



1791 Tullie Circle, N.E./Atlanta, GA 30329
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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. 3.2 DATE August 22, 2022

TC/TG/MTG/TRG TITLE Refrigerant System Chemistry and Contaminant Control

DATE OF MEETING Tuesday, June 28, 2022, 3:30-6:00pm (EST) LOCATION Toronto (Hybrid)

Voting Members			Participation	
Name	Year	Affiliation	Present	Absent
Joe Karnaz - Chair	2023	Shrieve	X	
Valerie Lisi – Vice Chair	2022	Carrier	X	
Brad Boggess - Programs	2025	Emerson	X	
Casey Scruggs - Research	2023	Metalloid	X	
Ivan Rydikin - Handbook	2024	Daikin	X	
Greg Smith	2024	Honeywell	X	
Ed Hessell	2025	Lanxess		X
Julie Majurin	2023	AHRI	X	
Rosine Rohatgi	2022	Spauschus	X	
Jian Sun-Blanks	2022	Chemours		X
Justin Allemann	2024	Parker Hannifin		X
John Senediak	2022	Intertek	X	
Sheli Porter - Standards	2025	Stellar Laboratories		X
Non-Voting Members				
Steve Baker - Secretary		Emerson	X	
Dave Vincent - Webmaster		BVA	X	
Marc Scancarello – MTG Low GWP		Emerson	X	
Chris Campo - ALI		Shrieve	X	
Rashid Zakeri – MTG Sustainable RAC		Circle Presco	X	
DISTRIBUTION: All Members of TC/TG/MTG/TRG plus the following:				
TAC Section Head: Stuart Dols		SH3@ashrae.net		
All Committee Liaisons As Shown on the TC/TG/MTG/TRG Rosters (Research, Standards, ALI, etc.)		Chee Sheng Ow – Research Gerald Kettler – Standards		
Mike Vaughn, Manager of Research & Technical Services		MORTS@ashrae.net		

Minutes – TC 3.2 Refrigerant System Chemistry and Contaminant Control

1) Call to Order – Joe Karnaz

Chair Joe Karnaz called the TC 3.2 meeting to order at 3:30 pm on Tuesday, June 28, 2022 introducing himself and welcoming those attending in person and online. This meeting was also held virtually via the Zoom web application to accommodate those that could not attend in person.

A sign-up sheet was circulated among the in-person attendees and online attendees were requested to sign in using the Chat function to provide their name, affiliation, and email address.

2) ASHRAE Code of Ethics – Joe Karnaz

TC 3.2 Chair Joe Karnaz shared with all members and guests the Code of Ethics and that it is to be adhered to whenever at an ASHRAE meeting. Greg Smith also introduced ASHRAE's new Commitment to Care and stated its details are available on the website.

3) Confirmation of Quorum – For those present in person, self-introductions were done. Roll call of voting members online was conducted, and quorum was confirmed with 9 of 13 voting members present.

4) Approval of Agenda – Joe Karnaz

MOTION #1: to approve the 2022 Summer Annual meeting agenda was made by Brad Boggess and seconded by Rosine Rohatgi. Motion passed 8-0-0 CNV.

5) Approval of 2022 Winter Hybrid Meeting Minutes – Joe Karnaz

MOTION #2: to approve the 2022 Winter Hybrid meeting minutes for TC3.2 was made by Ivan Rydkin and seconded by Brad Boggess. Motion passed 7-0-1 CNV; John Senediak was not at 2022 Winter Hybrid meeting and abstained.

6) Report on TC 3.0 Chair Breakfast Meeting – Joe Karnaz

- WiFi Access for Toronto meetings – User: ASHRAE Password: Toronto100
- New Manual of Procedures (MOP) has been created
 - separated out MTGs from FGs
 - Now requires balance instead of recommending and Chair, Vice-chair and Voting Members need to be ASHRAE members, but Section Head still has discretion to waive.
 - www.ashrae.org/tac for more information.
- Atlanta February 4th-8th 2023 (Expo 6th-8th) Omni Hotel and Georgia World Congress Center
- August 9th 2022 Programs Due for Atlanta
 - www.ashrae.org/conferences/2023-winter-confereces-atlanta
 - Total of 9 tracks; Track 3 of interest – Refrigerants and Refrigeration, Chair - Brian Fronk, brian.fronk@oregonstate.edu
- TC reorg has completed; 13 TCs have merged with 2 in process.
- Rollover roster goes into effect after this meeting.
- TAC encourages using Basecamp for depository of information and data transfer; also to have separate meetings in between the winter and annual meetings.
- The Chapter Technology Transfer Committee was emphasized which provides a route to getting information out to a greater number of members and participants.
- ASHRAE believes Hybrid meetings will continue and is taking action to address issues to improve these meetings – microphones, speakers, audio hardware mentioned as concerns. Please email ASHRAE with other issues and suggestions at ASKTAC@ASHRAE.org.

7) Liaison Comments:

- Stuart Dols, Section 3 Head, announced his term ends July 31, 2022. Mentioned he thought Hybrid meetings will likely continue and audio/connectivity issues seem to be the biggest challenge but once resolved, the meetings were effective. Thanked the TC chairs and leadership for their efforts during his tenure. Recognized the TC website as great and thank Dave Vincent for all his efforts. Joe Karnaz thanked Stuart for his help and support with the merger.
- Val Lisi stated ASHRAE is looking for liaisons for Decarbonization from all TCs.

8) Sub-Committee Reports

Programs – Brad Boggess

- No new Program ideas from preceding Programs and Research meetings.
- Program ideas previously considered
 - Reclaiming refrigerant (contaminant control), AHRI 700, HFC/HFO chemistries – Julie Majurin, Joe Karnaz.
 - Sustainability of metal working, process chemical fluids. Casey Scruggs interested in leading.
 - Topics coming out of Purdue?
- Atlanta Winter 2023 meeting
 - Abstracts due August 9, 2022.
 - Discussed content and title for session with TC3.1 and 3.4 about sustainable process and metal working fluids. Bio-based products, renewable, decarbonization relevance with LGWP refrigerants. Session Chair – Sara Kampfe, Emerson, volunteered. Presentations tentatively from Circle Presco (Rashid Zakeri), Morgan Leehey/ Steve Kujak, Casey Scruggs, and Daikin (Ivan Rydkin, Chris Williams on system leaks, contaminant control).
 - **MOTION #3:** to approve program session working title “System Chemistry, Contaminant Control, and Sustainable Metalworking Fluids” chaired by Sara Kampfe was made by Val Lisi and seconded by Brad Boggess. Motion passed 8-0-0, CNV.

Handbook –Ivan Rydkin

- Handbook is finalized. Next update will update references and edit language, start update discussions in 2023 (Tampa Bay mtg).

Standards – Joe Karnaz (updating for Sheli Porter)

- GPC 38 – Metal Pressure Vessel Method to Test Materials Used with Refrigeration Systems
 - Joe Karnaz and Sheli Porter to follow-up with ASHRAE regarding reaffirming this standard.
- SPC 97 – Sealed Glass Tube Method to Test for Chemical Stability of Materials for Use Within Refrigerant Systems
 - Final draft is complete. Chris Seeton to submit doddle poll for vote on final revision.
- SPC 35 – Method of Testing Desiccants for Refrigerant Drying
 - Mandi reported meeting on Sunday attended by two members. Discussed merging SPC 63.1 and 35; will send out draft to rest of working sub-committee. Timeline to merge two standards is about two years.
- SPC 63.2 – Method of Testing Liquid Line Filter Drier Filtration Capacity
 - No update. From last meeting, no action required was required.

- SPC 78 – *Method of Testing Flow Capacity of Suction Line Filters and Filter Driers*
 - No action required.
- SPC 219 – *Method of Testing Acid Filters*
 - Reviewed update from 2022 Winter meeting - John Senediak reported the method was approved February 2021. ASHRAE published SPC 219. Nothing new reported.
- No new ideas for Standards or Guidelines.

Research – Casey Scruggs

- Research Chairs Breakfast update – Implementation of new tools to automate process, web-based project tracking tool. Improvements observed over previous email-based notification/review/approval process. Basecamp used a depository for information and communication of projects status. Research budget at \$1.8M; typically, 12-15 new projects are awarded plus grants and other awards. Currently working backlog of projects from last couple of years. PES and PMS training modules are complete and now on ASHRAE website.
- **RTAR 1856** – “*Determine the Effect and Allowable Limits of Moisture and Contaminants in CO2 Systems*” RTAR submitted. WS drafted, accepted, and ready for review by TC voting members, letter ballot forthcoming.
- **RTAR 1886** – “*Kinetic and Mechanistic Studies of the Breakdown of HFO Refrigerants*”. Casey reported funding is being allocated. Joe Karnaz suggested work continue for mechanism along with review for research gaps. Steve Kujak and Morgan Leehey will review and provide update at Atlanta meeting. Project also proposed to AHRTI, no feedback.
- **WS 1790** – “*Distribution of Water between Vapor and Liquid Phases of Low GWP Refrigerants*”. No bidders on project; some labor and equipment constraints. Brad Boggess updated this was 3rd attempt to attract bidders; requested input from committee on value of data. Handbook, chapter 7, contains this data type but is outdated. Interest remains for this data for HFO, R32 refrigerants. Return WS to RAC to re-bid; reiterate interest to RAC that labs are interested. Solicit interest at AHRI 700 mtg; other labs attend this meeting.
- **RTAR 1897** – *HFO Refrigerant Compatibility with AGED Lubricants and Contaminants*” Casey Scruggs updated status, project in queue at RAC. TC needs to decide project future – Joe Karnaz recommended this project be paused to allow review of WS at Atlanta w/ final decision at Tampa Bay meeting; project initially focused on retrofit applications w/ HFOs. Consider other refrigerants? CO2? Ammonia?
- **New ideas for Research**
 - Marc Scancarello suggested an effort to review typical materials of construction, process fluids, etc used in the HVACR industry and their potential to be under regulatory pressure (e.g. REACH, RoHS, USEPA, etc.) in the next 5 years. Is there a sustainability value associated with this effort? AHRI may be interested in co-sponsoring this project. Will review at Atlanta meeting.

Webmaster TC 3.2 – Dave Vincent

- Website is up to date.
- TC 3.2 Chair Joe Karnaz recognized and thanked Dave for his continued fine job on maintaining the website.

9) MTG Lower GWP Refrigerants TC 3.2 - Marc Scancarello

- Proposed posting of research, standards, and codes on Basecamp to allow members to review content and give it the attention it may require.
- Joe Karnaz to post content on the website, members only. Presently do not have a TC3.2 Basecamp; consider setting up for this TC.
- Research
 - RP1884 - *Incorporation of Odorants in Flammable Refrigerants.*
 - RP1806 - *Flammable Refrigerants Post Ignition Simulation and Risk Assessment*
 - RP1855 - *Determination of the Impact of Combustion Byproducts Hydrogen Fluoride (HF) and Carbonyl Fluoride (COF₂) on the Safe Use of Flammable Fluorinated Refrigerants.*
 - RP1879 – MTG appears to be co-sponsoring this project.
- Standards

10) MTG Sustainable RAC – Rashid Zakeri

- Joe Karnaz thanked Rashid for his leadership on this MTG.
- Edits are underway to add tables and clarify language. Appendix being added for technicians and quality engineering.

11) Membership – Joe Karnaz

- Rollover Roster Discussion
 - Rolling off June 2022
 - Val Lisi
 - Rosine Rohatgi
 - John Senediak
 - Rolling on July 2022
 - Steve Vincent
 - Steve Kujak
 - Bob Low, Voting member non-quorum (request from Chris Seeton and Sarah Kim that since they are both voting members and now with the same company that they both be removed as voting members and add Bob Low as a voting member non-quorum.) Chair will submit the needed paperwork.
- For those interested in becoming a member, visit the TC website and sign up as Provisional Member. Provisional Members move to Corresponding Members.

12) Old Business – Joe Karnaz

No new business was brought before the committee.

13) New Business – Joe Karnaz

- New idea – Ivan Rydkin asked if anyone is interested in joining TC3.8.
- Val Lisi reiterated that calendar invites should be sent to all members to assist with meeting attendance.

14) Adjournment – Joe Karnaz

The meeting was adjourned at 5:24pm through a motion by Ivan Rydkin.

Respectfully submitted,

Steven Baker – Secretary