



**ASHRAE** American Society of Heating, Refrigerating and Air-Conditioning Engineers Inc.

1791 Tullie Circle, NE • Atlanta, Georgia 30329-2305 ☎ 404-636-8400 • Fax 404-321-5478

**TC/TG/TRG MINUTES COVER SHEET**

TC/TG/TRG NO.: TC 9.01 ISSUE DATE: July 10, 2019

TC/TG/TRG TITLE: Large Building Air-Conditioning Systems

DATE OF MEETING: June 25, 2019 LOCATION: Kansas City, MO

MEMBERS PRESENT	TERM END	MEMBERS ABSENT	TERM END	ADDITIONAL ATTENDANCE
Alonzo Blalock Chair	2019	John L. Kuempel Jr, Program Sub-C Chair	2020	<b><u>Corresponding Members:</u></b> Mark Pavol Kelley Cramm Doug Cochrane Charles Henck, Standards Sub-C Chair, Secretary Lynn Werman <b><u>Liaisons / Staff / Ex-Officio Members:</u></b> Vance Payne, Section Head <b><u>Guests:</u></b> Weston Taubenfeld Kevin Edstrom Brendan Hall Jonell Watson Mukesh Khaltar John Karakash
Jay Eldridge, Vice Chair	2020	Rachel Romero, Webmaster	2019	
Steve Duda, Research/Honors and Awards Sub-C Chair	2021	R Lee Millies	2022	
Dennis Wessel	2020	John Molnar	2019	
John Vucci	2022	Jeff J. Traylor	2021	
Bill Artis	2022			
Mark Fly	2022			
Phil Trafton	2019			

**DISTRIBUTION: All Members of TC/TG/MTG/TRG plus the following:**

TAC Section Head: Vance Payne [vpayne@mail.ashrae.org](mailto:vpayne@mail.ashrae.org)

**Committee Liaisons As Shown On TC/TG/MTG/TRG Rosters (Research, Standards, ALI, etc.)**

Mr Michael R Vaughn PE, Manager Of Research & Technical Services [MORTS@ashrae.net](mailto:MORTS@ashrae.net)

Dr. Niels Bidstrup Standards Liaison [nbidstrup@grundfos.com](mailto:nbidstrup@grundfos.com)



**TC 9.01 Large Building Air-Conditioning Systems**  
*Meeting Minutes*

**Meeting Date: June 25, 2019**  
Kansas City, Missouri

**Call to Order**

Chair Alonzo Blalock called the meeting to order at 1:30 PM local time,

**Welcome and Introduction of Members and Guests**

Self-introductions of members and guests were made around the room as the attendance roster was circulated. The Chair welcomed all members and visitors. A quorum was achieved.

Voting Members:	7 Present, 4 Absent, Quorum was achieved
Voting Non-Quorum Members:	1 Present, 1 Absent
Corresponding Members:	5 Present
Society Liaisons:	1 Present
Staff Liaisons:	0 Present
Guests:	6 Present

*Note: Voting Non-Quorum members are voting members if present, but do not count against quorum if absent.)*

We have 8 of 12 members – quorum achieved

**ASHRAE Code of Ethics:** The chair reviewed the Code of Ethics

In this and all other ASHRAE meetings, we will act with honesty, fairness, courtesy, competence, integrity and respect for others, 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>.)

**Minutes from Atlanta 2019 meeting were reviewed**

Atlanta Minutes – A motion was made and second – 8/0/0 CV motion passed

**Agenda Comments / Updates (Blalock)**

No Additions to Agenda requested.

**Chair’s Comments and Section 9 Report (Blalock)**

- a. Vance Payne gave a brief update
- b. TAC is studying a reorganization of TC into smaller groups. Reorganization proposal is on TC9.1 base camp page.

**TC 9.01 is the responsible committee for the development of Handbook Chapters;**

- a. Chapter 1 – HVAC Analysis & Selection
- b. Chapter 2 – Decentralized Heating & Cooling



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- c. Chapter 3 – Central Heating & Cooling Plants
- d. Chapter 4 - Air Handling & Distribution
- e. Chapter 5 – In Room Terminals

**ASHRAE Liaison Reports**

TAC survey on reorganizing TCs.

**TC 9.01 Subcommittee Reports**

- a. **Programs** (Kuempel)
  - i. Orlando program Kelley has one program
  - ii. Austin program Dennis suggested the ASHRAE Headquarters renovation

**b. Honors and Awards (Duda)**

We congratulated our distinguished service and exceptional service recipients. – Attached is Steve’s report.

**c. Membership / Upcoming Roster Revisions (Vucci)**

- i. Jay Eldridge - Chair.
- ii. Mark Fly – Vice Chair.
- iii. Doug Cochran – Secretary.
- iv. New roster out July 1, 2019

**d. Standards (Henck)**

Guideline 22 – John is Chair – TPS approved - goal is January 2020 release for public review and final in June 2020.

**e. Handbook Subcommittee (McKew)**

Chapter votes

Chap 1 – HVAC Analysis & Selection	8-0-0
Chap 2 – Decentralized Heat & Cool	8-0-0
Chap 3 – Central Heat & Cool Plants	8-0-0
Chap 4 - Air Handling & Distribution	8-0-0
Chap 5 – In Room Terminals	8-0-0

**f. Research Subcommittee Breakfast Report. (Duda)**

MTG might be formed on Indoor Growth Rooms. We voted 7-0-0 CNV to have John Kuempel and Phil Trafton to represent TC 9.1.

Reviewed the Research committee meeting.

- 1. 6 RTARs submitted this cycle: 1 accepted, 2 accepted with comment, 3 rejected.
- 2. 13 WS submitted this cycle: 1 accepted, 5 conditionally accepted, 7 returned to TC.



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3. Grant-in-Aid: For graduate students. 19 recipients selected from 50 applicants. Eligible for a \$5,000 grant, plus another \$5,000 if they attend the Conference, plus \$1500 if they write a paper.
4. New Investigator: Up to \$125k over 3 years to support a new (<5 year) research professor. One selection among 8 nominations.
5. Innovative Research Grant available, same amounts as New Investigator, but this one is for an out-of-the-box research idea. 15 Proposals submitted, short list of 4 Proposals selected; winner by Orlando.
6. Service to ASHRAE Research Award nominations due September 1.
7. New WS Template online – asking for a 100-word plain English abstract for publicity or marketing.
8. PMS Meetings are open to ASHRAE Members. Preference is for face-to-face meetings at the conference, scheduled far enough in advance to be included in the conference program book. Invite MORTS and Section RL to every PMS Meeting.
9. The Research Strategic Plan was last published in 2010 and RAC will begin generating a new Research Strategic Plan through a 10-member subcommittee (which will be identified by Orlando and will have a 3-year target).
10. All new PMS members must take PMS training. Offered online every spring and fall. Working on similar PES training.
11. About 10% of research is used to develop Special Publications (design guides, books, users manuals) using the RTAR process, which is not aligned very well with that type of submission.
  - a. RAC is producing a new procedure called the PTAR for Publication Topic Acceptance Request which will be similar in format but better aligned to publication-oriented research, and they largely operated outside of the Publications standing committee.
  - b. PTAR Form: Asks publication need, target audience, why funded versus volunteer effort. Cannot skip the PTAR stage because it will go to Publications Committee.
  - c. Similarly, there will be a new WSP form (Work Statement for Publication). RAC will review for procedural and administrative goals and Publications will review for technical. Then TPP and PP instead of TRP and RP.
  - d. WSP will ask Proposed Table of Contents instead of Scope/Technical Approach.
  - e. Will be used where commercial need exists but it represents too much effort for volunteers. RAC will evaluate that publication project is biddable and will come up with relevant evaluation criteria to compare bids.
  - f. In the pilot stage currently; talk to Section RL if interested.
12. RAC deadlines each year for WS and RTARs: March 15, May 15, August 15, and December 15.
13. Cost Estimating in RTARs and WS: Specialized task not within the specialty of most TC members; bidders tend to adjust their interpretation of their Proposal up or down to meet the estimate.
  - a. Average project size is \$131,000 over 18 months; average of \$1,500,000 awarded per year.
  - b. 95% of all projects are in the range \$48k to \$212k.



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- c. Mean 18.1 months duration with 95% fall within 6 to 30 months.
  - d. Average cost is \$7,200 per month with 95% falling in the range \$3,600 to \$12k per month of duration.
  - e. RAC is starting a database to help TC members with estimates. Costs may vary by region, type of research, type of research performer.
14. John Molnar will take over as Research Subcommittee Chair for TC 9.01 on July 1, 2019.

**g. Publications**

HVAC Systems Design Manual – TC voted 7-0-1 CV to approve the book.

**h. Website (Romero)**

All committee members are members of basecamp.

**Old Business:** Equipment life data base is active. Please add information.

**New Business:** All TCs that deal with equipment know that operators do not understand systems. Management does not provide the time or tools to train the operators.

**TC/SSPC Liaison Reports**

- TC 4.03 – Ventilation & Infiltration (Duda) – two research projects were finished RP 1635 and 1450
- SSPS 300 – Systems Manual will become handbook for building operators and should be published in about two weeks. Moving forward to blend information into Guideline 202. O&M documents for equipment, sequence of operation, basis of design.
- TC 5.01 – Fans (Eldridge) – R&D on efficiency of fans, RTAR for inlet flow measurement
- TC 5.06 – Control & Smoke (P Trafton) – no report.
- TC 6.01 – Hydronic and Steam Heating Equip. and Sys. (Karakash) – nothing to report
- TC 7.01 - Integrated Building Design (Romero) – nothing to report.
- TC 7.09 – Building Commissioning (Blalock) – Study on benefits of commissioning on existing and new buildings. Developing commissioning cost per SF for all buildings without regard for SOW.
- TC 8.07 - Variable Refrigerant Flow (Artis) – refrigerants in various spaces discussed. How do you meet Standard 15?
- TC 9.06 – Healthcare (Blalock) - No Report
- TC 9.08 – Building HVAC Applications: (Artis) – Working on handbook chapter on indoor growth facilities. Looking for 9.1 to co-sponsor programs.
- TC 9.09 Mission Critical (Pavol) - Standard 90.4 is listed as an alternate path for 90.1 compliance. GPC 1.6 starting work on commissioning guideline for data centers. Open Protocol Compute came to 9.9 to talk about working together.
- TC 9.10 – Laboratory Systems (Kuempel/Duda) - Had two seminars in KC.
- TC 9.12 – Tall Buildings (Wessel) – Program for Orlando on correcting effect of stack effect.



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- SSPC 15 Mechanical Refrigeration Safety (Vucci / Johnson) – Rewriting piping installation requirements. talked about adjoining spaces. Removing ammonia from the standard. Developing residential standard.
- SPC 188 Legionella in HVAC (Millies) – No Report.

**Next Meeting** (February 4, 2020, 1:00 pm EDT in Orlando, FL)

Adjournment at 3:30 PM

**I. Attachments:**

- a) TC 9.01 Honors & Award Report

**End of Minutes**

Respectfully submitted by:  
Charlie Henck, Secretary