



Shaping Tomorrow's  
Built Environment Today

**MINUTES**

**RESEARCH ADMINISTRATION COMMITTEE**

**OCTOBER 4 & OCTOBER 30, 2019**

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**OCTOBER 4 & OCTOBER 30, 2019**

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**PRINCIPAL MOTIONS  
RESEARCH ADMINISTRATION COMMITTEE  
OCTOBER 4<sup>TH</sup> & OCTOBER 30<sup>TH</sup>, 2019**

NO.	PAGE	MOTION
1	1	the draft minutes of the RAC 2019 annual meeting be approved as drafted.
2	2	1816-TRP, "Reporting the Energy Use and Heat Gain from Imaging Equipment", be awarded to Mazzetti for a period of 18 months at a total cost to ASHRAE of \$126,200.
3	2	1838-TRP, "Emerging gas-phase electronic filtration technologies and ASHRAE 145.2 test standard", to Air Chemistry Laboratory, Inc., for a period of 6 months at a total cost to ASHRAE of \$31,922.
4	3	the following eight TRPs listed be approved for release to bid in the fall 2019, 1683-TRP, 1780-TRP, 1799-TRP, 1817-TRP, 1824-TRP, 1830-TRP, 1852-TRP and 1865-TRP.
5	4	<u>1703-WS, Performance of Vapor Retarder Systems Used on Mechanical Insulation</u> , sponsored by; TC 1.8 (Mechanical Systems Insulation), co-sponsored by; TC 10.3 (Refrigerant Piping, Controls and Accessories), be <u>conditionally accepted</u>
6	4	<u>1831-WS, Validation of a Test Method for Applying a Standardized Frost Load on a Test Evaporator in a Test Chamber with an Operating Conditioning System</u> , sponsored by; TC 10.7 (Commercial Food and Beverage Refrigeration Equipment), be <u>conditionally accepted</u> .
7	4	<u>1835-WS, Characterizing the Performance of Induced Flow Stacks</u> , sponsored by TC 9.10 (Laboratory Systems), co-sponsored by; TC 5.1 (Fans), TC 4.3 (Ventilation Requirements and Infiltration) be <u>accepted</u> .
8	5	<u>1850-WS, Evaluation of ASHRAE's Design Day Procedure Against Recorded Weather Data - TC 4.2 (Climatic Information); Co-Sponsors: TC 4.1 (Load Calculation Data and Procedures), TC 6.5 (Radiant Heating and Cooling)</u> , be <u>conditionally accepted</u> .
9	5	1180-RP, "Duct Design Guide", use the remaining accrued funds in the amount of \$7,984, to help fund the ASHRAE Foundation's "Herman & Dorothy Behls Travel and Cert" fund.
10	5	active 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 granted a funded extension in the amount of \$18,400 in order to add medical garb to the project.
11	5	1855-TRP, <i>Determination of the Impact of Combustion Byproducts on the Safe Use of Flammable Fluorinated Refrigerants – Part 1</i> be awarded to Gradient LLC, at a total cost to ASHRAE of \$41,000 for a period of 4.5 months. Letter ballot vote: 10-0-3-1 (CNV)
12	5	<u>1856-RTAR, Moisture Tolerance and Effects in CO2 Refrigeration system</u> , sponsored by TC 3.3 (Refrigerant Contaminant Control), be <u>accepted with comments</u> .
13	6	<u>1858-RTAR, Evaluation of HVAC Ventilation Effectiveness in Reducing Semi-Volatile Organic Compounds (SVOCs) in Indoor Spaces</u> , sponsored by TC 2.3 (Gaseous Air Contaminants and Gas Contaminant Removal Equipment), be <u>accepted with comments</u> .
14	6	<u>1863-RTAR, A Toolkit for the Evaluation of the Life Cycle Energy and Greenhouse Gas Emissions for Buildings, Building Components and Equipment</u> , sponsored by TC 2.8 (Building Environmental Impacts and Sustainability), be <u>rejected</u> .

**RESEARCH ADMINISTRATION COMMITTEE  
OCTOBER 4<sup>TH</sup> & OCTOBER 30<sup>TH</sup>, 2019  
(CONTINUED)**

NO.	PAGE	MOTION
15	6	<u>1885-RTAR</u> , <i>Solar PV Design Guide for the Building Professional Including HVAC and Building Interactions</i> – TC 6.7 (Solar and Other Renewable Energies); co-Sponsored by TC 1.9 (Electrical Systems), be <u>accepted with comments</u> .
16	6	<u>1886-RTAR</u> , <i>Kinetic and Mechanistic Study of the Breakdown and Interactions of HFO Refrigerants</i> – TC 3.2 (System Chemistry), be <u>accepted as-is</u> .
17	6	<u>1887-RTAR</u> , <i>Energy Use in Indoor Plant Environments</i> - TC 2.2 (Plant and Animal Environment), be <u>accepted with comments</u> .
18	6	<u>1888-RTAR</u> , <i>Maximizing efficiency of energy conversion technologies of buildings via exergy-based analysis</i> . – TC 7.4 (Exergy Analysis for Sustainable Buildings), be <u>accepted with comments</u> .
19	6	<u>1889-RTAR</u> , <i>Graywater use in Healthcare Facilities; determining risk and appropriate design responses</i> – TC 9.6 (Health Care Facilities), be <u>accepted with comments</u> .
20	6	<u>1890-RTAR</u> , <i>Minimum flow velocities for purging air and debris from hydronic piping systems</i> – TC 6.8 (Geothermal Heat Pump and Energy), be <u>accepted with comments</u> .

**New Action Items  
Research Administration Committee (RAC)  
Annual Meeting 2019**

<b>Action #</b>	<b>Responsibility</b>	<b>Summary of Action</b>	<b>Status</b>
1	Staff	Post to the ASHRAE webpage the 2018-19 work statement author list.	<b>Complete</b>

**Carry-Over Action Items  
Research Administration Committee (RAC)  
Annual Meeting 2019**

<b>Action #</b>	<b>Responsibility</b>	<b>Summary of Action</b>	<b>Status</b>
1	Wilkins, Yashar, Eichelberger,	Write up proposed changes to the RAC MOP that research liaisons should not be research authors.	On-going
2	Staff	Continue to collect project cost data for the new research project estimating guide.	On-going
3	MORTS	Set up new RAC member training session in July.	Complete
4	MORTS	Poll for two RAC fall web meetings once TechC fall meeting date is set.	Complete

**RECURRING ACTION ITEMS  
(EACH MEETING)**

<b><u>Responsibility</u></b>	<b><u>Summary of Action</u></b>
Chair	Report to Technology Council on RAC's MBO Status.
Research Liaisons	Remind all TC chairs and research subcommittee chairs in section that a draft of all Work Statement and RTARs, and all later versions should be sent to their Research Liaison for review before information is passed on to the Manager of Research.
RPS (Primary) RAS (Secondary)	Review RTARs
RAS (Primary) RPS (Secondary)	Review Work Statements
RAS (Primary) RPS (Secondary)	Review TRPs and URPs
RPS (Primary) (Secondary)	Review and revise the Society's Research Implementation Plan based upon accepted RTARs.
Subcommittee Chairs	Report Status of assigned MBOs.
Staff	Distribute copies of Technology Council's Action Items and Motions affecting RAC.
BOD ExO	Report to the RAC Chair BOD's Actions and Motions affecting RAC.
Staff	Forward international URPs to RAS Chair in addition to the cognizant TC and Research Liaison.

**RECURRING ACTION ITEMS  
(ANNUAL MEETING)**

<b><u>Responsibility</u></b>	<b><u>Summary of Action</u></b>
Chair	Invite new RAC members to meeting and any training sessions at meeting.
Incoming Chair	Finalize MBOs and roster assignments. Set date for fall meeting.

**RECURRING ACTION ITEMS  
(WINTER MEETING)**

<b><u>Responsibility</u></b>	<b><u>Summary of Action</u></b>
RPS	Plan workshop for new RAC members at the Annual meeting.

RPS	Review Grant-In-Aid Applications
RPS	Review New Investigator Award Nominations
RPS	Review Homer Addams Award Nominations
MORTS	Prepare semi-annual report to RAC by May 15.
RAC	Decide if spring meeting is needed and set date for spring meeting.

**RECURRING ACTION ITEMS**  
**(FALL MEETING)**

**Responsibility Summary of Action**

RAS	Plan Research Workshop for Winter Meeting
RLs	Review "Service to ASHRAE Research Award" nominations submitted TC chairs and select best nomination for RAC consideration.
MORTS	Prepare semi-annual report to RAC by December 15.

LIST OF ATTACHMENTS

ATTACHMENT 1: 1816-TRP Analysis Sheet  
ATTACHMENT 2: 1838-TRP Analysis Sheet





Shaping Tomorrow's  
Built Environment Today

## MINUTES

### RESEARCH ADMINISTRATION COMMITTEE OCTOBER 4 & OCTOBER 30, 2019

#### **MEMBERS PRESENT:**

David Yashar, *Chair*  
Christopher Wilkins, *Vice-chair*  
Michael Pouchak, *Chair RAS*  
Curtis Eichelberger, *Chair RPS*  
Ahmed Kashef, *RL Section 1.0 (Oct. 4<sup>th</sup> only)*  
William Hutzal, *RL Section 2.0*  
Stephen Kujak, *RL Section 3.0*  
David Claridge, *RL Section 4.0 (Oct. 30<sup>th</sup> only)*  
Dennis Loveday, *RL Section 5.0*  
William Murphy, *RL Section 7.0*  
Christopher Seeton, *RL Section 8.0*  
Paolo Tronville, *RL Section 9.0*  
Lorenzo Cremaschi, *RL Section 10.0*  
Trenton Hunt, *BOD Ex-Officio (Oct. 30<sup>th</sup> only)*

#### **GUESTS:**

*None*

#### **ASHRAE STAFF**

Michael Vaughn, *MORTS*  
Donna Daniel, *COORD*

#### **MEMBERS ABSENT:**

Omar Abdelaziz, *RL Section 6.0*  
Xudong Wang, *Consultant AHRTI*  
Hywel Davies, *Consultant CIBSE*

#### **A. CALL TO ORDER**

Chair Yashar called the meeting of the committee to order at 12:00 pm EDT, Friday, October 4, 2019, and reconvened the meeting to order at 11:00 am, EDT on Wednesday, October 30, 2019.

#### **B. REVIEW OF AGENDA**

The ASHRAE Code of Ethics is to be adhered to by those doing ASHRAE business whether or not they are an ASHRAE member. The link below will be provided in future agendas  
<https://www.ashrae.org/about-ashrae/adhrae-code-of-ethics>

#### **C. APPROVAL OF MINUTES**

It was moved and seconded that,

- (1) the draft minutes of the RAC 2019 annual meeting be approved as drafted.

**MOTION PASSED:** 11-0-1, CNV (Unanimous voice vote)

#### D. TRPS & URPS STILL PENDING AWARD DECISION

**1816-TRP**, *Reporting the Energy use and Heat gain from Imaging Equipment*, Sponsored by: TC 9.6 (Healthcare Facilities); Co-Sponsors: TC 4.1 (Load Calculation Procedures and Data) and TC 4.7 (Energy Calculations); Co-funding: None; Estimated Duration: 18 months; Estimated Cost to ASHRAE: \$150,000

**1838-TRP**, *Emerging Gas-Phase Electronic Filtration Technologies and ASHRAE 145.2 Test Standard*; Sponsored by: **TC 2.3** (Gaseous Air Contaminants and Gas Contaminant Removal Equipment); Potential Co-Sponsors: SSPC 62.1 and SSPC 145; Estimated Duration: 6 months; Estimated Cost to ASHRAE: \$40,000

It is moved and seconded that,

- (2) **1816-TRP**, “Reporting the Energy Use and Heat Gain from Imaging Equipment”, be awarded to Mazzetti for a period of 18 months at a total cost to ASHRAE of \$126,200. **Attachment #1**

**MOTION PASSED:** 12-0-0-1 CNV

It is moved and seconded that,

- (3) **1838-TRP**, “Emerging gas-phase electronic filtration technologies and ASHRAE 145.2 test standard”, to Air Chemistry Laboratory, Inc., for a period of 6 months at a total cost to ASHRAE of \$31,922. **Attachment #2**

**MOTION PASSED:** 12-0-0-1 CNV

#### E. TRPS THAT COULD POTENTIALLY BID FALL 2019

- **1566-TRP-C**, *Equations to Estimate Evaporation Rates from Heated Water Pools in Indoor Recreational Aquatic Facilities*; Sponsored by: **TC 8.10** (Mechanical Dehumidification Equipment and Heat Pipes); Co-Sponsors: TC 9.8 (Large Building Air-Conditioning Applications); Estimated Duration: 24 months; Estimated Cost to ASHRAE: \$150,000; Status: **Near ready to bid**
- **1683 -TRP-R**, *Experimental Evaluation of Two-Phase Pressure Drop and Flow Pattern in U-Bends with Ammonia*; Sponsored by: **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; Status: **Bidding now**
- **1716-TRP-C**, *Oil Concentration of Field-Installed Liquid Chillers with Flooded Type Evaporators*; Sponsored by: **TC 8.2** (Centrifugal Machines); Co-Sponsors: None; Estimated Duration: 12 months; Estimated Cost to ASHRAE: \$135,000; Status: **Near Ready to Bid**
- **1718-TRP-C**, *Development of a Method to Determine the Moisture Transport Through a Roof Shingle System Under Real Conditions*; Sponsored by: **TC 4.4** (Building Materials and Building Envelope Performance); Co-Sponsors: TC 1.12 (Moisture Management in Buildings), and SSPC 160 (Criteria for Moisture-Control Design Analysis  
in Buildings); Estimated Duration: 24 months; Estimated Cost to ASHRAE: \$160,000; Status: **Near Ready to Bid**
- **1740-TRP-R**, *Hydrogen Fluoride Capacity of Desiccants*  
Sponsored by: **TC 3.3** (Refrigerant Contaminant Control); Co-Sponsors: TC 3.2 (Refrigerant System Chemistry) Estimated Duration: 9 months; Estimated Cost to ASHRAE: \$120k; Status: **Near Ready to re-Bid**
- **1780-TRP-R**, *Test Method to Evaluate Cross-Contamination of Gaseous Contaminant within Total Energy Recovery Wheels*; Sponsored by: **TC 9.10** (Laboratory Systems); Co-Sponsors: TC 2.3 (Gaseous Air Contaminants and Gas Contaminant Removal Equipment), TC 9.6

(Healthcare Facilities), SSPC 62.1 (Ventilation for Acceptable Indoor Air Quality); Estimated Duration: 15 months; Estimated Cost to ASHRAE: \$200,000; Status: **Bidding now**

- **1789-TRP-R**, *Optical and Thermal Performance of Hollow Glass Block Units*; Sponsored by: **TC 4.5** (Fenestration); Co-Sponsors: None; Estimated Duration: 18 months; Estimated Cost to ASHRAE: \$197,000; Status: **Near Ready to Bid**
- **1790-TRP-R**, *Distribution of Water Between Vapor and Liquid Phases of LowGWP Refrigerants*; Sponsored by: **TC 3.3** (Refrigerant Contaminant Control); Co-Sponsors: None; Estimated Duration: 12 months; Estimated Cost to ASHRAE: \$100,000; Status: **Near Ready to Bid**
- **1797-TRP-C**, *Assessment of the A/B Toxicity Classification Used in Standard 34*; Sponsored by: **TC 3.1** (Refrigerants and Secondary Coolants); Co-Sponsors: None; Estimated Duration: 10 months; Estimated Cost to ASHRAE: \$75,000; Status: **Near Ready to Bid**
- **1799-TRP**, *Validation of Extrapolation of Performance Rating Test Results for Small Energy Recovery*; Sponsored by: **TC 5.5** (Air-to-Air Energy Recovery); Co-Sponsors: None; Estimated Duration: 18 months; Estimated Cost to ASHRAE: \$200,000; Status: **Bidding now**.
- **1817-TRP**, *Long-term Temperature Change of Ground Heat Exchangers*; Sponsored by: **TC 6.8** (Geothermal Heat Pump and Energy Recovery Applications); Co-Sponsors: None; Estimated Duration: 24 months; Estimated Cost to ASHRAE: 170k to 275k; Status: **Ready to Bid**.
- **1824-TRP**, *Accounting for the Barometric Pressure Impacts on Psychrometric Performance Testing of Unitary Air-Conditioning and Heat Pump Equipment*; Sponsored by: **TC 8.11** (Unitary and Room Air Conditioners and Heat Pumps); Co-Sponsors: SSPC 41 (Standard Methods for Measurement); Co-funding: None; Estimated Duration: 18 months; Estimated Cost to ASHRAE: \$150,000; Status: **Bidding now**
- **1830-TRP-R**, *Experimental Characterization of Aircraft Bleed Air Particulate Contamination*; Sponsored by: **TC 9.3** (Transportation Air Conditioning); Co-Sponsors: SSPC 161 (Air Quality within Commercial Aircraft); Estimated Duration: 18 months; Estimated Cost to ASHRAE: \$150k; Status: **Bidding now**
- **1852-TRP**, *Develop Performance Metric, Criteria, and Process to Measure and Predict Speech Privacy in High Performance Buildings*; Sponsored by: **TC 2.6** (Sound and Vibration Control); Co-Sponsors: TC 2.1 (Physiology and Human Environment) TC 4.4 (Building Materials and Building Envelope Performance); TC 9.6 (Healthcare Facilities) Estimated Duration: 24 months; Estimated Cost to ASHRAE: \$187,000; Status: **Bidding now**
- **1865-TRP** – *Optimizing Supply Air Temperature Control for Dedicated Outdoor Air Systems*; Sponsored by: **TC 1.4** (Control Theory and Application); Co-Sponsors: TC 8.10 (Mechanical Dehumidification Equipment and Heat Pipes); Estimated Duration: 24 months; Estimated Cost to ASHRAE: \$180,000; Status: **Bidding now**
- **1879-TRP-C**, *Foamability Properties of LGWP Refrigerant and Oil Mixtures*; Sponsored by: **TC 3.4** (Lubrication); Co-Sponsors: TC 8.1 (Positive Displacement Compressors); Estimated Duration: 12 months; Estimated Cost to ASHRAE: \$100,000; Status: **Near Ready to Bid**

It was moved and seconded that,

(4) the following eight TRPs listed be approved for release to bid in the fall 2019,

- **1683 -TRP-R**, *Experimental Evaluation of Two-Phase Pressure Drop and Flow Pattern in U-Bends with Ammonia*; sponsored by: TC 1.3 (Heat Transfer and Application); Co-Sponsors: TC 8.4 (Air-to-Refrigerant Heat Transfer Equipment)

- **1780-TRP-R**, *Test Method to Evaluate Cross-Contamination of Gaseous Contaminant within Total Energy Recovery Wheels*; sponsored by: TC 9.10 (Laboratory Systems); Co-Sponsors: TC 2.3 (Gaseous Air Contaminants and Gas Contaminant Removal Equipment), TC 9.6 (Healthcare Facilities), SSPC 62.1 (Ventilation for Acceptable Indoor Air Quality)
- **1799-TRP**, *Validation of Extrapolation of Performance Rating Test Results for Small Energy Recovery*; sponsored by: TC 5.5 (Air-to-Air Energy Recovery)
- **1817-TRP**, *Long-term Temperature Change of Ground Heat Exchangers*; Sponsored by: TC 6.8 (Geothermal Heat Pump and Energy Recovery Applications)
- **1824-TRP**, *Accounting for the Barometric Pressure Impacts on Psychrometric Performance Testing of Unitary Air-Conditioning and Heat Pump Equipment*; sponsored by: TC 8.11 (Unitary and Room Air Conditioners and Heat Pumps); Co-Sponsors: SSPC 41 (Standard Methods for Measurement)
- **1830-TRP-R**, *Experimental Characterization of Aircraft Bleed Air Particulate Contamination*; sponsored by: TC 9.3 (Transportation Air Conditioning); Co-Sponsors: SSPC 161 (Air Quality within Commercial Aircraft)
- **1852-TRP**, *Develop Performance Metric, Criteria, and Process to Measure and Predict Speech Privacy in High Performance Buildings*; sponsored by: TC 2.6 (Sound and Vibration Control); Co-Sponsors: TC 2.1 (Physiology and Human Environment) TC 4.4 (Building Materials and Building Envelope Performance); TC 9.6 (Healthcare Facilities)
- **1865-TRP** – *Optimizing Supply Air Temperature Control for Dedicated Outdoor Air Systems*; sponsored by: TC 1.4 (Control Theory and Application); Co-Sponsors: TC 8.10 (Mechanical Dehumidification Equipment and Heat Pipes)

**MOTION PASSED:** 12-0-1 CNV

#### **F. SERVICE TO ASHRAE AWARD NOMINATIONS**

RAC did not receive any nominations for the Service to ASHRAE award.

#### **G. WORK STATEMENT REVIEW**

Four work statements were submitted by the TCs for review. Three were conditionally accepted, and one was accepted as-is.

It is moved and seconded that,

- (5) **1703-WS**, *Performance of Vapor Retarder Systems Used on Mechanical Insulation*, sponsored by; TC 1.8 (Mechanical Systems Insulation), co-sponsored by; TC 10.3 (Refrigerant Piping, Controls and Accessories), be conditionally accepted.

**MOTION PASSED:** 12-0-0, CNV

It is moved and seconded that,

- (6) **1831-WS**, *Validation of a Test Method for Applying a Standardized Frost Load on a Test Evaporator in a Test Chamber with an Operating Conditioning System*, sponsored by; TC 10.7 (Commercial Food and Beverage Refrigeration Equipment), be conditionally accepted.

**MOTION PASSED:** 12-0-0, CNV

It is moved and seconded that,

- (7) **1835-WS**, *Characterizing the Performance of Induced Flow Stacks*, sponsored by **TC 9.10** (Laboratory Systems), co-sponsored by; TC 5.1 (Fans), TC 4.3 (Ventilation Requirements and Infiltration) be accepted.

**MOTION PASSED:** 12-0-0, CNV

It is moved and seconded that,

- (8) **1850-WS**, *Evaluation of ASHRAE's Design Day Procedure Against Recorded Weather Data - TC 4.2 (Climatic Information); Co-Sponsors: TC 4.1 (Load Calculation Data and Procedures), TC 6.5 (Radiant Heating and Cooling)*, be conditionally accepted.

**MOTION PASSED:** 10-0-0, CNV

#### **H. TIME SENSITIVE NEW BUSINESS**

It is moved and seconded that,

- (9) **1180-RP**, "Duct Design Guide", use the remaining accrued funds in the amount of \$7,984, to help fund the ASHRAE Foundation's "Herman & Dorothy Behls Travel and Cert" fund.

**MOTION PASSED:** 12-0-0, CNV

It is moved and seconded that,

- (10) RAC approved a motion 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 granted a funded extension in the amount of \$18,400.

**MOTION PASSED:** 10-0-0, CNV

**RECESS** - 2:00 PM, October 4, 2019

**RECONVENE** – 11:00 AM, October 30, 2019

It is moved and seconded that,

- (11) RAC approved a motion that **1855-TRP**, *Determination of the Impact of Combustion Byproducts on the Safe Use of Flammable Fluorinated Refrigerants – Part 1* be awarded to Gradient LLC, at a total cost to ASHRAE of \$41,000 for a period of 4.5 months.

**MOTION PASSED:** 10-0-3<sup>1,2,31</sup>, CNV

#### **I. BOD EX-OFFICIO & COORD. OFFICER**

BOD-Officio Trenton Hunt ??

#### **J. RTAR REVIEW**

RAC reviewed a total of nine RTARs submitted by TC/TGs for addition to the Society's Research Implementation Plan. One was accepted, seven were conditionally accepted, and one was rejected.

It is moved and seconded that,

- (12) **1856-RTAR**, *Moisture Tolerance and Effects in CO2 Refrigeration system, sponsored by TC*

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<sup>1</sup> Christopher Seeton voted on a motion at the MTG level.

<sup>2</sup> Stephen Kujak was the PES lead.

<sup>3</sup> David Yashar, chair not voting.

3.3 (Refrigerant Contaminant Control), be conditionally accepted.

**MOTION PASSED:** 8-3-1-2 (14), CNV

It is moved and seconded that,

- (13) **1858-RTAR**, *Evaluation of HVAC Ventilation Effectiveness in Reducing Semi-Volatile Organic Compounds (SVOCs) in Indoor Spaces*, sponsored by TC 2.3 (Gaseous Air Contaminants and Gas Contaminant Removal Equipment), be conditionally accepted.

**MOTION PASSED:** 10-1-1-2, (14) CNV

It is moved and seconded that,

- (14) **1863-RTAR**, *A Toolkit for the Evaluation of the Life Cycle Energy and Greenhouse Gas Emissions for Buildings, Building Components and Equipment*, sponsored by TC 2.8 (Building Environmental Impacts and Sustainability), be rejected.

**MOTION PASSED RPS:** 4-0-1-1 (6), CNV

It is moved and seconded that,

- (15) **1885-RTAR**, *Solar PV Design Guide for the Building Professional Including HVAC and Building Interactions* – TC 6.7 (Solar and Other Renewable Energies); co-Sponsored by TC 1.9 (Electrical Systems), be conditionally accepted.

**MOTION PASSED:** 10-1-1-2 (14), CNV

It is moved and seconded that,

- (16) **1886-RTAR**, *Kinetic and Mechanistic Study of the Breakdown and Interactions of HFO Refrigerants*– TC 3.2 (System Chemistry), be accepted as-is.

**MOTION PASSED:** 11-0-1-2 (14), CNV

It is moved and seconded that,

- (17) **1887-RTAR**, *Energy Use in Indoor Plant Environments* - TC 2.2 (Plant and Animal Environment), be conditionally accepted.

**MOTION PASSED:** 11-0-1-2 (14), CNV

It is moved and seconded that,

- (18) **1888-RTAR**, *Maximizing efficiency of energy conversion technologies of buildings via exergy-based analysis*. – TC 7.4 (Exergy Analysis for Sustainable Buildings), be conditionally accepted.

**MOTION PASSED:** 8-3-1-2 (14), CNV

It is moved and seconded that,

- (19) **1889-RTAR**, *Graywater use in Healthcare Facilities; determining risk and appropriate design responses* – TC 9.6 (Health Care Facilities), be conditionally accepted.

**MOTION PASSED:** 10-0-1-3 (14), CNV

It is moved and seconded that,

- (20) **1890-RTAR**, *Minimum flow velocities for purging air and debris from hydronic piping systems* –

TC 6.8 (Geothermal Heat Pump and Energy), be conditionally accepted.

**MOTION PASSED:** 9-0-2-3 (14), CNV

**K. REVIEW OF ACTION ITEMS**

None

**L. CHAIRS REPORT**

- a) Disposition of RAC Motions from Last Meeting – All motions passed at higher levels
- b) New and On-going Action Items Assigned by Tech. Council:
  - 1. TBD
- c) Discussion Items:
  - 1. PTAR process update
  - 2. RAP Launch
  - 3. RP-1180 remaining funds and ASHRAE Foundation "Herman & Dorothy Behls Travel and Cert" Fund
  - 4. Development of PES training module
- d) New Information Items:
  - 1. RP-1760 Funded Extension request
- e) MBOs

**M. CONSULTANTS REPORTS**

- a) AHRTI
- b) CIBSE

**N. UNFINISHED BUSINESS**

Review of Action Items and initiate a letter ballot of 1855-TRP.

**O. NEW BUSINESS**

None

**P. REVIEW OF NEW ACTION ITEMS**

None

**ADJOURNED**

The meeting of the Research Administration Committee adjourned at 1:02 PM, Wednesday, October 30, 2019.