintain the "Procedures for ASHRAE Special Projects" (see [Technology Council Reference Manual Attachment A of this document](#)), and to recommend changes as necessary.
- D2.3.2.3 To monitor the initiation and progress of Special Projects to ensure ~~insure~~ that they are consistent with ASHRAE policy and procedures and that they are progressing as planned per budget and schedule.
- D2.3.2.4 To keep Technology Council informed of the progress of Regular Special Projects and to recommend actions needed to address any issues that arise in the conduct of a particular project.

**Background:** After review of the Technology Council MOP, Special Projects Subcommittee agreed that Attachment A "Procedures for ASHRAE Special Projects" more appropriately belongs in the Technology Council Reference Manual than in the Manual of Procedures (MOP).

**TechC Vote: 12-0-0, CNV**

### C. Document Review

Bill McQuade reported on the Document Review Subcommittee. DRSC's full report with attachments can be found on Basecamp at [05C DRSC Report to TECHC 11 1 19.pdf](#).

It was moved by Bill McQuade that:

- M7** Technology Council recommend to the BOD that they approve the publication of the *Energy Efficiency in Buildings* PD.

**Background:** The *Energy Efficiency in Buildings* PD is shown in **Attachment A**. The BOD approved title, purpose and scope for this *Energy Efficiency in Buildings* position document is shown in **Attachment B**.

The initial ASHRAE PD on Energy was published in 1990 but expired in 2012. A revision to the old PD was developed but never approved by Tech Council. Since 2012 ASHRAE has not had a PD on the subject. This Energy Efficiency in Buildings PD was proposed in Fall of 2014 as the first in a three-part series of PD's (Attachment C). It was decided at that time that the three proposed PDs would be developed in series with part 2 evaluated after part 1 is published.

This PD was brought forward to DRSC in Kansas City but did not pass. DRSC members provided comments to the PD committee to consider for implementation. Some changes were made and Attachment A shows what was approved by the PD committee (unanimously

**TechC Vote: 12-0-0, CNV**

## 5. NEXT MEETING

Winter Meeting in Orlando, Wednesday, February 5, 2020 – 9:00 a.m. to 12:00 p.m.

There being no further business to come before the Council, the meeting adjourned at 10:40 a.m.