

**MINUTES**  
**ASHRAE TECHNICAL COMMITTEE 6.3**  
**RESIDENTIAL AND LIGHT COMMERCIAL CENTRAL FORCED AIR HEATING AND COOLING SYSTEMS**  
**TC 6.3 Forced Air Heating and Cooling,**

**Tuesday, February 1, 2022**  
**1:00 p.m. – 3:30 p.m. PST**  
**Caesar’s Palace, Sorrento (P)**

**1. Call to Order – Review Title, Scope and Purpose of TC 6.3**

TC 6.3 is concerned with those central forced air systems used for residential and light commercial building comfort heating and cooling. Responsibility covers the design and performance of the entire system, including equipment, controls, ducts and the interactions of the system with building heating and cooling loads.

*The new title is pending approval from ASHRAE management.*

- Discussion on status of title change. Committee voted on change in Feb. 2020. Eric will inquire with ASHRAE on the status.

**2. ASHRAE Code of Ethics – Chair reviewed**

*In this and all other ASHRAE meetings, we will act with honesty, fairness, courtesy, competence, inclusiveness and respect for others, which exemplify our core values of excellence, commitment, integrity, collaboration, volunteerism and diversity, and we shall avoid all real or perceived conflicts of interests. (See full Code of Ethics: <https://www.ashrae.org/about-ashrae/ashrae-code-of-ethics> .)*

**3. Review Agenda**

- After Minutes approval, Chairman Berg moved to Standards SC first to convenience the Standard SC Chair availability.

**4. Roster – Chair reviewed the attendance; confirmed 7 voting members present.**

Name	Voting Attend	Employer	Voting Status	Appointed Yr	End Yr	Position
Eric Berg	Y	Lennox Industries	V	07/01/2021	06/30/2023	Chair
Andrew Hjortland		Johnson Controls	NV	07/01/2021		Vice Chair
Paul Haydock	Y	Carrier Corp	V	07/01/2019	06/30/2023	Secretary
Diane Jakobs	N	Rheem Mfg	V	07/01/2018	06/30/2022	Handbook SC Chair
Michael(?) Scott Creamer		Rheem Mfg	NV	07/01/2018		Program SC Chair
Roy Crawford		Johnson Controls	NV	07/01/2021		Research SC Chair
Mark Olsen		Lennox Industries	NV	07/01/2018		Standards SC Chair
Kevin Mercer		Rheem Mfg	NV	07/01/2021		SC Chair / MTG.VIC
George Yaeger	Y		V	07/01/2019	06/30/2023	Webmaster
Nicolas Aouad	Y	Xnrgy	V	07/01/2021	06/30/2025	Member
Lawrence Brand	Y	Frontier Energy Inc.	V	07/01/2021	06/30/2025	Member
Craig Grider	N	Intertek	V	07/01/2021	06/30/2025	Member
Jon Winkler	Y	National Renewable Energy Lab	V	07/01/2018	06/30/2022	Member

- 6 VMs present (quorum established, 5 needed)

- Discussion on balance and attrition on the committee, and Subcommittee Chair rollover
  - Rolling off as VM: Diane Jakobs, Jon Winkler
  - Rolling on available after Toronto: Andy Hjortland, Scott Creamer, Jeff Munk
  - Research SC Chair → Nicolas Aouad
  - Standards SC Chair → Kevin Mercer
  - Handbook SC Chair → Randy Palm

## 5. Minutes Approval from Chicago (Virtual) 2021 – No changes

- Motion / Second / Vote to approve minutes: P Haydock / L Brand / 5-0-0 (Chair not voting)

## 6. Announcements

- Updates from TC Chairs Breakfast and meeting, if any
  - Summer meeting June 25-29, Toronto
  - See external report regarding deadlines for Program submittals, etc.
  - See external report regarding Program Tracks for Toronto.
- Section 6 Liaison (Doug Reindl)
  - No Liaison report
- Liaison reports
  - No Liaison reports

## 7. Subcommittee Reports

- A. Handbook (Diane Jakobs)
  - No Handbook update.
- B. Program (Scott Creamer) – See Attachment 1
  - Seminar 14 cancelled in Las Vegas due to speakers unable to attend. Plan to move out to either Toronto (6/22) or Atlanta (2/23)
  - Suggestion Low Load Home Ventilation Strategies - connect with Bill Healy (NIST) (ref. Roy Crawford and Res Standing Committee)
  - Suggestion for Dual Fuel Heat Pumps
- C. Research (Roy Crawford)
  - RP1910 with focus on ASHRAE 103. Submitted to RAC and waiting on funding and bidding. Combines two topics: 1) the value of transient tests on overall efficiency, 2) thermostat impact on furnace performance
- D. Standards (Mark Olsen)
  - SPC 152 update (K Mercer) – Suggested that we consider evaluating how valuable this standard is for ASHRAE based on sales. Committee balance (due to disinterest) is a current issue and anticipated to be an issue with future revisions.
  - SPC 103 and SPC 193 – Completed revisions. Last steps or already in publication.
  - Proposal for MoT for Fault Detection Algorithms Used on Residential Air Conditioners and Heat Pumps (See Attachment 2). Submitted by Jeff Munk, ORNL. Suggested that this proposal be introduced to TC 8.11 based on the residential AC/HP equipment focus.
  - Proposal for Protocol Standard for Standard Representation of Residential HVAC Equipment Data for Third-Party Installation Tools and Fault Detection Systems (See

Attachment 2). Submitted by Jon Winkler. Discussion suggested that this proposal might have some overlap between TC6.3 and 8.11.

- Motion made by N Aouad / seconded by L Brand / 6-0-0 vote that the proposed standards (see Attachment 2) should be referred to TC8.11 for better placement.
  
- E. Website (George Yaeger)
  - Request for past minutes and agendas to update historical list on website. P Haydock to work with G Yaeger after meeting.
  
- F. Low GWP – MTG Report (Roy Crawford)
  - MTG is winding down. Most of the research (3 RPs 1884, 1806, 1855) are wrapping up and no new research is planned.
  
- G. MTG.VIC (Kevin Mercer)
  - This MTG is just getting started and there wasn't much to report. Opined the importance for TC 6.3 to be involved.
  
- H. Economizer Subcommittee report (Andrew Hjortland)
  - Recommended either disbanding or moving to TC 8.11. R Mowris will offer to chair if TC 8.11 has interest to accept the move.
  - Discussion on economizers for small package systems is not well known or utilized. Purdue Center for High Performance Buildings is beginning to work with economizers. A good test method would be valuable to the filed trade for measuring performance.
  
- I. TC 8.11 Load Based Testing Subcommittee report (Eric Berg)
  - TC 8.11 developing RTARs for determining accuracy of Load Based Testing in particular to humidity measurement. Some system performance mapping is being conducted at Purdue, Herrick Lab, by Dr. James Braun. RP for development method for modeling non-tested combinations. Also, RP for economizers (see Economizer SC Report)

#### **8. Future Roadmap – open discussion (Moderators: chair, Vice Chair, Secretary)**

- Open discussion on where this TC should go in the future
- Suggested that we figure out how to incorporate IAQ into the equipment. Is there any interest by the committee on IAQ, its performance and impact on equipment performance?
- Suggested that keying off the ASHRAE Epidemic Task Force that the committee look at developing the science and applications regarding equipment
- Also suggest a strategic plan for future with impending climate change

#### **9. Old Business**

#### **10. New Business**

#### **11. Adjourn - 3:30 PM PST**

*These draft minutes have not been approved and are not the official, approved record until approved by this committee.*

*PH 2/2/2022*



**Attachment 1**  
 TC 6.3 – Program Plan  
 Feb 2022

Meeting	Conference Paper Session	Seminar	Forum	Workshop
Las Vegas January 2022 Thermostat Effect on		Seminar 14 <i>[Cancelled]</i> – Thermostat Response Effect on AC Efficiency		
Toronto June 2022				
Atlanta February 2023		- <i>Dual Fuel HP</i> - <i>Low Load Home Ventilation</i>		
Tampa Bay June 2023				
Chicago January 2024				
Indianapolis June 2024				
Orlando February 2025				
Phoenix June 2025				

**Attachment 2**  
**TC 6.3 Standards**  
**Feb 2022**

<p>Proposal 1</p>	<p><b>Title:</b> MoT for Fault Detection Algorithms Used on Residential Air Conditioners and Heat Pumps</p> <p><b>Purpose:</b> This standard provides a method to evaluate the capability of fault detection algorithms to accurately identify the presence of faults on residential air conditioners and heat pumps and, if capable, assess its ability to accurately identify the type of fault.</p> <p><b>Scope:</b> (1) This standard applies to fault detection algorithms used by add-on smart tools or fault detection systems. (2) This standard applies to fault detection algorithms intended for use on single-stage, centrally-ducted air conditioners and heat pumps with a nominal capacity less than 65,000 Btu/h. (3) This standard applies to fault detection algorithms that utilize a snapshot of steady-state measurements to identify faults.</p>	 <p>FDD_MoT-new-std-proposal-form.pdf</p>
<p>Proposal 2</p>	<p><b>Title:</b> Standard Representation of Residential HVAC Equipment Data for Third-Party Installation Tools and Fault Detection Systems</p> <p><b>Purpose:</b> To improve the accuracy and ease of use for smart diagnostic tool and third-party fault detection systems by facilitating automated equipment data entry for HVAC contractors defining data elements</p> <p><b>Scope:</b> (1) This standard applies to any residential, forced air heating and cooling equipment. (2) This standard applies to any smart diagnostic tool or third-party fault detection system designed for residential equipment.</p>	 <p>HVAC_Data_Standard-new-std-proposal-fo</p>

**Attachment 3**  
**TC 6.3 Standards**  
**Feb 2022**

Informative Attendance List:

<b>Name</b>	<b>In Person / Virtual</b>	<b>Affiliation</b>	<b>Contact / other</b>
Eric Berg	In-person	Lennox Industries	eric.berg@lennoxind.com
Andrew Hjortland	In-person	Johnson Controls	andrew.hjortland@gmail.com
Paul Haydock	Virtual	Carrier Corp	<a href="mailto:Paul.haydock@carrier.com">Paul.haydock@carrier.com</a>
Scott Creamer	Virtual	Rheem	scott.creamer@rheem.com
Roy Crawford	In-person	Johnson Controls	roy.crawford@jci.com
Mark Olsen	Virtual	Lennox Industries	mark.olsen@lennoxind.com
George Yaeger	Virtual	Retired	george.yaeger@gmail.com
Nicolas Aouad	In-person	Xnrgy	n_aouad@hotmail.com
Larry Brand	In-person	Frontier Energy	lbrand@frontierenergy.com
Jon Winkler	Virtual	Nat. Renew Energy lab	Jon.Winkler@nrel.gov
Alex Fridlyand	Virtual	GTI	afridlyand@gti.energy
David Yuill	In-person	U of Nebraska	dyuill@unl.edu
Byron Horak	Virtual	Intertek	byron.horak@intertek.com
Jeff Munk	Virtual	ORNL	jeffrey.d.munk@gmail.com
Bill Roy	Virtual	Hayward	broy@hayward.com
Wayne Kraft	Virtual	Trane	wayne.kraft@tranetechnologies.com
Cacciotti, Anthony	Virtual	Intertek	
Springer, David	Virtual		
Will Kowald	Virtual	Lennox	Will.kowald@lennoxind.com
Kevin Mercer	In-person	Rheem	kevin.mercer@rheem.com
Shore, Andrew	Virtual		
Hanna Hoffman	Virtual		
Randy Palm	In-person	Allied Air	
Tom Gort	Virtual	Trane	Thomas.Gort@TraneTechnologies.com
Robert Mowris	Virtual	Verified	robert@verified.co
Matt Akins	Virtual		
Patrick Riley	In-person	Carrier	<a href="mailto:Patrick.riley@carrier.com">Patrick.riley@carrier.com</a>
Mark Bindus	In-person	Bindus	<a href="mailto:msb@bindus.com">msb@bindus.com</a>
Rong Cherian	In-person	AHRI	<a href="mailto:rcherian@ahrinet.org">rcherian@ahrinet.org</a>
Antonio Romeo	In-person	AHRI	<a href="mailto:aromeo@ahrinet.org">aromeo@ahrinet.org</a>
Shawn Ohara	In-person	SMACNA	<a href="mailto:sohara@smacna.org">sohara@smacna.org</a>
Harshad Inamdar	In-person	Rheem	Harshad.inamdar@rheem.com