



Shaping Tomorrow's
Built Environment Today

ASHRAE TC 9.2 – Industrial Air Conditioning and Ventilation Committee

February 7, 2023 Meeting Minutes – Atlanta Winter ASHRAE Meeting

- 1) The meeting was called to order at 1:05PM eastern time. Chair Duncan Phyfe gave the Opening Remarks and read the ASHRAE Code of Ethics:

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.

- 2) The Agenda was reviewed – no changes were made to the agenda.

Brad Cochran (TAC Section Head 9) gave the following opening update – Get in your activity form after the meeting. There is also a self-evaluation form if you want to go through with the membership but by the end of February is fine. Once you have a chance to go through the roster, don't hit submit, just save and then chairs will get together with Brad and talk about it. Formed multi-disciplinary task group 9 with first meeting yesterday and hitting the ground with research and planning on a seminar in Tampa on the history of space vehicles and habitats. TF on building and decarb has published its first of a series of standards that is available for free and partially funded by DOE. One of the new initiatives coming down from above is a new international standard interaction task force. The goal is to make ASHRAE more available throughout the world and make it more reactive to what is happening around the world. One of the first things is to get a good idea of how active our international members are. Another thing from the board, every year the board puts together the strategic initiatives. The board is looking for a way to bring the strategic initiatives down to the TC level. They want the TCs to tell the board which initiatives are being worked toward. Expect by Tampa that we will start seeing some of those directives coming down from the board on what the TCs should be working on. Having a mid-year meeting of the chairs is something that is being considered. Maybe April and October they are considering having a meeting where the chairs can get together. That is all Brad has if anyone has any questions SH9@ashrae.net or asktac@ashrae.net. TC 9.2 Chair (Duncan) will get activity sheet to Brad after meeting.

- 3) There were self-introductions of all Members and Guests. Duncan Phyfe gave instruction on the use of the sign-in sheet in the Chat box.

First Name	Last Name	Email Address	Mobile #	Affiliation	Membership	YEA Member	Internat	Hybrid Attendance
Bill	Lampkin	Bill.lampkin@greenheck.com	715-432-6825	Greenheck Fan - industrial damper group	TC Corresponding Member	No	No	In Person @ Omni CNH
Eileen	Jensen	nesnejen@gmail.com	5033295485	corresponding member	TC Corresponding Member	No	No	In Person @ Omni CNH
Mark	Miller	mfmiller55@gmail.com	608.658.1132	TCS Basys	TC Corresponding Member	No	No	In Person @ Omni CNH
Douglass	Abramson	doug314103@aol.com		Retired	TC Corresponding Member	No	No	In Person @ Omni CNH
George	Gruetzmacher	george.gruetzmacher@slh.wisc.edu	608-712-5164	UW Madison / WI State Laboratory of Hygiene	TC Corresponding Member	No	No	Virtual via Teams
Erich	Binder	ebcl@shaw.ca	1-403-836-0832	Erich Binder Consulting Limited	TC Corresponding Member	No	No	Virtual via Teams
Scott	MacMurry	Jscottmacmeng@gmail.com	803-257-4623	Savannah River Nuclear Solutions	TC Corresponding Member	No	No	Virtual via Teams
John	McKernan	mckernan.john@epa.gov	5135697415	US EPA	TC Corresponding Member	No	No	Virtual via Teams
Ryan	Gallagher	Gallagr1@ferris.edu		US Veterans Affairs	TC Corresponding Member	No	No	Virtual via Teams
Baalaganapathy	Manohar	bmanohar@ssoe.com	3528880685	Ssoe	TC Corresponding Member	Yes	No	In Person @ Omni CNH
Kaleb	Rodenhausen	kaleb.rodenhausen@jedunn.com	8165896041	JE Dunn	TC Guest	No	No	In Person @ Omni CNH
Brad	Cochran	Sh9@ashrae.net	9702271462	CPP	TC Guest	No	No	In Person @ Omni CNH
Jonathan	Hale	jon.h@airsystemscorp.com	336.403.9622	ACGIH Industrial Ventilation Committee Chair	TC Guest	No	No	Virtual via Teams
Tim	Friend	Timothy.Friend@kiewit.com		Kiewit Engineering	TC Guest	No	No	Virtual via Teams
Shaun	Nienhueser	shaun.nienhueser@hdrinc.com	402-885-1821	HDR	TC Provisional Corresponding Member	No	No	In Person @ Omni CNH
Annette	Dwyer	Annette.dwyer@munters.com	239-218-5477	Munters Corporation	TC Provisional Corresponding Member	No	No	Virtual via Teams
Ehab	Abu-Ramadan	ehab.abu-ramadan@rwdi.com		RWDI	TC Provisional Corresponding Member	No	No	Virtual via Teams
Duncan	Phyfe	dphyfe@aldenlab.com	9788270198	Alden	TC Voting Member	No	No	In Person @ Omni CNH
Deep	Ghosh	dghosh@southernco.com	205-746-0101	Southern Nuclear	TC Voting Member	No	No	In Person @ Omni CNH
Duane	Hammond	ah20@cdc.gov		CDC/NIOSH	TC Voting Member	No	No	In Person @ Omni CNH
Kevin	Marple	kmurple@benzco.com	503-201-2169	Member	TC Voting Member	No	No	In Person @ Omni CNH
Erik	Ostberg	Erik.ostberg@bp.com	9076320792	ASHRAE	TC Voting Member	No	No	Virtual via Teams

4) Approval Meeting Minutes for Summer Meeting

Duncan Phyfe presented the draft meeting minutes from the Summer Meeting. Duane Hammond moved to approve and Deep Ghosh 2nd that motion. Approved unanimously, CNV.

5) Quorum Status Determination of Meeting Quorum

6 voting members were present, quorum was established.

Effective 7/1/2022 - TC 9.2 Voting Members			8
Position	Position	Email	Term
Duncan Phyfe	Chair	dphyfe@aldenlab.com	2022-24
Deep Ghosh	Standards	dghosh@southernco.com	2020-24
Matt Kampen		matthew.kampen@conocophillips.com	2020-24
Erik Ostberg		Erik.Ostberg@bp.com	2021-25
Duane Hammond	Secretary	ahz0@cdc.gov	2022-26
Steve Still	HandBook	stevesill1966@hotmail.com	2022-26
Evan Reese	HandBook	emreese@burnsmcd.com	2022-26
Kevin Marple		kmarple@benzco.com	2022-26

6) Membership

Marple/Phyfe

Over the next couple of months, Duncan is going to e-mail members to clean up the membership roster. TC 9.2 has 14 young engineers at this point. The biggest thing for membership of this TC is that we don't have a vice-chair. Eileen Jensen volunteered to be vice-chair, motion was made, 2nd and all voting members were in favor. Unanimous that all 6 voting members approved Eileen Jensen as the new TC9.2 vice-chair.

Officer position to be filled:

- Vice-Chair: filled by Eileen Jensen
- Research sub-committee chair

Rooster Upgrades:

- Provisional Member Status upgraded to corresponding members
- corresponding members upgraded to voting members

YEA members

7) TC Chair Breakfast Meeting

Phyfe

Duncan – they are always looking for honors and awards. As a member of ASHRAE you can download the handbooks electronically free of charge. We have access to all past research projects, results, reports so take advantage of that. Someone mentioned that PubEd was going to be voting sometime today to do away with hardcopy. Members council addressed that this morning to get away from hardcopies getting away from pdf to online to protect intellectual property. Duncan shared the ASHRAE org chart from the chairs breakfast to see where we fit in as a TC. Standards has over 100 published standards and completed a lot of work.

8) Status of TC 9.2 Events & Activities

- Industrial presentation to Students Binder

Erich has been working on that. We have been talking about a national industrial ventilation course. Erich talked to PubEd and they would be interested in our TC putting together a course on that. Erich is putting together about 5 company presentations that he does and he is going to take some of that information and make presentations to the students and new people in the industry. Erich's goal is to have that ready for the July time frame.

- Cold Climate Conference 2023 – Anchorage, Alaska Binder
 - i. March 6-8

It will be in Anchorage, 2.5 days and about 150 people internationally that will be attending. Contact ASHRAE staff to help get plans in place if you are going.

- Severe Cold Climate 2023 – Fairbanks, Alaska Binder
 - i. March 9-10

A mini-conference on arctic communities but the hotel is already booked up but you can get another hotel and get a ride up.

- Epidemic Task Force Update McKernan

The last meeting of the ETF was June 27, 2022. They were working on ETF efforts. The ETF went from March 2020 to June 2022. COVID-19 Resources section of the website launched February 27, 2020. The press release announcing the formation of the Epidemic Task Force went out to the general public, members and major media on March 31, 2020. The ETF was closed/dissolved on the last meeting 6/27/2022. Epidemic Task Force generated 11,020,488,046+ (11 Billion 20 million) media impressions between March 2020 and June 2022. This represents the total eyeballs that have seen ASHRAE ETF content in some capacity since March 2020. As of June 2022, there have been 697 news articles and media requests in total. There were 697 news articles and media requests related to the ETF. The white paper that was developed generated about 2,000 downloads from that one document. The COVID-19 section of the ETF website since it launched had 713,000 page views.

Participation in this task force provided visibility for our group and was influential. Has anyone heard of 241P is the new standard that is going to be released on the virus. They have an enforceable standard that will be coming out in 6 months. It will be a non-ANSI guideline.

- Maker Space Working Group

Does anyone want to champion the Maker Space? Could fall under TC5.4. or we could keep it for a while.

Comments from the chat: 3D Printing

George G:

- The occupational standards and exposures are a place to start, but they would need to have a different exposure assessment, and have a different group of people

John McKernan:

- Restoration of parts of Notre Dame are planned using 3D printing.
<https://www.forbes.com/sites/startupnationcentral/2019/07/22/3d-printing-notre-dames-restoration-thinking-outside-the-14th-century-box/?sh=b0d0e5764576>
 - 3D Printing Notre Dame's Restoration: Thinking Outside The 14th Century Box Using 21st century technology that's already in the mainstream, we can literally breathe digital life into Notre Dame. What's more, we can do so by reusing the original materials destroyed by the fire.

9) ASHRAE Handbook – Applications

Reese/Sill

Bulk release of handbook came out in the summer. Here are the chapters to be updated. Evan sent it over and will set up some meetings to start so we are not doing this at the last minute.

- July Approved for publication:

Chapter 15	Chapter 18	Chapter 21	Chapter 22
Chapter 27	Chapter 28	Chapter 29	Chapter 30
Chapter 31	Chapter 32	Chapter 33	

- Next handbook updates:

10) Research Projects

Open Position

- Outside air intake study

Erich – In the cold climate aspect and the extreme one, Erich did some work in Saudi Arabia and the outdoor air intake with ice, rain, sand is critical in certain areas. After the conference in Alaska, Erich is going to have an opportunity to do some research at improving outside air intakes. Erich has looked at some of them and they are in the cold climate design guide. It would be good to do some research on some of them and see how they do in certain spaces. Final goal would be to update the cold climate design guide with research findings. Please get in contact with Erich and he can put together an RTAR. Erik volunteered to give Erich a hand in developing a plan going forward for the Tampa meeting. On Sand ingress, they have designed and built sand louvers for some of the sand ingress problems. Erich is going to get info together and start working on an RTAR. He will try to include info on hazardous gases in oil and gas. Consider wildfire smoke as a consideration. The life members club has some funds available, and if we need funds for anything we are doing we might want to ask them for funding help.

Kevin on research – When Kevin was on TC5.4 they were talking about research on 3D printers and Kevin is confident we talked about it here. We tried to sunset something on 3D printers but it is still on the list. TC5.4 mentioned they were going to either meet with another TC and we are not sure where this is going to fall. 2.3 might take the lead and 5.4 might co-sponsor. Maybe we should co-sponsor too. Jonathan Hale - ACGIH is asking for VS plates for 3D printing but one problem is they are generating particulate matter that can be explosive and can cause significant lung damage if it enters deep in the lungs. Jonathan Hale said they set one up similar to a firing range. There are approaches that are quite varied by size and scope and there are so many kinds that it makes it difficult for us to come out with a VS plate in the ventilation manual. George – material

variability, additive 3D is what we are talking about mostly but there is subtractive 3D. It is going to have to be sliced off into categories and attacked from that direction. Difficult to address the entire field. We throw our hat in with the other TCs and potentially offer to co-sponsor. Action item for Kevin to follow up with other TCs on this issue to see if we want to co-sponsor.

Baalaganapathy Manohar - Working with batteries and recycling plans. You need dry rooms for cathode battery manufacturing. Would ACGIH or this TC be interested in having standards for battery manufacturing. Deep suggested that we need to talk to the manufacturers and they need to participate so that we have their buy in and also so we have the expertise on our TC to do it. Would 2.3 be involved in this?

11) Standards Ghosh

- Formation and Approval of Standard 128 Committee

Standard for testing. What they want is every 5 years they want to affirm that standard. Deep had Eileen, Erich and about 6 people and what they want us to do is look at the standard to determine if it is still applicable. There is a form associated with it. And we can reaffirm or withdrawal, those are the options. And we can do that sometime between now and June. Eileen asked if we need to have a vote to establish a committee to do that. Deep suggested that we take a vote so we can have a minimum of at least four people. Deep moves to establish a committee to look at a standard 128 to see if it can be reaffirmed. Duncan second it. Five members remaining in the meeting all voted to approve the committee to reaffirm standard 128.

- IAQ Pathogen Mitigation Standard – skipped this since we already talked about it.
- IEEE_ASHRAE Guideline 21 convert to standard – this has been completed and the committee has been disbanded and Deep thanked all of the members that made the document a success. Deep suggested that we do not need to work toward converting to a standard. Deep will talk with Owen to determine since this is not ANSI and IEEE calls it a standard but we call it a guideline. Deep will have a discussion with him to see what it would take. It needs to have mandatory language to be a standard and we don't have that currently as it is written.

12) Program Sub Committee Foster

- Vent 2022 Special Publication Industrial HVAC
- Atlanta Submissions:
- Summer meeting 2023 - Tampa Bay

13) Webmaster Miller

14) Nuclear Subcommittee Scott MacMurray

Nuclear subcommittee met yesterday and discussed whether to disband the committee or not. There are two people who actively participate in the nuclear industry but they are retired. They took a vote to disband and they approved it. They are going to roll some of the things into TC9.2 main committee in the same way they did the powerplant subcommittee where things rolled into the main committee 9.2. If anything comes up they can form an ad-hoc committee to take up any specific issues. Deep suggested we take a vote here in the main committee. Deep made a motion to suspend the nuclear subcommittee. Discussion – if the level of participation has dropped to where it makes sense to disband, then it is appropriate but you are still going to have to have somebody help with updates to the handbook standard. If you want to have the design guide done then you can have a separate committee for the design guide without the nuclear subcommittee driving it. It just means that more decisions will be made in the main 9.2 committee rather than having the subcommittee supervising them. This now will just fall on the shoulders of 9.2 as a whole. We as a committee

took a vote and 6 voting members approved rolling things up to the main committee and no longer have the nuclear subcommittee.

DOE design guide. Scott will send to Duncan who will send to Duane the update but deadline in May. Revision was sent to publications in Spring 2020 (just before COVID). Was updated thru 2018/19 DOE guidance. DOE issued a major revision to requirements in the Spring of 2022. We are now out of date.

Design Guide – Guide submitted to Publications in Spring 2020. Edited document back to subcommittee in November 2021. Guide reformatted to meet current ASHRAE requirements (vs 1993 format) which had technical impact on document. Path forward is to resolve question/changes from Publications and incorporate any key changes due to update of associated DOE documents in Spring of 2022. Revised document to be completed by May 1st for TC 9.2 review. Needs to be voted on my main committee by May 15th. Goal to publish in 2023.

Additional nuclear subcommittee updates from the minutes: Handbook – Chapter with minor updates included in 2023 Handbook • CONAGT – Hybrid meeting held in January 2023. Next revision of code is scheduled to be released by June 2023. Code Inquiry related to damper blade length was discussed. ASHRAE TC 9.2 Nuclear Facilities Sub-Committee Agenda February 6, 2023 Hybrid 2 • NHUG – Met in Washington Summer 2022. Meeting details still be finalized for 2023 meeting. Looking at some time in August • NRC – Small Modular Reactor licenses/designs are working thru the system • DOE – HEPA filter supply chain (includes radial flow filters for Waste Treatment Plant and Size 8 HEPA filters for Waste Isolation Plant was mentioned. Other supply chain issues are expected with major projects at Hanford, Los Alamos and Savannah River. • ISNATT – Conference held in June 2022. Proceedings available on-line at ISNATT website. Work in progress to hold 2024 conference.

15) TC 9 Report Section Head

Cochran

Report was given near the opening of the meeting further up in the minutes.

16) Honors & Awards

Jensen

- Awards
- ASHRAE Fellows
- High Tower Award
- Nominations for Tech Committees / ASHRAE BOD

17) New Business

- ACGIH & ASHRAE Training - we will push this on along as Phil wasn't able to join.
- Other new business

George G is trying to put something together for the summer ASHRAE meeting: 1-hour seminar with 2-3 speakers, what we are doing is protecting people from contaminants in the air.

The Topic is: Industrial Ventilation, it's not Typical HVAC. There would be three parts: 1. Purpose of Industrial Ventilation (reducing contaminant exposures) instead of providing consistent conditioned air (temperature/humidity control for comfort). 2. Methods of Industrial Ventilation (dilution, displacement, and removal i.e Local Exhaust Ventilation) 3. Hoods and capture (they're not your kitchen range hood). 4. Ducts (they need to transport particles). The deadline for submissions is February 27. It is a performance in contrast with the comfort and humidity control that is another type of ventilation. How contaminants get removed and whether it is cleaning the air. Hoods and capture of contaminants which is not understood by most people. Something on ductwork and something on ducts that are transporting material rather than transporting the gas. Those four points are what are most useful in a seminar. George is most interested in the first one but could do all four but would like speakers that could talk about the others in whatever extent the committee could provide support for a 1-hour seminar. Reminding people that there is an updated ACGIH ventilation manual but that is not the purpose of the seminar. We have about until the 27th of February.

18) Next Meeting – June Summer Meeting – Tampa, FL

19) Adjournment – Motion made to adjourn, and meeting adjourned at 2:59pm Eastern time.