



**TECHNOLOGY COUNCIL
Atlanta Conference
Wednesday, January 16, 2019**

***NOTE:** These are not the official minutes until approved by Technology Council.
All reports listed in these minutes can be found on Basecamp in folder
Meetings/2018-12 Pre-Atlanta Webinar*

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Motions
Technology Council Meeting
January 16, 2019

1	Technology Council approved the December 7, 2018 Pre-Atlanta Technology Council Minutes as distributed.
2	Technology Council provide a response to the ASHRAE Executive Committee (ExCom) at their request for RBC to investigate the possible creation of a Residential Resiliency Guide.
3	Standards Committee recommended that the following Title, Purpose and Scope (TPS) be approved as a safety and policy level standard and that a new Standard Project Committee be formed with the National Sanitation Foundation (NSF) approved as a joint sponsor to the proposed TPS and ASHRAE serving as the lead organization.
3A	Technology Council approved to amend motion 3 and to delete "Prevention" from the title and replace it with "Minimize Risk".
4	Standards Committee recommended that the Procedures for ASHRAE Standards Action (PASA) 7.2.2, Publication Approval, and Standards Committee Manual of Procedures, 7 Approval Sequence of Standards Related Actions, be approved.
C5	<p>Technology Council approved the following addenda:</p> <ul style="list-style-type: none"> • BSR/ASHRAE Addendum <i>q</i> (<i>moves the cis (E) and trans (Z) isomer description</i>) to ANSI/ASHRAE Standard 34-2016, <i>Designation and Safety Classification of Refrigerants</i>. • BSR/ASHRAE Addendum <i>r</i> (<i>naming of molecules containing Iodine</i>) to ANSI/ASHRAE Standard 34-2016, <i>Designation and Safety Classification of Refrigerants</i>. • BSR/ASHRAE Addendum <i>s</i> (<i>adds the single component refrigerant R-1336mzz</i>) to ANSI/ASHRAE Standard 34-2016, <i>Designation and Safety Classification of Refrigerants</i>. • BSR/ASHRAE Addendum <i>v</i> (<i>addresses critical temperature of fluids</i>) to ANSI/ASHRAE Standard 34-2016, <i>Designation and Safety Classification of Refrigerants</i>. • BSR/ASHRAE Addendum <i>t</i> (<i>adds a new informative appendix on Natural Ventilation</i>) to ANSI/ASHRAE Standard 62.1-2016, <i>Ventilation for Acceptable Indoor Air Quality</i>. • BSR/ASHRAE/IES Addendum <i>au</i> (<i>minimum air handler outdoor air rates</i>) to ANSI/ASHRAE/IES Standard 90.1-2016, <i>Energy Standard for Buildings Except Low-Rise Residential Buildings</i>. • BSR/ASHRAE/IES Addendum <i>az</i> (<i>model refrigeration equipment</i>) to ANSI/ASHRAE/IES Standard 90.1-2016, <i>Energy Standard for Buildings Except Low-Rise Residential Buildings</i>. • BSR/ASHRAE/IES Addendum <i>dn</i> (<i>energy recovery</i>) to ANSI/ASHRAE/IES Standard 90.1-2016, <i>Energy Standard for Buildings Except Low-Rise Residential Buildings</i>. • BSR/ASHRAE Addendum <i>a</i> (<i>clarifies the units of measure</i>) to ANSI/ASHRAE Standard 161-2018, <i>Air Quality within Commercial Aircraft</i>. • BSR/ASHRAE Addendum <i>b</i> (<i>removes Section 9 References</i>) to ANSI/ASHRAE Standard 161-2018, <i>Air Quality within Commercial Aircraft</i>. • BSR/ASHRAE Addendum <i>c</i> (<i>reportable hazardous ingredients</i>) to ANSI/ASHRAE Standard 161-2018, <i>Air Quality within Commercial Aircraft</i>. • BSR/ASHRAE Addendum <i>a</i> (<i>clarifies the requirements for buildings containing health care facilities</i>) to ANSI/ASHRAE Standard 188-2015, <i>Legionellosis: Risk Management for Building Water Systems</i>.
7	Technology Council recommended to the Board that Procedures for ASHRAE Standards Actions (PASA) 4.2.2.6, Standards Reaffirmation Subcommittee (SRS) be revised as shown.

8	Technology Council recommended to the Board that Procedures for ASHRAE Standards Action (PASA) 4.3.8, <i>Removal for Cause</i> and PASA 4.3.9, <i>Removal for Cause Initiated by SPLS</i> be revised as shown.
9	Technology Council recommended to the Board that the changes to the ASHRAE Rules of the Board (ROB) be approved as shown.
10	Technology Council committed a maximum of \$100K (100% of the \$100k estimated budget) for the FY 2019-20 budget for the development of a Standard 90.1-2019 User's Manual.
11	Technology Council committed a maximum of \$40K (100% of the \$40k estimated budget) for the FY 2019-20 budget for the development of a Standard 62.2-2019 User's Manual.
12	Technology Council committed to the expenditure of the previously allocated \$52K in the FY 2018-19 budget for the development of a Standard 100-2018 User's Manual and request that the ASHRAE Board of Directors approve carry over of any unspent portion of this \$52K from FY 2018-19 to FY 2019-20, contingent upon the acquisition of \$23k in outside funding during FY 2018-19.
13	Technology Council recommended to the BOD ExCom to revise the title, purpose and scope (TPS) of the <i>Airborne Infectious Diseases</i> Position Document (PD).
14	Technology Council approved that 1784-TRP, Repeatability and reproducibility assessment of ASHRAE Standard 52.2 as currently amended, be awarded to the Owen Air Filtration Consulting, LLC for a period of 18 months at a total cost to ASHRAE of \$150,000.
15	Technology Council approved that 1847-TRP, <i>Updating Climatic Design information for the 2021 ASHRAE Handbook, Standard 169, and the Handbook of Smoke Control Engineering</i> , be awarded to Klimaat Consulting & Innovation Inc. for a period of 24 months at a total cost to ASHRAE of \$144,000.

**Action Items
Technology Council Meeting
January 16, 2019**

AI#	Responsibility	Status	Summary
1	Giesler		Send RAC (J Shonder) potential MOP revisions for Research Planning.
2	Hammerling/Justice	Complete	Contact Meeting Planning Committee to secure meeting space for combined breakfast similar to RACs breakfast.
3	ASHRAE Staff	Complete	Resolve issues with embedding documents into committee reports, etc.
4	Mick/DD	Complete	Create Doodle Poll for conference call availability on or about February 5 th to discuss PLC and finance assessments.
5	Mick/Dennis/ Art/Stephanie/DD	Complete	Hold conference call to coordinate input from committees on finance and PLC efficiencies, programs, improvements, etc.
6	Mick	Complete	Communicate result of above conference call to full Tech Council.

MINUTES
TECHNOLOGY COUNCIL MEETING

Atlanta Conference
January 16, 2019

Attendance:

Voting Members Present

Mick Schwedler, Chair
Dennis Knight, Vice Chair
Van Baxter
Kelley Cramm
Charlie Culp
Douglas Fick
Ken Fulk
Art Giesler
Byron Jones
Tom Lawrence
Larry Markel
Sarah Maston (arrived at 9:55 am)

Absent

Mike Bilderbeck, VM
Steve Emmerich, VM
Wayne Stoppelmoor
David Yashar

Guests

Randika Amarasuriya
Don Brandt, DAL
Bill Dean
Ron Gagnon, Region II
Ng Yong Kong, Region XII
Mustafa Morsy, Region II
Bob Snow

Non-Voting Members Present

Don Brundage
Wade Conlan
Martin Dieryckx
Paul Francisco
Elliott Horner
Tom Justice
Jay Kohler
Rajan Rajendran
John Shonder
Theresa Weston

ASHRAE Staff

Nicole Blunt, Sr. Mgr. of Dev.
Steve Ferguson, Sr. MOS
Steve Hammerling, AMORTS
DD Latham, Admin
Jeremy Pollack, MOFGA
Lilas Pratt, MOSP
Stephane Reiniche, DOT
Jim Scarborough, Sr. MOSLGA
Mike Vaughn, Sr. MORTS
Alice Yates, DOGA

1. CALL TO ORDER

Chair, Mick Schwedler, called the meeting to order at 9:05 a.m. Vice Chair, Dennis Knight, 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 9 voting members, plus Chair.

2. MINUTES/ACTION ITEMS

M1 **A.** It was moved by Art Giesler and seconded by Van Baxter that the December 7, 2018 Pre-Atlanta Technology Council Minutes be approved as distributed.

TechC Vote: 8-0-1¹, CNV

B. Chair reviewed open Action Items. Updates were reported and the current Action Items status report can be found on Basecamp at [ASHRAE Technology; Docs & Files; Meetings; 2019_1_16 Winter Meeting Atlanta/OPEN ACTION ITEMS as of 2_6_19\(v2\)](#).

3. ASHRAE DC OFFICE UPDATE

Alice Yates, Jim Scarborough and Jeremy Pollack reported on the activities of the ASHRAE DC office. Presentation can be found on Basecamp at [ASHRAE Technology; Docs & Files; Meetings; 2019_1_16 Winter Meeting/Atlanta/04 TECH COUNCIL_GOV Affairs Staff Report-Final.pdf](#)

¹ Tom Lawrence abstained because he was not present at the December 7th webinar.

4. STANDING COMMITTEE REPORTS

A. Environmental Health

Chair Elliott Horner reported and highlighted the EHC activities shown below. The full report can be found on Basecamp at [ASHRAE Technology; Docs & Files; Meetings; 2019_1_16 Winter Meeting/Atlanta/ 05D-EHC Rprt to TechC.19.W.](#)

1. EHC continues with their new meeting format to ensure efficiency of meeting time and to allow for time allocated to a Strategic Discussion Topic. The topic for Atlanta was “Developing a Strategic Plan for EHC”.
2. Planning is underway for ASHRAE’s IAQ 2020 conference. Bill Bahnfleth and Max Sherman are chairing the event tentatively titled “IEQ Performance Approaches”. It will take place in Greece in September of 2020 and be organized with AIVC and IEQ-GA. IEQ-GA will take the lead on organizing the IAQ 2023 conference.

Secretary’s Note: Vice Chair, Dennis Knight, joined the meeting at 9:20 am – vote count is now 10 plus chair.

B. Refrigeration

REF Chair Martin Dieryckx gave an update and highlighted some of the committee’s activities. No motions were brought forward. The full report can be found on Basecamp at [ASHRAE Technology; Docs & Files; Meetings; 2019_1_16 Winter Meeting/Atlanta/ 05E-REF Rprt to TechC.19.W](#)

1. REF participated in a technical review of the UNEP Refrigeration Technical Options Committee (RTOC) report. Comments were well received and will be incorporated into the RTOC report when released. This review can be improved and serve as a model for ASHRAE to participate in future technical reviews.
2. REF established three task forces that will make proposals for the Kansas City meeting:
 - Based on the Ad Hoc reviewing the ‘R in ASHRAE’, REF will consider a change to the name and scope of REF as well as renaming and reorganizing the subcommittees.
 - The committee will prepare a technical report on the current state of the art on global refrigeration technology. This report will be used to update the handbook and to promote the ASHRAE ‘R’ activities of the REF committee.
 - REF is evaluating the current membership structure and status. A proposal being considered is for outside organizations (IOR, IIR, UNEP, GCCA, IIAR, etc.) that have an MOU with ASHRAE to become permanent members. TC chairs could become non-voting members instead of liaisons in order to assure a better link with REF.

C. Residential

It was moved by Van Baxter and seconded by Tom Lawrence that:

M2 Technology Council provide the following response to the ASHRAE Executive Committee (ExCom) at their request for RBC to investigate the possible creation of a Residential Resiliency Guide.

Residential Building Committee (RBC) believes that it is appropriate to conduct a larger assessment across the spectrum of ASHRAE guidance and standards prior to initiating a design guide. The committee notes that any assessment would require a larger group than just the RBC and this assessment may already be underway with the Technology Council appointed Disaster Relief Ad-hoc committee. There are other organizations/stakeholders that would likely want to participate in any efforts for a design guide as well as an assessment of need.

RBC notes several key questions that ASHRAE may wish to focus on.

- What is ASHRAE's policy and expertise around resiliency?
- What ASHRAE guidance/standards are related to resiliency and how can they be improved and by whom?
- What educational resources should ASHRAE create for resiliency and how should that be accomplished/distributed and by whom?
- What to do in regards to ASHRAE membership and preparing timely response to resilient events?
- What role can ASHRAE play in science/research in regards to addressing these issues (i.e. resiliency and energy efficiency)?

RBC recommends that efforts to develop a scope, proposed approach and cost estimates for a design guide should include identifying:

- Appropriate stakeholders
- ASHRAE relationship with those stakeholders
- TC's involved in resilient conditions
- ASHRAE's role in resilient issues

BACKGROUND: In November 2017, Ex-Com sent a request (as shown below) to RBC to investigate the creation of a Residential Resiliency Design Guide.

***From:** Ginger Scoggins*

***Sent:** Monday, November 6, 2017 11:50 AM*

***To:** Chris Mathis*

***Cc:** WESTON, THERESA A; Reiniche, Stephanie; Schwedler, Mick*

***Subject:** Resilient Home Design Guide*

Good morning Chris

At the BOD and Excom meetings this week, we discussed the need for guidance from ASHRAE for construction of resilient homes due to the recent escalation of natural disasters.

It was agreed that this would be forwarded to the Residential Building Committee for investigation of the possibility of creating a Resilient Residential Design Guide.

Just for information, a recent example of a home that was built for hurricane resistance is summarized in the link below:

<https://inhabitat.com/hurricane-resistant-sure-house-wins-the-2015-solar-decathlon/> This is one example, although the thought is not to limit the guide to hurricanes since there are other disasters occurring such as forest fires.

Please discuss this within your committee and let us know your response to this request.

Thank you, Ginger Scoggins

TechC Vote: 10-0-0, CNV

Chair Theresa Weston reported on RBC's activities as highlighted below. The full report can be found on Basecamp at [ASHRAE Technology; Docs & Files; Meetings; 2019_1_16 Winter Meeting/Atlanta/05F_RBC_Report_to_TechC_2019-01-16_Rev2](#)

1. RBC discussed changes to their subcommittee structure and will identify necessary changes to their MOP in time for the spring meeting cycle.
2. The 1821-RP PMS and the Publications subcommittee reported on the Multi-family Design Guide research project (1821-RP). The final draft of the document was reviewed and approved by the Project Monitoring Subcommittee (3-0-0-2, CV) with several editorial stipulations that will need to be addressed by the principal investigator including format style, calculation verification, commercialization removal, and the addition of dual units.

The full committee will now review the final draft and a letter ballot will be issued for approval. The final draft needs to be delivered to ASHRAE Publications staff by mid-February in order to ensure that the document will be available for purchase in Kansas City in June 2019. The principal investigator/author, Sean Denniston, will submit a proposal for a seminar on the guide in Kansas City.

3. The Conferences subcommittee agreed that a list was needed identify residential themed conferences both within the U.S. and internationally. Potential roles for ASHRAE at these conferences include presentations on ASHRAE standards and other publications as well as reserving and staffing an ASHRAE booth at select conferences. A strategy for implementing these ideas will be created.

D. Research Administration

Chair Jon Shonder reported, as highlighted below, on the activities of RAC and the full report can be found on Basecamp at [ASHRAE Technology; Docs & Files; Meetings; 2019 1 16 Winter Meeting/Atlanta/ 5B RAC-Info. Items.W19.Draft.](#)

The 2018-2019 Research Budget authorized the expenditure of \$2,763,200 for new projects, Homer Adams Award, New Investigator Award payments, Grants-In-Aid, and Innovative Research Grants. The year began with obligations previously made for the year of \$1,449,368. This resulted in \$1,313,832 being available to obligate in new payments during the year.

During this fiscal year so far, twelve new projects totaling \$1,490,877 were started that are expected to result in \$658,491 in additional payments during FY 18-19. Total FY 18-19 expenditures for projects, Homer Addams Award, New Investigator Award payments and Grants-In-Aid are now expected to total to \$2,160,359 or \$602,841 (22%) below budget at this time. This leaves \$602,841 that can be allocated to new projects that start in the spring (April) of FY 18-19. If the eight pending TRPs that received bids this past fall or earlier are funded at the winter meeting, RAC will still under spend their budget this year by \$349,353, or (12.6%) below budget.

Current commitments for FY 19-20 total to \$1,278,212. If all eight TRPs that are pending award in Atlanta are under contract in the first quarter of FY 19-20, RAC will incur an estimated \$638,125 in additional commitments for that year for a total of \$1,916,337. The draft FY 19-20 budget for projects, grants and awards is \$2,465,400. The final FY 19-20 budget will be finalized in Kansas City, MO in June.

At this point, RAC has commitments for FY 19-20 totaling to \$1,278,212. There are a total of four approved TRPs ready for bid this spring and another five TRPs that may be ready in time to bid this spring. If all of these projects were to bid this spring, they would add \$1,222,532 in additional funding commitments to FY 19-20 leaving a \$35,344 deficit in the budget. As a result, RAC will need to prioritize the list of TRPs to bid this spring.

Ai# 1: Art Geisler to send RAC (J Shonder) potential MOP revisions for Research Planning.

RAC expects to release for bid in spring 2019 a portion of following six RAC-approved work statements:

- **1644-TRP**, *Smoke Control in Long Atria*; Responsible Committee: TC 5.6 (Control of Fire and Smoke); Co-Sponsors: None; Co-Funding: None; Estimated Duration: 12-15 Months; Estimated Cost to ASHRAE: \$75,000
- **1683-TRP-R**, *Experimental Evaluation of Two-Phase Pressure Drop and Flow Pattern in U-Bends with Ammonia*; Responsible Committee: TC 1.3 (Heat Transfer and Application); Co-Sponsors: TC 8.4 (Air-to-Refrigerant Heat Transfer Equipment); Co-funding: None; Estimated Duration: 30 months; Estimated Cost to ASHRAE: \$150,000
- **1740-TRP-R**, *Hydrogen Fluoride Capacity of Desiccants*; Responsible Committee: TC 3.3 (Refrigerant Contaminant Control); Co-Sponsors: TC 3.2 (Refrigerant System Chemistry); Co-funding: None; Estimated Duration: 9 months; Estimated Cost to ASHRAE: \$120,000
- **1790-TRP-R**, *Distribution of Water Between Vapor and Liquid Phases of Low GWP Refrigerants*; TC 3.3 (Refrigerant Contaminant Control); Co-funding: None; Estimated Duration: 12 months; Estimated Cost to ASHRAE: \$100,000
- **1816-TRP**, *Reporting the Energy Use and Heat Gain from Imaging Equipment*; Responsible Committee: TC 9.6 (Healthcare Facilities); Co-Sponsors: TC 4.1 (Load Calculations and Procedures), TC 4.7 (Energy Calculations); Estimated Duration: 18 months; Estimated Cost to ASHRAE: \$150,000

- **1833-TRP-C**, *Literature Review of Evidence of Basis for Specified Air Change Rates (ACR) for Cleanrooms, Laboratories, Laboratory Animal Facilities, and Health Care Facilities with medium to High ACR*; Responsible Committee: MTG.ACR (Air Change Rates); Co-Sponsors: MTG member committees; Estimated Duration: 9 months; Estimated Cost to ASHRAE: \$75,000
- **1836-TRP**, *Developing a Standardized Categorization System for Energy Efficiency Measures*; Responsible Committee: TC 7.6 (Building Energy Performance); Co-Sponsors: None; Estimated Duration: 14 to 16 months; Estimated Cost to ASHRAE: \$80,000

1. RAC rejected a funded extension request for **RP-1614** (*Developing a Test Method to Determine the Effectiveness of UVC Systems on Commercial Cooking Effluent*) in the amount of \$75,000, which would raise ASHRAE's total cost for the project to \$200,000. Issues included the cost from Syracuse for the additional work seemed excessive, modifications to the original test procedure would be needed for the new work, and the general opinion that Interzon (equipment donor) should just contract directly with Syracuse for this new work.
2. TC 4.3 rejected for funding **URP-1853** (*Building on an existing residential ventilation project: brushless permanent magnet (BPM) motor change-outs, pollutant emissions characterizations, and testing multi-zone ventilation system effectiveness*) from the Illinois Institute of Technology, which was an add-on project to an existing HUD project.

E. Technical Activities

Secretary's Note: At 9:55 Sara Matson joined the meeting – vote count is now 11 plus chair.

Chair Tom Justice discussed and highlighted items from TAC's report which can be found in full on Basecamp at [ASHRAE Technology; Docs & Files; Meetings; 2019 1 16 Winter Meeting/Atlanta/ 05C-TAC W19 Draft](#)

1. TAC Section Heads and TC Chairs again held an event during the Student Welcome event with YEA to introduce students to technical committees. The event was well received. We intend to make this an annual event at the winter meetings.
2. MTG BD (Building Dampness) was disbanded by TAC at this meeting at the request of the MTG.
3. TAC will be conducting a combined chairs breakfast that is similar to the RAC liaison breakfast at the Annual Meeting in Kansas City.

AI# 2: Hammerling/Justice to contact Meeting Planning Committee to secure meeting space for combined breakfast similar to RACs breakfast.

4. TAC continues work on a method to document TC key performance indicators over time. This will give TCs trends on TC membership, attendance, programs, etc. It will also allow TAC to identify and provide support when trends show a TC is struggling. The first milestone in this effort is to complete a new online activity form for TCs, which we now hope to launch at the 2019 Annual meeting in Kansas City.

F. Standards

Don Brundage presented the following motions for Tech Council consideration. A copy of the full committee report can be found on Basecamp at [ASHRAE Technology; Docs & Files; Meetings; 2019 1 16 Winter Meeting/Atlanta/ 05A-StdC Report to TC Atlanta 2019.doc](#)

M3 It was moved by Larry Markel and seconded by Tom Lawrence that

The following Title, Purpose and Scope (TPS) be approved as a safety and policy level standard and that a new Standard Project Committee be formed with the National Sanitation Foundation (NSF) approved as a joint sponsor to the proposed TPS and ASHRAE serving as the lead organization:

Title: Prevention of Disease and Injury with Building Water Systems

Purpose: The purpose of this standard is to establish minimum practices to prevent disease and injury from physical, chemical, and microbial hazards associated with water systems in buildings.

Scope: The minimum practices established by this standard apply to the design, construction, commissioning, operation, maintenance, repair, replacement, and expansion of new and existing building water systems (potable and non-potable) and their associated components.

This standard applies to all human-occupied buildings except single-family residential buildings.

BACKGROUND: This TPS will also have to be approved by the Board. This TPS was submitted by Ms. Jessica Evans of NSF for consideration at the Winter PPIS meeting. PPIS assigned TC 3.6, *Water Treatment* as the cognizant technical committee. Steve Tackett was recommended as the Chair of the proposed new project committee. There are at least five members willing to volunteer.

Standards Committee will have the ultimate responsibility to handle duplication and harmonization issues that may be brought forward, in particular for duplication issues related to Standard 188, *Legionellosis: Risk Management for Building Water Systems*

M3A It was moved and seconded that the motion be amended to delete "Prevention" from the title and replace it with "Minimize Risk".

Motion to Amend TechC Vote: 11-0-0, CNV

Motion as Amended TechC VOTE: 11-0-0, CNV

Secretary's Note: NSF agreed with the proposed.

M4 It was moved by Larry Markel and seconded by Tom Lawrence that:

Standards Committee recommend to Tech Council to recommend to the Board that the Procedures for ASHRAE Standards Action (PASA) 7.2.2, *Publication Approval*, and Standards Committee Manual of Procedures, *7 Approval Sequence of Standards Related Actions*, be approved.

BACKGROUND: In Houston in June 2018, Standards ExCom discussed the need for Standards Committee and Technology Council publication approval of publication drafts for policy level standards if no objections were raised during the process. That discussion resulted in this recommended procedure change to allow fast track approval of any publication that has no unresolved objections. If this is approved, Standards Committee and Technology Council will no longer need to approve publications if there are no objections. Typically modifications to PASA are recommended by Operations Subcommittee, but these modifications were not approved by Standards Committee prior to Operations meeting on Tuesday.

TechC Vote: 11-0-0, CNV

Secretary's Note; If approved by the Board this needs to go out for public review at ANSI. Staff is holding this until a few other changes have been approved.

CM5 It was moved by Larry Markel and seconded by Tom Lawrence that the following 12 publications be approved as a consent agenda.

- BSR/ASHRAE Addendum *q* (moves the *cis* (E) and *trans* (Z) isomer description) to ANSI/ASHRAE Standard 34-2016, *Designation and Safety Classification of Refrigerants*.
- BSR/ASHRAE Addendum *r* (naming of molecules containing Iodine) to ANSI/ASHRAE Standard 34-2016, *Designation and Safety Classification of Refrigerants*.
- BSR/ASHRAE Addendum *s* (adds the single component refrigerant R-1336mzz) to ANSI/ASHRAE Standard 34-2016, *Designation and Safety Classification of Refrigerants*.
- BSR/ASHRAE Addendum *v* (addresses critical temperature of fluids) to ANSI/ASHRAE Standard 34-2016, *Designation and Safety Classification of Refrigerants*.
- BSR/ASHRAE Addendum *t* (adds a new informative appendix on Natural Ventilation) to ANSI/ASHRAE Standard 62.1-2016, *Ventilation for Acceptable Indoor Air Quality*.

- BSR/ASHRAE/IES Addendum *au* (minimum air handler outdoor air rates) to ANSI/ASHRAE/IES Standard 90.1-2016, *Energy Standard for Buildings Except Low-Rise Residential Buildings*.
- BSR/ASHRAE/IES Addendum *az* (model refrigeration equipment) to ANSI/ASHRAE/IES Standard 90.1-2016, *Energy Standard for Buildings Except Low-Rise Residential Buildings*.
- BSR/ASHRAE/IES Addendum *dn* (energy recovery) to ANSI/ASHRAE/IES Standard 90.1-2016, *Energy Standard for Buildings Except Low-Rise Residential Buildings*.
- BSR/ASHRAE Addendum *a* (clarifies the units of measure) to ANSI/ASHRAE Standard 161-2018, *Air Quality within Commercial Aircraft*.
- BSR/ASHRAE Addendum *b* (removes Section 9 References) to ANSI/ASHRAE Standard 161-2018, *Air Quality within Commercial Aircraft*.
- BSR/ASHRAE Addendum *c* (reportable hazardous ingredients) to ANSI/ASHRAE Standard 161-2018, *Air Quality within Commercial Aircraft*.
- BSR/ASHRAE Addendum *a* (clarifies the requirements for buildings containing health care facilities) to ANSI/ASHRAE Standard 188-2015, *Legionellosis: Risk Management for Building Water Systems*.

TechC Vote: 10-0-1², CNV

It was moved by Larry Markel and seconded by Van Baxter that:

M6 Standards Committee recommend that the revised TPS for ANSI/ASHRAE/IES 90.1-2016, *Energy Standard for Buildings Except Low-Rise Residential Buildings*, be approved as shown:

Title: Energy Standard for Sites and Buildings Except Low-Rise Residential Buildings

Purpose: To establish the minimum *energy efficiency* requirements of *buildings* other than *low-rise residential buildings*, and sites for: design, *construction*, and a plan for operation and maintenance; and utilization of on-site, renewable *energy* resources.

2. Scope:

This standard provides minimum *energy-efficient* requirements for the design and *construction*, and a plan for operation and maintenance of (1) new *buildings* and their *systems*, (2) new portions of *buildings* and their *systems*, (3) new systems and equipment specifically identified in this standard that are part of a site, ~~(3)~~ (4) new *systems* and *equipment* in *existing buildings*, and ~~(4)~~ (5) new *equipment* or *building systems* specifically identified in ~~the~~ this standard that are part of ~~industrial or manufacturing processes applications, and~~ criteria for determining compliance with these requirements.

The provisions of this standard do not apply to single-family houses, multifamily structures of three stories or fewer above *grade*, manufactured houses (mobile homes), and manufactured houses (modular) or *buildings* that use neither electricity nor *fossil fuel*.

Where specifically noted in this standard, certain other *buildings* or elements of *buildings* or sites shall be exempt.

This standard shall not be used to circumvent any safety, health, or environmental requirements.

BACKGROUND: SSPC 90.1 explored areas outside of the physical building where energy savings would be possible by applying provisions presently in the Standard. Examples include lighting in parking lots that may not be directly associated with a building or lighting and equipment associated with campus environments or parks.

SSPC 90.1 explored areas outside of the physical building where energy savings would be possible by applying provisions presently in the Standard. Examples include lighting in parking lots that may not be directly associated with a building or lighting and equipment associated with campus environments or parks.

² Byron Jones abstained.

This addendum revises the Title Purpose and Scope (TPS) of Standard 90.1 to apply to areas outside of the physical building. The addendum introduces a new term “site” to define those types of environments where a physical building may not be present but the energy consuming lighting and equipment are covered by provisions in the Standard. Also, a new provision is included in Chapter 4 “Administration and Enforcement” to address sites with or without buildings.

Finally, related revisions are made to existing definitions and sections of Standard 90.1 impacted by the above modifications.

TechC Vote: 3-8³-0, CNV
MOTION FAILED

5. SUBCOMMITTEE REPORTS

A. Operations

M7 It was moved by Art Geisler that:

Tech Council recommend to the Board that Procedures for ASHRAE Standards Actions (PASA) 4.2.2.6, *Standards Reaffirmation Subcommittee (SRS)* be revised as shown in below:

Standards Reaffirmation Subcommittee (SRS)

SRS serves as the project committee (consensus body) for reaffirmation, withdrawal or revision (when updating references will not make a substantive change to the standard or guideline) of existing ASHRAE standards. SRS is a project committee of at least five

(5) members, including at least three members of the StdC and applicants responding to an annual call for members posted in ASHRAE Standards Actions. The Chair and Members are appointed annually by the Standards Committee Chair. ~~and approved by Technology Council Chair.~~ SRS acts, in limited circumstances, as a project committee for existing standards and is subject to the rules of project committees for reaffirmations, withdrawals, and revisions only to update references, that are not themselves reaffirmations and do not cause a substantive change to the standard. SRS must comply with all ANSI requirements for openness, balance and due process. SRS may act in lieu of a PC, with the advice of the cognizant TC/TG/TRG, to recommend, reaffirm, withdraw or revise an existing standard based on updated references (that do not cause a substantive change to the standards) or add a second system of units to an existing standard, thereby making the existing standard useable in either SI or IP units.

BACKGROUND: Standards Committee is responsible for standing subcommittees. In an effort to streamline approval levels, a recommendation to remove Technology Council Chair has been brought forward. This recommendation if approved, would make approving SRS membership efficient. This will have to go out for public review at ANSI before being finalized.

TechC VOTE: 11-0-0, CNV

M8 It was moved by Art Geisler that:

Tech Council recommend to the Board that Procedures for ASHRAE Standards Action (PASA) 4.3.8, *Removal for Cause* and PASA 4.3.9, *Removal for Cause Initiated by SPLS* be revised as shown below:

4.3.8 Removal for Cause

The PC Chair may recommend removal of a PC member from the roster for due cause, by submitting a recommendation and justification outlining the reasons for said recommendation, and must submit a copy of communications between the PC Chair and PC member concerning this subject with the recommendation, in writing to the SPLS Liaison and Manager of Standards (MOS). ~~PC Chair recommendations for termination of the membership can be based on a failure to actively participate in the PC proceedings or meet PC responsibilities, including but not limited to: missing two consecutive PC meetings without prior written approval from the PC Chair; failure to attend at least 50% of scheduled PC meetings within any twelve month period; and/or failure to return at least 60% of the~~

³ Ken Fulk and Kelley Cramm opposed.

~~letter ballots within any twelve month period.~~—The MOS will transmit the recommendations of the PC Chair and SPLS Liaison and related correspondence to SPLS for action in a meeting or by letter ballot. The SPLS Chair may call an executive session of the SPLS or the PC to discuss the matter. Failure of the PC member to fully properly disclose any conflict of interest shall be grounds for removal from the PC by SPLS.

4.3.9 Removal for Cause Initiated by SPLS

SPLS may, without a recommendation of the PC Chair, recommend removal of one or more PC members from the roster and document their reasons for the removal. ~~for any of the reasons stated in 4.3.8. SPLS may also recommend removal of a PC member from the roster of one or more PCs due to a conflict of interest (defined in Annex A) or a violation of the ASHRAE Code of Ethics by submitting a recommendation and justification in writing to the MOS.~~

BACKGROUND: There's no requirement in PASA that places the responsibility on the chair to provide/procure justification for removing PC members for cause. PC Chairs Guide to PASA simply refers to a sample letter, and a chair may recommend removal. Currently, some PC Chairs are expecting ASHRAE membership staff to procure the justification. This is the practice that ASHRAE staff has been following and enforcing.

The lead in information in the sample letter states “the PC Chair must notify the PC member in writing of his/her intent to recommend removal for cause and the reasons why”, then outlines the removal process. It has good guidance information for the PC Guide to PASA, but requirements/guidance/recommendations are buried in a sample letter (not in procedure). This proposed change moves the requirement in the sample letter to the procedures. This will have to go out for public review at ANSI before being finalized.

TechC VOTE: 11-0-0, CNV

M9

It was moved by Art Geisler that:

Tech Council recommend to the Board that the changes to the ASHRAE Rules of the Board (ROB) be approved as shown below (in strike-through and underline).

2.423.2 MEMBERSHIP

2.423.2.1 Composition

The members of this committee are as follow

- A. Maximum of fifteen (15) voting members, including a chair and a vice chair;
- B. Voting members shall include:
 - 1. ~~a One~~ past member of Standards Committee
 - 2. ~~a One~~ past member of Research Administration Committee
 - 3. ~~a One~~ past member of Members Council
 - 4. ~~a One~~ past member of Environmental Health Committee
 - 5. ~~a One representative of the home/multi-family building/remodeling industry or other residential industry segments builder or someone representing the home building industry~~ a One representative of the home/multi-family building/remodeling industry or other residential industry segments builder or someone representing the home building industry
 - 6. ~~a Two current or past chairs or other committee officers of a technical committee or standards project committee involved in residential issues~~ a Two current or past chairs or other committee officers of a technical committee or standards project committee involved in residential issues
 - 7. ~~a One~~ member from outside the U.S. and Canada
 - 8. ~~a Two representatives of at least one major residential stakeholder organizations such as for government agencies (as noted on RBC Stakeholder list available from staff liaison).~~ a Two representatives of at least one major residential stakeholder organizations such as for government agencies (as noted on RBC Stakeholder list available from staff liaison).
 - 9. ~~a One~~ past Society officer
 - 10. Members At-Large as needed.

BACKGROUND: One of the original recommendations from the Residential Adhoc Committee was that the newly formed RBC review the member requirements and recommend changes as needed to ensure that the committee included the appropriate diversity of membership. This recommendation also fulfils item #1 in the committee's MBO's for SY2018-19.

The changes recommended are designed to include a broader range of residential experience while still ensuring that the committee is staffed with the appropriate amount of leadership to fulfill the committee's responsibilities.

TechC VOTE: 11-0-0, CNV

B. Special Projects

M10 It was moved by Ken Fulk and seconded by Art Geisler that:

Tech Council commit a maximum of \$100K (100% of the \$100k estimated budget) for the FY 2019-20 budget for the development of a Standard 90.1-2019 User's Manual.

Background: Standard 90.1-2019 will be published later this year and the User's Manual needs to be updated to reflect the changes in the standard. Starting with the previous edition, the 90.1 User's Manual is now part of the ASHRAE Technology Portal which allows the standard and the user's manual to be viewed online side by side. Subscriptions to the technology portal are sold in addition to the print and electronic versions of the Portal.

Fiscal Impact: Outside funding has become increasingly difficult to obtain, but co-funding will still be solicited to offset as much of the cost as possible.

TechC VOTE: 11-0-0, CNV

M11 It was moved by Ken Fulk and seconded by Art Geisler that:

Tech Council commit a maximum of \$40K (100% of the \$40k estimated budget) for the FY 2019-20 budget for the development of a Standard 62.2-2019 User's Manual.

Background: Standard 62.2-2019 will be published later in this year and the User's Manual needs to be updated to reflect the changes in the standard. The 2019 version of the standard will contain significant changes from the 2016 version, requiring a subsequent update to the user's manual.

Fiscal Impact: Outside funding has become increasingly difficult to obtain, but co-funding will still be solicited to offset as much of the cost as possible.

TechC Vote: 11-0-0, CNV

M12 It was moved by Ken Fulk and seconded by Art Geisler that:

Technology Council commit to the expenditure of the previously allocated \$52K in the FY 2018-19 budget for the development of a Standard 100-2018 User's Manual and request that the ASHRAE Board of Directors approve carry over of any unspent portion of this \$52K from FY 2018-19 to FY 2019-20, contingent upon the acquisition of \$23k in outside funding during FY 2018-19.

Background: The original user's manual request and funding were approved in January 2017 for Society Fiscal Year 2017-2018. A portion of the originally approved money, totaling \$52,000, was carried over into Society Fiscal Year 2018-19. Due to some delays, the project did not go out for bid until summer 2018, after the close of Society Fiscal Year 2017-2018. As a result, only the \$52,000 is now available in the budget to fund this project. Two proposals were received in response to the RFP, both at roughly \$75,000, leaving ASHRAE with a \$23,000 budget shortfall for the Standard 100 User's Manual. The Board of Directors reviewed a request for this additional \$23k in Houston and did not approve this request, suggesting that the Council should review current priorities and find the additional funds accordingly. In order to proceed with the development of the User's Manual, additional funding needs to be identified and allocated either from ASHRAE (Tech Council Budget), or through outside funding.

Fiscal Impact: A potential source of outside funding has been identified from BC Hydro in British Columbia, Canada. However, the timing for the project is such that the \$52k will not be spent completely this fiscal year so any unspent portion of this amount would need to be carried over into FY 2019-2020. Approval by the BOD is required for carry-over of this currently budgeted funding in order to ensure that the expenditures are maintained in the appropriate ASHRAE accounting and auditing requirements.

TechC Vote: 9-2⁴-0, CNV

⁴ Doug Fick and one other member voted no with reason.

C. DRSC

M13 It was moved by Dennis Knight that:

Technology Council recommends to the BOD ExCom to revise the title, purpose and scope (TPS) of the *Airborne Infectious Diseases* Position Document (PD) as shown:

Title: ASHRAE Position Document on Airborne Infectious Diseases Aerosols

Purpose: Inform the ASHRAE membership and the public of the impact of HVAC systems on exposures to airborne the distribution of infectious diseases such as SARS, TB, Pandemic Flu (Avian Flu, etc.) and Legionellosis aerosols. These aerosols can subsequently be inhaled directly in the upper respiratory tract, deep into the lung, or may settle out on surfaces and become indirectly transmitted by resuspension or fomite contact.

Scope:

Provide the membership of ASHRAE and other interested persons with information on the health consequences of exposure to Airborne Infectious Diseases, and on the implications for the design, installation and operation of HVAC system. The document will address the impact of HVAC systems that are described in the Systems Handbook on the distribution of infectious aerosols that results in exposure.

The document will address built environments.

The document will be written with sufficient scientific rigor and references to be useful to specialists such as policy makers, researchers, architects and engineers; and containing material that will be useful to the general public.

BACKGROUND: A revision to this PD was authorized and is underway. The PD committee (7-0-0 CNV) and EHC (voted unanimously) voted unanimously to make the changes. The reason for that changes from the PD committee are that infectious aerosols can pose an exposure risk, regardless of whether the disease is classically defined as an “airborne infectious disease” or whether the actual exposure occurs through airborne, droplet or contact. The users of this position document should understand the importance of the HVAC system upon potential infectious aerosol distribution and how it can contribute to different sources of exposure in addition to the airborne route.

TechC Vote: 11-0-0, CNV

6. SPECIAL COMMITTEE/LIAISON REPORTS

A. TC Reorganization

Sara Maston was asked to give her report on FG Reorganization at this time and the full report can be found on Basecamp at ASHRAE Technology; Docs & Files; Meetings; 2019 1 16 Winter Meeting/Atlanta/7A 2019-01-15 Report on FG ReorganizationMaston-1

B. Planning Committee

Mick Schwedler reviewed the new Strategic Plan and asked for feedback from the council by a February 15th deadline. The full report can be found on Basecamp at ASHRAE Technology; Docs & Files; Meetings; 2019 1 16 Winter Meeting/Atlanta/ 08A Strategic Plan 2019 FNL 12-21-18

A. Strategic Plan

Mick Schwedler discussed the Strategic Plan explaining that the initiatives may result in additional plans that our Committees may want to pursue in the 2019-2024 timeframe. Mick also spoke about a request from the Finance Committee for Tech Council to furnish efficiencies in programs and projects, noting that these are not “cost cuts” but meant to identify possible improvements in how we do things and the related costs.

AI# 5: Request that staff create a prioritized list of possible efficiencies and initiatives to TechC leadership by Feb 5th and to Finance Committee by February 15.

8. DOT REPORT

Stephanie Reiniche gave a brief update on Technology staff activities and her full report can be found on Basecamp at *ASHRAE Technology; Docs & Files; Meetings; 2019 1 16 Winter Meeting/Atlanta/ 08 DOT Report.*

9. EXECUTIVE SESSION

The following motions were approved as part of executive session.

- M14** Tentative research project 1784-TRP, Repeatability and reproducibility assessment of ASHRAE Standard 52.2 as currently amended, be awarded to the Owen Air Filtration Consulting, LLC for a period of 18 months at a total cost to ASHRAE of \$150,000.
- M15** Tentative research project 1847-TRP, *Updating Climatic Design information for the 2021 ASHRAE Handbook, Standard 169, and the Handbook of Smoke Control Engineering*, be awarded to Klimaat Consulting & Innovation Inc. for a period of 24 months at a total cost to ASHRAE of \$144,000.

There being no further business to come before the Council, the meeting was adjourned.