



180 Technology Parkway NW, Peachtree Corners, GA 30092

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**DRAFT**

## 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 September 7, 2023

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

DATE OF MEETING Tuesday, June 27, 2023, 3:30-6:00pm (EST) LOCATION Tampa (Hybrid)

Members Committee and Voting			Participation	
Name	VM	Affiliation	Present	Absent
Joe Karnaz - <b>Chair</b>	Yes	Shrieve	X	
Valerie Lisi – <b>Vice Chair</b>	No	Carrier	X	
Casey Scruggs - <b>Research</b>	Yes	Metalloid	X	
Ivan Rydkin - <b>Handbook</b>	Yes	Daikin		X
Sheli Porter - <b>Standards</b>	Yes	Stellar Laboratories	X	
Morgan Leehey – <b>Acting Secretary</b>	No	Trane	X	
Shelby Kent - <b>Programs</b>	No	Shrieve	X	
Dave Vincent - <b>Webmaster</b>	Yes	BVA	X	
Greg Smith	Yes	Honeywell	X	
Ed Hessell	Yes	Lanxess		X
Julie Majurin	Yes	AHRI	X	
Justin Allemann	Yes	Parker Hannifin		X
Brad Boggess	Yes	Emerson	X	
Steve Kujak	Yes	Trane	X	
Bob Low	MNQ	Koura	X	
Marc Scancarello – <b>MTG Low GWP</b>		Emerson	X	
Chris Campo - <b>ALI</b>		Shrieve	X	
Rashid Zakeri – <b>MTG Sustainable RAC</b>		Circle Proscio		X
<b>DISTRIBUTION: All Members of TC/TG/MTG/TRG plus the following:</b>				
TAC Section Head: Tina Brueckner		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 Drake Erbe - Handbook		
Mike Vaughn, Manager of Research & Technical Services		MORTS@ashrae.net		

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

## **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 27, 2023 held in Tampa JW Marriott Adamo Room and online via Zoom. The chair introduced himself and welcomed those attending in person and online. 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 and directed to the ASHRAE website for additional information.

**3) Confirmation of Quorum** – After a roll call it was determined that 9 members are present. Quorum established with 9 of 12 voting members present.

### **4) Approval of Agenda – Joe Karnaz**

**MOTION #1:** to approve the 2023 Annual meeting agenda was made by Greg Smith and seconded by Julie Majurin. Motion passed 8-0-0 CNV.

### **5) Approval of 2023 Atlanta Winter Hybrid Meeting Minutes – Joe Karnaz**

**MOTION #2:** to approve the 2023 Winter Hybrid meeting minutes for TC3.2 was made by Steve Kujak and seconded by Casey Scruggs. Motion passed 8-0-0 CNV.

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

- Focus presentation made by Alice Yates Director of ASHRAE Government Affairs
- Open Mic Policy – allows to members to voice concerns and offer improvements; use [ASKTAC@ASHRAE.net](mailto:ASKTAC@ASHRAE.net)
- FG 2023-2024 roster takes effect after this Annual Meeting
- Basecamp available for document upload and communication for Section Heads and FG Leadership
- Handbook Training was provided during the Chair Breakfast meeting
- Next conference is in Chicago January 20-24, 2024
  - Seminar and Forum Proposals are due August 2<sup>nd</sup>
  - Conference will have Refrigeration Track –
    - Refrigeration and Refrigerants -- Atilla Biyikoglu [abiyik@gazi.edu.tr](mailto:abiyik@gazi.edu.tr)

Refrigeration systems generate and use cold for a range of processes, from food preparation and conservation to vaccine preservation, to long-term protection of fragile ancient inks of historic documents and others. Differences in technologies and equipment, performances, refrigerants, etc., may hide synergies from which both industrial and commercial systems might benefit, also, but not only, from the points of view of reducing direct and indirect GHG emissions.

- Link for Program Proposals - <https://ashraem.confex.com/ashraem/w24/cfp.cgi>
- General Conference Program Link - <http://www.ashrae.org/conferences/2024-winter-conference-chicago/2024-winter-conference-technical-program>
- Speaker Resources - <https://ashrae.org/conferences/speaker-resources>

## **Program Statistics for the 2023 Annual Conference:**

The 2023 Annual Conference had a total of 100 sessions and events scheduled, comprised as follows:

- 70 seminars
- 18 Poster Sessions
- 1 Virtual Paper Session
- 5 Panel discussions
- 3 Forums
- 2 Debate
- 1 Workshop

There were a total of 357 presentations, 116 papers and 17 live-streamed sessions.

### **7) Liaison Comments:**

- Tina Brueckner, TAC; Thanked the group for their commitment. During this time, Danny Halel brought up the subject of TC 3.8 lack of membership and the need to look at other options, one option being roll in with TC 3.2. After some long discussion it was decided this subject would need to be presented to TAC first and then come back to the TC's for decision and direction.
- Chee Sheng Ow – will make comments during Research section.

### **8) Sub-Committee Reports**

#### **Programs – Shelby Kent**

The programs subcommittee meeting was held on June 13<sup>th</sup> via a web meeting. Ideas generated from that meeting presented in this TC committee meeting.

- Co-sponsored Seminar 9: Properties of Refrigerants and Lubricants to Comply with the AIM Act, which was presented on Sunday.
- Other Programs of Interest
  - Seminar 25 and Seminar 60 – A2L Refrigerant Standards Review Parts 1 and 2.
- Program ideas for upcoming conferences
  - Chicago – Suggestion to recycle Atlanta rejected seminar “System Chemistry, Contaminant Control, and Sustainable Metal Working Fluids” The three previous speakers (Casey Scruggs, Rashid Zakeri and Ivan Rydkin along with the session chair Sara Kampfe) all remained committed, Ivan will find another presenter from Daikin and may try to add one for presenter. Sara will get with the presenters and submit the needed paperwork.
  - Other Ideas
    - Fill in on PFAS seminar or have separate session. Or ideas on Contaminant Control, filter driers and chemical stability. View recent ASHRAE and AHRI research programs for program ideas.
    - Some discussion on a potential 2<sup>nd</sup> program for Chicago but nothing was moved forward.
- Deadline for Chicago Program Submission is August 2<sup>nd</sup>.
- Summer ASHRAE is in Indianapolis – will table ideas for programs until Chicago.

### **Handbook –Ivan Rydkin (Joe Karnaz substituting)**

- Updates on Handbook activities and meetings.
  - Some updated paperwork is needed to be filled out on the current status of our Handbook Chapters. The TC 3.2 chair will share this paperwork with the committee.
  - Committee members – Sara Kampke, Rosine Rohatgi, Shelby Kent and Steve Kujak (who will be the chair)
- Chapter 6 Refrigerant System Chemistry and Chapter 7 Control of Moisture and Other Contaminants in Refrigeration Systems are the two chapters TC 3.2 is responsible for.

### **Standards – Sheli Porter**

- GPC 38 – Metal Pressure Vessel Method to Test Materials Used with Refrigeration Systems
  - No action required.
- SPC 97 – Sealed Glass Tube Method to Test for Chemical Stability of Materials for Use Within Refrigerant Systems
  - Chris Seeton updated in TC 3.4 that changes were accepted and the committee is fixing minor errors. There will be a final review, committee to see a copy soon.
- SPC 35 – Method of Testing Desiccants for Refrigerant Drying
  - Committee Chair Mandi Lippard commented the committee has been discussing merging Stds 35 and 63.1; references and definitions are being worked on and the committee will meet in the next few months to review for final draft and committee vote.
- SPC 63.2 – Method of Testing Liquid Line Filter Drier Filtration Capacity
  - A draft of standard was submitted to TC voting members prior to the meeting for review and vote. Greg Smith noted that TC 3.3 was reference which needs to be changed to TC 3.2.

**MOTION #3:** to reaffirm SPC 63.2 was made by Steve Kujak and seconded by Julie Majurin.

Some additional discussion, John Senediak noted that some information, flow capacity and moisture capacity, that are being combined in SPC 35 and 63.1 should be added to SPC 63.2. If this is the route, then SPC 35 TPS would need to be modified. It was suggested we still reaffirm 63.2 now and address this issue later. Motion passed 9-0-0 CV.

- SPC 78 – Method of Testing Flow Capacity of Suction Line Filters and Filter Driers
  - No action required.
- SPC 219 – Method of Testing Acid Filters
  - No action required.
- No new ideas for Standards or Guidelines.

### **Research – Casey Scruggs**

- Research Chairs Breakfast update –
  - Funding limit has been increased from 250K to 350K which is back to pre-covid levels; noted that engineering and grad student salaries have increased so funding level increase is needed.
  - PTAR – help to establish pathway/learning for the group.
  - Cover letter: if WS or RTAR is sent back for comments, authors when addressing need to make sure the changes are clear; what was the comment, how fixed, etc; can be referenced in the document and placed behind the cover letter to help streamline process through RAC.

- A number of projects are coming back with zero bids which is concerning. RAC is going to lean on the TCs to engage potential bidders.
- Need to make sure to provide references and clarify points for RAC reviewers not as familiar with the subjects.
- **RTAR 1856** – *“Determine the Effect and Allowable Limits of Moisture and Contaminants in CO2 Systems”* Ivan Rydkin commented he will send information to Casey Scruggs on current updated WS. The cover sheet was not filled out and sent with the WS, this is already taken care of. Chee Ow wants to see the current WS, Casey will send once he receives from Ivan.
- **RTAR 1886** – *“Kinetic and Mechanistic Studies of the Breakdown of HFO Refrigerants”*. A draft of the WS was sent to the TC voting members prior to the meeting for vote.

**MOTION #4:** to approve WS1886 was made by Dave Vincent and seconded by Brad Boggess.

Discussion – asked if for the project only fluid analysis was considered, should glass or metal surfaces be considered? Currently open ended as volatile and non-volatile materials.

Motion passed 9-0-0 CV.

- It was noted that RTARs 1897 and 1790 were dropped from consideration in Atlanta.
- Bill Murphy will be taking over as the RAC Chair.
- **New ideas for Research**
  - Reviewed discussion from Atlanta on materials of construction and alloy compatibility research, tabled for further discussion in Chicago.
  - Research needs and gaps from review of handbook chapters.
  - Bob Low shared issues with polymerization of HFOs in recovery in the auto market. Bob to share some of this information that can be shared with committee members that have interest.

#### **Webmaster TC 3.2 – Dave Vincent**

- Website is up to date and new information will be added when received.

#### **9) MTG Lower GWP Refrigerants TC 3.2 - Marc Scancarello**

- Marc shared an overview of the codes/standards progress.
  - RP1806 – flammable refrigerants post simulation and risk assessment; completed and final report reviewed.
  - RP1807 – guideline for flammable refrigerant handling, transporting, etc; completed and final report available.
  - RP1808 – servicing and installing of field made mechanical joints; completed.
  - RP1855 – done and final report in review stage.
  - MCLR AHRI 9016 – in progress.

#### **10) MTG Sustainable RAC – Rashid Zakeri**

- All chapters complete and in final review.

#### **11) Membership – Joe Karnaz**

- Rollover Rosters take affect after this meeting. New management committee:  
Chair – Julie Majurin; Vice Chair – Morgan Leehey; Secretary – Steve Kujak; Handbook – Steve Kujak; Programs – Shelby Kent; Research – Casey Scruggs; Standards – Sheli Porter; Webmaster – Dave Vincent; ALI – Chris Campo; MTG Low GWP – Marc Scancarello; MTG Sustainable RAC – Rashid Zakeri
- Voting members rolling off – Joe Karnaz; Casey Scruggs and Steve Kujak
- Voting members rolling on – Chris Campo, Morgan Leehey and Ray Drost

**12) Old Business – Joe Karnaz**

- None

**13) New Business – Joe Karnaz**

- None

**14) Adjournment – Joe Karnaz**

The meeting was adjourned at 5:50 pm through a motion by Steve Kujak.