



1791 Tullie Circle, N.E./Atlanta, GA 30329

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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 June 26, 2018

TC/TG/MTG/TRG TITLE System Chemistry

DATE OF MEETING June 25, 2018 LOCATION Houston, TX

MEMBERS PRESENT	YEAR APPTD	MEMBERS PRESENT	YEAR APPTD	EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE
Warren Clough	2016	John Senediak	2016	
Joe Karnaz	2016	Danny Halel	2017	
Steve Baker	2017	Sarah Kim	2017	
Greg Smith	2015			
Dave Vincent	2017	MEMBERS ABSENT		
Tom Leck	2015			
Chris Reeves	2015			
Ed Hessell	2014			
Steve Kujak	2014			
Sonny Sundaresan	2014			
Rob Yost	2017			

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

TAC Section Head: Jay Kohler	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

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

Minutes – TC 3.2 System Chemistry

Call to Order

Chair Warren Clough, called the meeting to order at 2:15 pm on Monday June 25, 2018. The meeting was held in the Hilton Americas, Grand D, 4th floor, Houston, TX. After the introduction of members and guests, a quorum was confirmed with 14 members present; 0 members were absent.

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.

MOTION #1 A motion was made by Joe Karnaz and seconded by Dave Vincent to approve the Agenda for this meeting as written.

MOTION PASSED 14-0-0-CV

MOTION #2 A motion was made by Sonny Sundaresan and seconded by Tom Leck to approve the Minutes from the meeting in Chicago with a minor change to the date as pointed out in meeting.

MOTION PASSED 14-0-0-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:

- Nominations for Hightower and Service ASHRAE Research Awards due September 1, 2018.
- ASHRAE 125 Anniversary celebration will be take place over 3 ASHRAE conferences starting in Kansas City 2019 and extending to Orlando and Austin meetings in 2020.
- Program proposals for Chicago are due August 3rd.
- Statistics from Houston programs – 274 submissions for 108 available slots
- Starting with the Chicago conference each winter conference will contain a refrigeration track.

Liaison Reports:

TAC Section 3 Head, Jay Kohler, commented on some key points from the TAC meeting. Jay will be rolling off as the Section 3 head and Greg Messimer will be taking over. The committee thanked Jay for his work and efforts supporting our TC.

RAC (Steve Kujak)

Steve commented on the number of projects approved at the RAC meetings. Some changes will be made to the RTAR submission to include a plain word abstract section, the new form will be available shortly. Comment was also made on utilizing the ASHRAE Basecamp Site for collaboration.

Sub-Committee Reports

Program – Brad Boggess

TC 3.2 did not sponsor or co-sponsor any programs at this meeting.

A technical paper was submitted for work done on TRP 1774 and will be presented at an upcoming ASHRAE program slotted by CEC.

Future programs:

From the Monday combined Section 3 programs meeting the following ideas were generated for potential programs for Atlanta and beyond:

- Chemistry of Retrofits with Low GWP Refrigerants
- Life Cycle of HFO Refrigerants
- Low GWP Refrigerants and Lubricants. What You Need to Know.
- Estimating Accelerated Chemical Stability Using Equipment Operations

Based on a potential research project on low GWP refrigerants and retrofits it was decided that a program on the first bullet point above could be a good lead into a later research project. After some discussion a revision to the title was made, a session chair named and a vote taken. A seminar will be submitted for Atlanta.

MOTION #3 A motion was made by Steve Kujak and seconded by Sonny Sundaresan to approve a Seminar for Atlanta titled “Chemistry of New and Retrofit Systems with Low GWP Refrigerants” chaired by Joe Karnaz.

MOTION PASSED 14-0-0-CV

Potential presenters that volunteered – Joe Karnaz/Shrieve; Ed Hessel/Lanxess; Steve Kujak/IR; Julie Majurin/CPI and Ivan Rydkin/Daikin.

For Kansas City – the ASHRAE 125-year anniversary program abstract submission for TC 3.2 was submitted. The abstract is as follows:

Thermal and chemical stability of refrigerants and lubricants intended for use in HVAC&R systems measure how well the fluids maintain their integrity when exposed to typical or severe application conditions, materials, and contaminants. These working fluids are required to be sufficiently stable to prevent negative impacts on the performance and reliability of HVAC&R equipment and components throughout the lifetime of their application, which in some cases may be up to or exceeding 20 years of service. The fluids must have sufficient stability such that they don't degrade into compounds that change their safety classification or handling criteria. In addition, the fluids must be compatible with materials of construction and other components that they are intentionally or incidentally exposed to in an application. Therefore, understanding thermal stability, chemical stability, and material compatibility of a specific refrigerant or refrigerant/lubricant combination begins as early as in the development phase, and often continues over an entire product lifecycle. As new refrigerants or lubricants are developed as alternatives to existing fluids, it is common practice to compare the stability and compatibility of the new and incumbent fluids without looking too far back in history. This paper takes a broader look at the stability and compatibility of working fluids that have been evaluated and applied through the years, and reviews the evolution of methods that have been used to understand and characterize these properties. Other factors, such as changes in equipment designs and new component

development, will also be discussed as they relate to shaping the stability and compatibility requirements of working fluids for an application.

Several individuals have volunteered to contribute to this paper. Since the paper is due in September the group will meet via conference call to divide up topics and draft the paper.

No other programs ideas were discussed.

Handbook – Gregory Smith

The handbook is completed and has been distributed. The TC will need to schedule when to start work on the next handbook revision. It was suggested that information relevant to new research be compiled to be included in the next TC 3.2 chapter revision.

Standards –Rob Yost

- GPC 38P – *Metal Pressure Vessel Method to Test Materials Used with Refrigeration Systems*
 - Joe Karnaz – Chair. The guideline has moved through the public review stage with no comments returned. ASHRAE is currently working on the gallery proof for review.
- 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 possible.
- No new standard ideas were discussed.

Research – Mark Baker (Sage Tomlinson Substituting)

- WS 1774 “Effects of System Chemicals Towards the Breakdown of Lubricants and Lower GWP Refrigerants” The contractor is Spauschus Associates. The final report was approved by the TC via letter ballot. There were additional comments made to modified some of the tables and make minor changes in the report that RAC thought should be done and the committee re-vote. The contractor made the changes, the Chair submitted the revised version to the TC for vote and the committee voted at this meeting.

MOTION #4 A motion was made by Joe Karnaz and seconded by Steve Kujak to approve the revisions to the final draft.

MOTION PASSED 14-0-0-CV

The PMS research project chair will finalize the project by filling out the disposition form.

- WS 1790 “Distribution of Water between Vapor and Liquid Phases of Low GWP Refrigerants”. The cognizant TC is 3.3 and the PES is evaluating potential bidders for recommendation to TC 3.3.

- Proposed RTAR – “Correlating Interactive Behavior of Process Chemicals on System Component Performance”. Recommended chair – Brad Boggess.

MOTION #5 A motion was made by Sonny Sundaresan and seconded by Greg Smith to approve the proposed RTAR idea and recommended chair.

MOTION PASSED 14-0-0-CV

- Proposed RTAR – “Kinetic and Mechanistic Studies of the Breakdown of HFO Refrigerants”. Recommended chair – Elyse Sorenson.

MOTION #6 A motion was made by Steve Kujak and seconded by Danny Halel to approve the proposed RTAR idea and recommended chair.

MOTION PASSED 14-0-0-CV

- Proposed RTAR – “HFO Compatibility with Aged Polyolester Lubricants and Contaminants”. Recommended chair – Joe Karnaz

MOTION #7 A motion was made by Dave Vincent and seconded by Sonny Sundaresan to approve the proposed RTAR and recommended chair.

MOTION PASSED 14-0-0-CV

Webmaster – Dave Vincent

The website will be updated with the approved Houston agenda and Chicago meeting minutes. The TC Chair meeting handout will also be uploaded.

Membership – Joe Karnaz

The following new TC 3.2 committee roster is effective after July 1st, 2018:

Warren Clough – Chair/VM
 Ed Hessel – Vice Chair/CM
 Joe Karnaz – Secretary/VM
 Rob Yost – Standards/VM
 Greg Smith – Handbook/VM
 Dave Vincent – Webmaster/VM
 Tom Leck – MTG Low GWP/VM
 Brad Boggess – Programs/CM
 Mark Baker – Research/CM
 Scott Gustafson – ALI/CM
 Danny Halel – VM
 Sarah Kim – VM
 Chris Reeves – VM
 John Senediak – VM
 Steve Baker – VM
 Elyse Sorenson – VM
 Jian Sun-Blanks – VM
 Sage Tomlinson – VM
 Rosine Rohatgi – VM

MTG Lower GWP Refrigerants – Tom Leck

The MTG, at each meeting, has 2 main committee meetings, a research subcommittee meeting and a codes and standards subcommittee meeting. An update was given on completed, ongoing and proposed research projects.

Old Business

No old business was brought before the committee.

New Business

Sonny Sundaresan suggested that the audience recognize Danny Halel and Joe Karnaz for their accomplishments of receiving the ASHRAE Distinguished Service Award.

Adjournment

The meeting was adjourned at 4:00 pm through a motion by Steve Kujak and second by Danny Halel.

Respectfully submitted,

Joe Karnaz – Secretary