



**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. 3.4 DATE February 16, 2024

TC/TG/MTG/TRG TITLE Lubrication

DATE OF MEETING January 23, 2024 LOCATION Chicago and Virtual

MEMBERS PRESENT	YEAR APPTD ENDS	MEMBERS ABSENT	YEAR APPTD ENDS	EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE
Casey Scruggs – <b>Chair/Han</b>	2024			Scott Wujek – Research
Joe Karnaz – <b>MTG Low GWP</b>	2024			Andrea Irias- Programs
Morgan Leehey	2026			Tina Brueckner – Section Head
Chris Seeton	2026			Danny Halel- MTG Low GWP
Sheli Porter - <b>Standards</b>	2025			
Sara Kampfe	2025			
Rashid Zakeri – <b>Vice Chair</b>	2024			
Dave Vincent - Webmaster	2025			
Raymond Drost- <b>Secretary</b>	2024			
Rosine Rohatgi	2026			

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

TAC Section Head: Tina Brueckner	SH3@ashrae.net
All Committee Liaisons As Shown On TC/TG/MTG/TRG Rosters (Research, Standards, ALI, etc.)	Zheng O’Neil – 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 not the official record until approved by the TC.

## Minutes – TC 3.4 Lubrication

### **Call to Order – Casey Scruggs**

Casey Scruggs called TC 3.4 meeting to order at 2:30 pm CDT on January 23, 2024. Meeting was held in-person at McCormick Place, West (W176A) and via Virtual Zoom Conference. Participates were asked to sign the sign in sheet passed around the room and for those on-line using the Zoom Chat function.

Members and guests introduced themselves.

A quorum was established with 10 of 10 members present.

Joe Karnaz made motion and Sara Kampfe seconded motion to approve minutes.

The Chair reviewed and read the ASHRAE Ethics Statement.

A quick review of the agenda was made.

### **Approval of 2023 Atlanta Meeting Minutes and 2023 Tampa Meeting Agenda**

*A motion was made by Joe Karnaz to approve the 2023 Tampa Meeting minutes as written, the motion was seconded by Sara Kampfe, the motion carried 9-0-1(Chair abstain).*

*A motion was made by Rashid Zakeri to approve the 2023 Chicago agenda as written, the motion was seconded by Chris Seeton, motion carried 9-0-1(Chair abstain).*

### **TC Chair Breakfast – Casey Scruggs**

#### Global Technical Interactions Committee

- Through an Ad Hoc on Globalization of Standards several barriers were identified that limit ASHRAE standards global impact. From this the GTIC was formed.
- Scope and Purpose
  - GTIC shall be responsible for harnessing the technical resources of ASHRAE to influence international standards and maximize the global impacts of ASHRAE standards and other technical work products on the practice of HVAC&R and the built environment. This includes developing, implementing, and managing processes that enable information flow and coordination between chapters, technical committees, project committees, and international technical advisory groups.

#### Task Force for Building Decarbonization

- ASHRAE's Position and Goals
  - Eliminating GHG emissions from the built environment is essential to address climate change.
  - 2030 - The global built environment must halve its 2015 GHG emissions

- 2050 - All new and existing assets must be net zero GHG emissions across the whole life cycle
- TFBF Successes
  - Worked with TAC to improve communication and coordination with interest functional groups.
  - Worked with the White House to define “Zero-Emissions Building.”
  - Published our Building Performance Standards Technical Resource Guide in February in conjunction with the U.S. Department of Energy
  - Six additional decarbonization guides are under development, anticipated to be completed in the next 12 months.
  - Coordinated work with our standards project committees to address GHG emissions.
  - Assisting the Planning Committee to add building decarbonization goal to the ASHRAE Strategic Plan

### **Liaisons**

Tina Brueckner (TAC Section 3 Head) – Building decarbonization task force will stop being a task force July 1, 2024 and will become center of excellence. Concepts will be put in standards, etc.

No other Liaisons presented.

### **Subcommittee Reports**

#### **Program – Andrea Irias**

Casey discussed ideas for Indianapolis or Orlando seminar sessions:

- Andrew Sumner: Relationship between miscibility and solubility with different refrigerants and lubricants.
- Sara Kampfe: Panel- Selecting sustainable lubricants for low GWP refrigerant applications (possible for Orlando)

No other ideas for future conferences beyond Chicago (Indianapolis Annual 2024 and Orlando Winter 2025).

#### **Handbook – Casey Scruggs**

The handbook committee met, and reviewed Chapter 12 and adjustments being made. Looking for several PVT charts based on refrigerants that have been phased out or phased down that might be better to move to an informative section. Needs to be ready by June,

2024. Some discussion about maintaining mineral oils. Andrea Irias, Casey Scruggs, Chris Seeton, Dave Vincent, Henna Tangri, Joe Karnaz, Sara Kampfe, Shelby Kent, Rashid Zakeri, Morgan Leehey on committee (base camp).

### **Standards – Sheli Porter**

GPC 40 “Refrigeration Oil Description” – Scott Wujek is the chair. Complete and just need to take a vote.

Standard 86 “Methods of Testing the Floc Points of Refrigeration Grade Oils” – This standard is being revised by the committee being chaired by Brad Boggess. Brad reviewing comments and then will come back to committee for vote.

Standard 172 “Method of Test for Insoluble Materials in Lubricant and Refrigerant Systems”. A committee has been established; Ed Hessel (Chair). Draft is complete and voted unanimously plans to submit for public review later this week. Name change to widen scope (potential to roll in Standard 86 in the future).

SPC 218 “Method of Test for Lubricant and Refrigerant Miscibility Determination” – this is being chaired by Casey Scruggs and was decided to revise the standard. Met Sunday at Chicago and roster change (Brian and Chris Seeton to roll on). Minor changes made and plan to finalize by Orlando.

Ideas for new standards: Volumetric resistivity for refrigerant/lubricant systems; ASTM standards are outside scope (RP 1851- TC 3.1)

Other discussion – No other discussion.

### **Research – Scott Wujek**

The combined Section 3 research subcommittee meeting took place on January 9<sup>th</sup>, 2024 via a Zoom conference call. Ideas generated at that meeting will be discussed in the individual TC meetings.

Projects –

**RP 1879** “Foaming Properties of Low GWP Refrigerant and Oil Mixtures” – Chris Seeton Chair; the project is underway with Oklahoma State University as the PI. Kyle Shepard provided in-person update presentation. Foaming tests to begin shortly with POE/R-134a baseline generated as proof of concept.

**RP 1721** “Oil Return and Retention in Unitary Split Gas Lines with HFC and HFO Refrigerants”. This is sponsored by TC 8.11 Unitary and Room Air Conditioners and Heat Pumps; TC 3.4 is a co-sponsor with Chris Seeton as our representative and Purdue University is the PI. Project concluded- listed as active project on website but is complete. In ASHRAE’s hand to finalize.

**RTAR 1891** “Tribological Interaction Data with Lubricants and Refrigerants”. Scott Wujek Chair; No update was given. The TC Chair will reach out to Scott for updates, Deadline for submission to RAC is February 2024. Scott to send email to re-group.

Some ideas from subcommittee meeting

- Preferential solubility of high glide refrigerants – some discussion in the meeting on this topic and was decided still should remain as an idea for potential future research.
- Electrical properties extension of TC 3.1 work, this would be with lubricants. TC 3.1 RTAR is 1851 and the work statement is in progress so will still hold this as an idea.
- Research on how lubricants effect some of the current refrigerant leak sensors based on oil spray; not sure if TC 3.4 is correct venue for this; will table (based on Std 15 work). Will leave on new ideas for now.
- End of Life discussion on lubricants and environmental effect; after some discussion in the room this sounds more like a standard or guideline and not research, though the idea of a PTAR was suggested. Will table for further discussion in Chicago.

No other research ideas were communicated, and further discussion was tabled until the next subcommittee and TC meeting in Chicago.

### **Webmaster – Dave Vincent**

The website is up to date with active meeting link to video conference for future meetings. Dave has been timely in posting information for the TC committee to download.

### **MTG Update –Low GWP Lower Alternative Refrigerants – TC 3.4 Represented by Joe Karnaz**

- Two main meetings are on Sunday evening and Wednesday morning.
- RP-1806 “Flammable Refrigerants Post-Ignition Simulation and Risk Assessment Update”. This is an active project and a plan for completion has been developed.
- RP-1855 “Determination of the Impact of Combustion Byproducts on the Safe Use of Flammable Fluorinated Refrigerants” This is an active project and the final report has been reviewed by the PMS and PI and the MTG LGWP committee will vote Wednesday on the PMS recommendation.
- TRP-1879 “Foamability Properties of LGWP Refrigerant and Oil Mixtures”, Responsible Committee: TC 3.4, Co-Sponsors: TC 8.1 (Positive Displacement Compressors), an update was provided to the MTG committee.
- TRP-1884 “The incorporation of odorants in flammable refrigerants to improve leak detection” this is an AHRI project cosponsored by ASHRAE, an update was provided.
- Should be disbanding soon (2025) and will roll into another TC (to be determined).

### **Old Business – Casey Scruggs**

No old business.

### **New business – Casey Scruggs**

The new membership voting committee and management team will change after this meeting.

**Next meeting:** *Indianapolis, June 2024*

**Adjourn – Casey Scruggs**

The chair closed the meeting at 3:15 pm through a motion to adjourn.