



1791 Tullie Circle, N.E./Atlanta, GA 30329
404-636-8400

TC/TG/MTG/TRG MINUTES COVER SHEET

(Minutes of all Meetings are to be distributed to all persons listed below within 60 days following the meeting.)

TC/TG/MTG/TRG No. TC 9.10 DATE April 26, 2023

TC/TG/MTG/TRG TITLE Laboratory Systems

DATE OF MEETING February 7, 2023 LOCATION Atlanta

VOTING MEMBERS PRESENT	YEAR APPTD	MEMBERS ABSENT	YEAR APPTD	CORRESPONDING MEMBERS AND ADDITIONAL ATTENDANCE (INCLUDING VIRTUAL ATTENDEES)
Robert Weidner	2022	Mary Foutz	2019	Roland Charneux (CM)
Christine Reinders-Caron	2019	Lloyd Le	2019	Traci Hanegan (CM)
John Varley	2020			Doug Ross (CM)
Kelley Cramm	2022			Duncan Phillips (CM)
Ken Crooks	2021			Gordon Sharp (CM)
Glenn Friedman	2020			Matt Gaedtke (Guest)
Kishor Khankari	2020			Keith Hammelman (Guest)
Wei Sun (virtual)	2021			George Isherwood (CM)
Lou Hartman (virtual)	2022			Dave Rausch (CM)
Martin Stangl (virtual)	2019			Ben Fuller (CM)
Rachel Romero	2022			Rajendera Kapoor (CM)
Chris Kirchner	2022			Tom Smith (CM)
Charlie Henck	2022			Scott MacMurray (CM)
				Ryan Parker (CM)
				Jason Atkisson (CM)
				Walter George (Guest)
				John Castelvechi (CM)
				Otto Van Geet (Guest)
				Hoy Bohannon (CM)
				Kurt Monteiro (CM)

				Stephen Schoonbaert – (PCM)
				Matthew Lusardi (Guest)
				Michael Amstadt (CM)
				Gregory Marcus Gross (CM)
				Justin Garner (CM)
				Jim Coogan (CM)
				Victor Cincola (CM)
				Brendan Dingman (CM)
				Ken Kuntz (CM)
				Mark Malkin (CM)
				John Neubauer (CM)
				Victor Neuman (CM)
				Gaylon Richardson (CM)
				Ryan Soo (CM)
				Amanda Kirkeby (Guest)
				Bill Stump (CM)
				Duncan Green (PCM)
				Eddie Xue (Guest)
				Ian Li (Guest)
				Walker Jones (Guest)
				Ali Salim Shirazi (PCM)
				William Lin (PCM)
				Christine Benga (PCM)
				Jesse Fisher (Guest)
				Jordan Beardy-Singh (PCM)
				Deni Scar Sobek (Guest)
				Anne Juran (PCM)
				Danny Sanchez (CM)
				Patrick Carpenter (CM)
				Kyle Schumann (Guest)
				Larry Schoen (PCM)
				Mike Carl (PCM)
				Pierre Luc Baril (PCM)
				Brad Cochran (CM)

				Brent Fullerton (CM)
				Eric Ballachey (CM)
				Jacob Edmondson (CM)
				Guy Perrault (CM)
				Kristopher Geyson (PCM)
				Tyler Kee (PCM)
				Brendon Burley (CM)
				Wade Conlan (CM)
				Eric Fontaine (CM)
				Paul Lemestre (CM)
				Chris Malanga (CM)
				Kurt Rindoks (CM)
				Andrew Stout (CM)
				Mitch Swann (CM)
				Ryan Ellis (Guest)
				John Diekmann (Guest)
				Dylan Nev (Guest)
				Dave Vanweerdil (Guest)
				Mo Afshin (Guest)
				Michael Loeppky (Guest)
				Mark Richards (Guest)
				Kin Shifflet (Guest)
				Steven Graves (Guest)
				Joy Cox (Guest)
				Alex Balyeu (Guest)
TAC Section Head: Brad Cochran			SH9@ashrae.net	
All Committee Liaisons As Shown On TC/TG/MTG/TRG Rosters (Research, Standards, ALI, etc.)			See ASHRAE email alias list for needed addresses.	
Mike Vaughn, Manager Of Research & Technical Services			MORTS@ashrae.net	

Note: These draft minutes have not been approved and not the official, approved record until approved by the TC.

CALL TO ORDER

Bob Weidner called the meeting to order at 3:09 PM EST.

CODE OF ETHICS COMMITMENT

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.

(Code of Ethics: <https://www.ashrae.org/about/governance/code-of-ethics>)

(Core Values: <https://www.ashrae.org/about/ashrae-s-core-values>)

TITLE, PURPOSE, SCOPE for TC9.10

Our purpose is focused on laboratories.

TC 9.10 is concerned with HVAC components for laboratory systems and their use therein. These components include but are not limited to air intakes, supply air conditioning systems, air distribution methods, laboratory fume hoods, biological safety cabinets, exhaust systems and exhaust discharge. The technical committee will address the unique requirements of all types of laboratories. These laboratories include but are not limited to nuclear, pharmaceutical/medical, general chemistry, and teaching. Additional TC 9.10 concerns are; (1) the reduction of energy usage in laboratory systems, (2) the monitoring of government regulations affecting laboratory operation.

SELF INTRODUCTIONS

Self-introductions were not conducted due to the large number of people in the room and in attendance virtually.

WEBSITE

Jim Coogan reported that the website needs some updating. He asked all members to look at the website and let him know what needs updating.

MEMBERSHIP

Guy took roll call for voting members. Twelve of 15 voting members are present. Quorum achieved. The following voting members will be rolling off June 30, 2023:

- Eric Ballachey
- Mary Foutz
- Christine Reinders-Caron
- Lloyd Le
- Martin Stangl

MEETING MINUTES

Kelley Cramm moved, and Rachel Romero seconded to approve the meeting minutes from the last two meetings. The minutes were approved unanimously.

ANNOUNCEMENTS

Kelley and Gordon were awarded the grade of Fellow.

Wade Conlan is set to be elected a Society Vice President.

Congratulations and a round of energetic applause was given to Kelley, Gordon, and Wade.

SECTION HEAD REPORT

Brad Cochran, Head for Section 9 gave his report. There is a new Task Group, TG9.Space looking at habitats on the moon and mars. They are working on research and programs on the history of habitats on Apollo capsules, etc.

The Task Force on Building Decarbonization is planning to publish 6 publications. The first is now available for free download.

TAC has been discussing how we can expand the reach of our standards internationally. Would like to make them more applicable to international members. Need to understand how many international members (those outside of North America) are participating in TCs. The new TC sign-in sheet includes a column to identify yourself as an international member.

Another idea from the Board of Directors and Tech Council is to form communities inside ASHRAE. The idea would be to encourage working toward common goals. This may be easier for Section 9 than some others since section 9 is a fairly cohesive group. Brad plans to meet with Section 9 TC chairs to facilitate an open discussion and identify commonalities.

You can contact Brad at:

SH9@ashrae.net
Asktae@ashrae.net

PROGRAM SUBCOMMITTEE REPORT

Christin Reinders-Caron provided a report. The committee met Jan. 30th. We have one sponsored and one co-sponsored session tomorrow.

Rachel gave a brief summary of the session abstract for Seminar 59. Forum 8 is at 9:45. Kishor is facilitating this session on air change rates. Everyone is encouraged to attend both sessions.

Tampa website is open for proposals. Deadline is February 27th. Conference paper timeline has been reduced from 9 months to 6 months.

Tracks and schedule for Chicago are in the minutes (attached). Chicago deadline is August 2nd.

Would like to consider a forum on energy savings you think you're getting but you're not. Idea is that a lot of calculations are done to show savings. Many times, the metrics used don't align between calculated and actual savings.

Consider a seminar on filtration and effectiveness. Particularly on room air cleaner effectiveness given various configurations and locations. Could co-sponsor this with another TC.

Design/Build vs. Design/Bid/Build Consider a forum for Chicago

Would like to put together a session on Three-D printing but have had trouble finding presenters.

Would like to identify some University case studies to put together a series of case studies for a seminar.

Rachel asked for volunteers who would like to chair or speak at future conferences.

Kishor is working on a conference paper on CFD modeling. He will be submitting it for Tampa.

See attached report for more information.

RESEARCH SUBCOMMITTEE REPORT

Bob W gave a report: RP 1780 Test Method to evaluate cross contamination of total energy wheels. We are closing in on completion.

1835 TRP Characterizing the performance of induced flow stacks. The Ohio State University was awarded this project. This is just kicking off.

Subcommittee meetings were held virtually prior to the meeting. Everyone is free to join these meetings. They are listed in the ASHRAE 365 app.

RP 1833 Air change rates is in process.

TC 9.7 has proposed a research project on labs in higher education. A representative from TC 9.10 has not been able to attend their meetings yet.

See attached report.

STANDARDS SUBCOMMITTEE

Justin is just getting his feet wet. Has no report at this meeting.

LAB CLASSIFICATION SUBCOMMITTEE

Danny Sanchez gave a report. Danny shared some information about the work of the subcommittee. "Classification of Lab Ventilation Design Levels" was published in 2018 and is available for free download from the ASHRAE website. The committee is looking at some revisions to the document. They have a target deadline of 2025 but may need to align with other ASHRAE publications, which may increase the timeline.

The committee met last week. Trying to refocus the subcommittee efforts. They hope to re-organize the document to make it more practical. Tom Smith noted that the table that defines the attributes of the LVDL is a little difficult to use. Hope to re-sort the table to make it easier to follow and align it with the design guide.

Plan to do some outreach with other organizations. Looking also at DL program to help with education.

See attached report.

STANDARD 110

Nathan Ho is the chair, but he was not present. Kurt Monteiro reported. They are looking at isopropyl alcohol or polypropylene as replacement for SF 6.

SPC 129 Measuring Air-Change Effectiveness

The title has been changed to Ventilation Effectiveness. Tom Smith is chair and reported that they are getting ready to publish a three-part report which will include a CFD model and a field test. They hope to move this forward this year.

DESIGN GUIDE

Ann Juran is the new chair of this subcommittee. The committee met last week and mostly focused on the general flow of the document and continuity of the chapters. A Table of Contents committee formed to look at this. Have performed a status update on all chapters. Chapter 6, Primary Air Systems needs a primary leader. and chapter 16 also needs a leader. Targeting a March 2025 completion date. Plan to meet every other month to stay on track. See attached report.

ASHRAE JOURNAL

Roland Charneux reported that the Journal ran an article in the July 2022 issue on a Technology Award for a low energy lab titled "High Performance Lab, Low Energy Impact". There was also an article in the June 2022 edition titled "Factors influencing Face Velocity for Fume Hood Containment". Roland asked the committee to think about articles they could write for the Journal. The IEQ Column is a good opportunity.

YEA AND INTERNATIONAL MEMBER RECOGNITION

Bob asked all YEA members to stand. The committee gave them a round of applause.

ALI COURSES

Laboratory Design Course – The Basics and Beyond – John Varley reported that Sunday was the 9th Winter meeting for the course. Had 40 attendees. The course went well. John renovated and reorganized the course material. John would like for Chicago to be the transition to a new instructor.

Jim Coogan asked for John to write a brief description of what it takes to teach the course. It's a three-hour course so it's a time commitment.

Laboratory Exhaust Course – Safe and Energy Efficient Design – Brad said this course was not offered at this meeting.

Laboratory Controls Course – This has been proposed but have not received feedback from ASHRAE.

LIAISON REPORTS

Bob stated he would like liaisons to provide a written report if possible so the TC can stay abreast of what's happening on other TCs.

TC 1.4 Control Theory and Application – Jim Coogan: No report other than Title 24 changes are affecting other reports.

TC2.2 Plant and Animal Environment- Henry is not present. No report.

TC 4.3 Martin Stangl was not in attendance. Ryan Porter reported that chapters 16 and 24 in the Fundamentals handbook will be updated. Airflow around buildings will also be updated.

TC5.1 Fans - Brent Fullerton was not present. Ken Kuntz reported that California Title 20 on fans and blowers will be taking effect soon. Induced flow fans are exempt from Title 20 but not from Title 24. DOE test procedure for industrial fans will be out soon.

TC5.3 Room Air Distribution– No liaison. Kishor stated there is nothing to report. Kishor agreed to be the liaison going forward.

TC7.6 Building Energy Performance – Pat Carpenter reported that there is not much going on related to labs. Decarbonization and energy efficiency are hot topics.

TC7.9 Building Commissioning – No liaison. Justin Garner was in the meeting but said there was no content related to labs. Justin agreed to be the liaison going forward.

TC9.2 Industrial Air Conditioning and Ventilation No liaison. No report.

TC9.6 Healthcare Facilities – Traci Hanegan said there's nothing new that hasn't already been reported. Tom Smith sat in on Standard 170 and there was discussion of stack discharge height. Accepted some changes to the description of the definition of stack height. He thinks this committee should review and comment on the standard when it comes out for public review. Brendon Burley said please talk to him about any comments you have on the standard.

TC9.7 Educational Facilities – Keith Hammelman reported that they have been busy. They issued a design guide for educational facilities. Have been reviewing the RTAR associated with lab classification. They have been discussing Maker Spaces and 3-D printing. Check out the TC website to learn what they discussed.

TC9.11 Clean Spaces – Roland Charneux reported issuing an RTAR on energy consumption in clean rooms. Working on a design guide for energy efficiency in cleanrooms.

MTG ACR – Kishor said Jim Coogan can report. Jim represents TC9.10 to this committee. There's a work statement being produced aimed at what else matters besides air change rates. What affect does ventilation effectiveness have? There's also a white paper being produced on air change effectiveness. Standard 241P on Pathogen mitigation – this MTG is involved in this effort.

62.1 Ventilation for Acceptable IAQ – Brendon Burley is the chair and reported that their agenda was dominated by requests for interpretation, particularly around space contaminants. Brendon is opposing changes to how labs are handled in the standard. If the institution has an EH&S officer guiding the ventilation strategy, they should not fall under 62.1. Tom suggested they use the same language in ANSI Z9.5 so the standards are aligned. Guideline 42.P, "Enhanced Indoor Air Quality in Commercial and Institutional Buildings" is out for public review. They also issued a revision to humidity requirements. They are maintaining the dewpoint limit. Added a requirement for control during occupied hours.

90.1 – Jason Atkisson reported that there's a bunch of addenda coming out on the 2022 standard. Task force for decarb is putting some requirements on 90.1. Looking into operating carbon reporting. This will be in an informative appendix but may become part of the standard for the next issue. 90.1 now has targets for energy projecting out to the future. This is due to carbon reduction targets. Also, will have renewable requirement in the future. Refer to attached report.

Epidemic Task Force – Brad Cochran reported they are winding down. Work will be distributed to appropriate TCs. Toronto was likely the last meeting for the ETF.

SMACNA – No liaison. No report

NFPA 45 – Ken Crooks reported that the new 2023 edition of NFPA 45 is delayed from the previously reported timeline due to a "Certified Amending Motion" being made. This motion will be reviewed at NFPA's Technical Meeting, late June in Las Vegas. The amending motion adds a new section with new text describing the materials of construction for "case furniture" and required flammability ratings. Release of the new 2023 edition should follow within months of NFPA's Technical Meeting.

NSF – Frank Spevak was not present. No report

ISPE – No liaison. No report

ANSI/ASSP Z9.5 – This has recently changed to ASTM. ASSP is no longer involved. There is an ASTM Z9 committee of which Z9.5 is a subcommittee. Jim Coogan is chair of Z9.5 subcommittee. Revised standard was published in April 2022. Jim Coogan was instrumental in getting this published. Jim thinks we should aim for an updated version to be published in 4 years, not ten years.

I2SL – Gordon reported that the I2SL annual conference will be in Anaheim in October. Everyone is invited. New this year will be Education Week which will be virtual and will use presentations from the conference in addition to new content. Hope to get some international participation. Education Week will be April 25-27. Call for papers for the main conference will be coming out soon. Decarbonization: I2SL has developed a tool called Labs2Zero to use as a benchmarking tool for carbon and energy reduction measures. I2SL is looking for volunteers to help with all aspects of the effort. You can sign up to help on the I2SL website.

Title 24 – Glen Friedman reported there is a prescriptive section that discusses covered processes. Laboratory requirements are covered here. There are several requirements. Committee members may want to review.

NEW BUSINESS

None.

ADJOURN

It was moved and seconded to adjourn at 5:47 PM EST