



**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. 3.2 DATE March 13, 2019

TC/TG/MTG/TRG TITLE System Chemistry

DATE OF MEETING January 14, 2019 LOCATION Atlanta, GA

MEMBERS PRESENT	YEAR APPTD ENDS	MEMBERS PRESENT	YEAR APPTD	EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE
Ed Hessell - Chair	2020	Chris Reeves	2019	Brad Boggess- Programs
Joe Karnaz – Vice Chair	2020	John Senediak	2020	Casey Scruggs - Research
Rob Yost - Standards	2021			
Steven Baker - Secretary	2021			
Dave Vincent - Webmaster	2021	MEMBERS LATE		
Tom Leck – MTG Liaison	2019	Greg Smith - Handbook	2019	
Elyse Sorenson	2022			
Ngoc Dung (Rosine) Rohatgi	2022			
Jian Sun-Blanks	2022			
Danny Halel	2021			
Sarah Kim	2021			

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

TAC Section Head: Barbara Minor	SH3@ashrae.net
All Committee Liaisons As Shown On TC/TG/MTG/TRG Rosters (Research, Standards, ALI, etc.)	Steve Kujak – Research Don Fenton - Standards
Mike Vaughn, Manager of Research & Technical Services	MORTS@ashrae.net

## Minutes – TC 3.2 System Chemistry

### Call to Order

Chair Ed Hessell, called the meeting to order at 2:20 pm on Monday January 14, 2019 in Atlanta at the GWCC Room A301. Members and guests introduced themselves. Guests were welcomed and invited to participate. A sign-up sheet was circulated.

A review of the voting members was made by Joe Karnaz.

A quorum was established with 13 of 14 members present.

ASHRAE Code of Ethics – A mention of the Code was made to remind all members and visitors of the Code and that it should be adhered to whenever at an ASHRAE meeting.

### Approval of 2019 Winter Meeting Agenda and 2018 Houston Meeting Minutes

**MOTION #1** A motion was made by Chris Reeves and seconded by Danny Halel to approve the Agenda for this meeting as written.

MOTION PASSED 13-0-0-CV

**MOTION #2** A motion was made by Danny Halel and seconded by Tom Leck to approve the Minutes from the meeting in Houston as written.

MOTION PASSED 13-0-0-CV

### Report on TC 3.0 Chair Breakfast Meeting

The notes from the TC Chair meeting will be uploaded to the website. Highlights from the meeting are as follows:

- YEA (Young Engineers at ASHRAE) representative encouraged committee chairs to invite young engineers to get involved. Starting in Handbook, Research, RTAR review group, and Programs are great areas to get started.
- ASHRAE is still offering name badges for free to those that do you register. ASHRAE would like people to use this because it provides them with a number count which helps when setting up conferences and hotel space.
- Statistics for abstracts, tech papers, seminars, workshops, forums, and panel discussions for the Atlanta conference presented.
- Reorganization of the ~120 ASHRAE technical committees to optimize meeting times/resources was introduced for discussion/review/feedback. To be discussed further at this TC meeting.

### Liaison Reports:

Barbara Minor introduced herself as the TAC Section 3 Head and new liaison. Reviewed initiative to review reorganization of the ASHRAE technical committees. ~120 technical committees exist, requests to form new TCs continue without closing and ending inactive committees. Stress felt on meeting space and resources at semi-annual meetings is apparent. Ad Hoc committee formed

to solicit feedback from membership on this reorganization; a form was provided for feedback and requested to be returned within the month to allow an update at the Kansas City meeting in June. Looking at combining some TCs while closing others. Positive and negative feedback provided during this discussion.

RAC (Steve Kujak)

Webinars available through ASHRAE on the RTAR process; next webinar is within the next couple of months. \$2.4 million available in funding by members; prioritization of projects takes place in the Fall for bidding.

## **Sub-Committee Reports**

### **Program – Brad Boggess**

At the Atlanta meeting, TC 3.2 sponsored Seminar 54 “Chemistry of New and Retrofit with Low GWP Refrigerants” on January 15<sup>th</sup> at 11:00am – 12:30pm in GWCC, room A410.

Topics from discussed from the last meeting in Houston were discussed further for the Refrigeration Track planned for the upcoming Orlando meeting. Ideas were

- Lifecycle of HFO refrigerants
- Low GWP refrigerants and lubricants – What you need to Know.
- Estimating Accelerated Chemical Stability Using Equipment Operation

New ideas

- Steve Kujak and Elyse Sorenson presenting paper at Atlanta on Accelerated Life Cycle Modeling. Steve suggested creating seminar for Orlando with other section 3 to cover this paper and others, i.e. Rosine’s paper on impact of process chemicals as contaminants on refrigerant reactivity, Short history of thermal, chemical, and material compatibility tests.  
**ACTION: At Kansas City mtg, identify topics and speakers for Orlando seminar.**

For Kansas City –

The ASHRAE 125-year anniversary program abstract submission for TC 3.2 was submitted.

- The abstract title was edited to “THERMAL STABILITY AND CHEMICAL STABILITY OF REFRIGERANTS AND LUBRICANTS THROUGH THE YEARS”.
- The draft due in March for the Kansas City mtg will not be met but will be submitted for the Orlando meeting.
- Contributing authors: Rosine Rohatgi, Tom Leck, Sonny Sundaresan, Julie Majurin, Greg Smith, Elyse Sorenson

### **Handbook – Ed Hessell provided update from Greg Smith**

Handbook is complete. Greg Smith agreed to stay on as Sub Committee chair for the next update.

### **Standards –Rob Yost**

- GPC 38P – *Metal Pressure Vessel Method to Test Materials Used with Refrigeration Systems*
  - Published update 2018. Next update due in 3 years.

- SPC 97-2007 – Sealed Glass Tube Method to Test for Chemical Stability of Materials for Use Within Refrigerant Systems
  - Chris Seeton – Chair. Meeting is Tuesday morning and a potential vote on a completed draft is anticipated.
- No new standard ideas were discussed.

### **Research – Casey Scruggs**

- WS 1774 “Effects of System Chemicals Towards the Breakdown of Lubricants and Lower GWP Refrigerants” Complete. Rosine Rohatgi presented at the Atlanta meeting.
- WS 1790 “Distribution of Water between Vapor and Liquid Phases of Low GWP Refrigerants”. Project is out for bid again.
- Proposed RTAR – “Correlating Interactive Behavior of Process Chemicals on System Component Performance” Chair – Brad Boggess.
  - Brad recommended the current project scope be dropped in favor of a White Paper Study. A review of current published papers on effect of process chemicals of lubricant and refrigerant stability. Focus on low GWP refrigerants; review Rosine’s paper (WS1774) and similar research on HFCs performed in the 90s (per Danny Halel) for areas to research further.
- Proposed RTAR – “Kinetic and Mechanistic Studies of the Breakdown of HFO Refrigerants”. Chair – Elyse Sorenson.
  - With Sonny Sundaresan, Elyse Sorenson will circulate proposal prior to the next TC meeting.
- Proposed RTAR – “HFO Compatibility with Aged Polyolester Lubricants and Contaminants”. Chair – Joe Karnaz
  - Title of project changed to “Retrofits – Know the Composition of Aged Oil and the Effect on HFO refrigerants”. This would be similar and aligned with previous research where refrigerants transitioned from CFC to HCFC to HFC. Th effect of air and moisture to be considered. The RTAR is written and will sent out for a letter ballot vote to be considered at the March RAC meeting.
- No new research was proposed.

### **Webmaster – Dave Vincent**

The website is up to date.

### **Membership – Ed Hessel**

The following new TC 3.2 committee roster is effective January 14, 2019:

Ed Hessel – Chair/VM  
 Joe Karnaz – Vice Chair/VM  
 Rob Yost – Standards/VM  
 Steven Baker – Secretary/VM  
 Greg Smith – Handbook/VM  
 Dave Vincent – Webmaster/VM  
 Tom Leck – MTG Low GWP/VM  
 Brad Boggess – Programs/CM

Casey Scruggs – Research/CM  
Scott Gustafson – ALI/CM  
Danny Halel – VM  
Sarah Kim – VM  
Chris Reeves – VM  
John Senediak – VM  
Elyse Sorenson – VM  
Jian Sun-Blanks – VM  
Rosine Rohatgi – VM

### **MTG Lower GWP Refrigerants – Tom Leck**

- 3 research projects approved and are in progress.
- 1 project final report is in review.
- New project under review: “Health effects of combustion products from A2L refrigerants”.

### **Old Business**

No old business was brought before the committee.

### **New Business**

**Action: Chair Ed Hassell to send feedback form to TC 3.2 members.**

### **Next Meeting**

**2019 ASHRAE Annual Meeting Kansas City, MO June 22–26, 2019.**

### **Adjournment**

The meeting was closed at 4:15 pm through a motion to adjourn.

Respectfully submitted,

Steve Baker – Secretary