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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 January 30, 2018

TC/TG/MTG/TRG TITLE System Chemistry

DATE OF MEETING January 22, 2017 LOCATION Chicago, IL

| 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 | | | |
| Greg Smith | 2015 | | | |
| Dave Vincent | 2017 | MEMBERS ABSENT | | |
| Tom Leck | 2015 | Sarah Kim | 2017 | |
| 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, January 22, 2018. The meeting was held in Palmer House, Clark 5, 7th floor, Chicago, IL. After the introduction of members and guests, a quorum was confirmed with 11 members present; 3 members were absent.

Note: At the start of the meeting 11 members were present and during the meeting two additional members joined and one had to leave. Votes on motions reflect the number of voting members present during the vote.

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 Sonny Sundaresan and seconded by Danny Hael to approve the Agenda for this meeting as written.

MOTION PASSED 11-0-0-CV

MOTION #2 A motion was made by Joe Karnaz and seconded by Dave Vincent to approve the Minutes from the meeting in Long Beach in June of 2017.

MOTION PASSED 11-0-0-CV

Report on TC 3.0 Chair Breakfast Meeting

- Publications Committee: Two new portal tools. Standard 90.6 ASHRAE Technology Portal. ASHRAE conference Portal.
- ASHRAE Historical Committee. Looking for abstracts now due at the end of March. There was some discussion as to whether section 3, as a whole, or an individual section would be interested in submitting.
- CEC: Ongoing issue with presentations not being uploaded on time. This is not acceptable. For Chicago, 38 presentations had not been uploaded by deadline. Still many not uploaded by 1/20. A high number of presentations is expected for Houston. The competition for available spots will be very high. Deadline is February 9th. Presentation uploads by May 30th.
- Winter conference Atlanta: Due dates are listed on the conference website. There will be a Refrigeration track at each Winter meeting going forward.
- Other details of the TC Chairs breakfast meeting to be uploaded to the TC 3.2 website.
- **Publication Tools:**

New ASHRAE Technology Portal (www.ashrae.org/technologyportal)

1. ASHRAE Journal Articles (free for members)
2. ASHRAE Research Reports (free for members)
3. ASHRAE Transactions and Conference Papers (available by subscription)
4. ASHRAE Conference Seminars (available by subscription)

New ASHRAE Authoring Portal (www.ashrae.org/authoringportal)

1. Multiple authors review, revise and edit a document together in Word
2. ASHRAE-approved, secure platform for copyrighted intellectual property

3. Contact Mark Owen (mowen@ashrae.org)

ASHRAE Terminology (www.ashrae.org/ASHRAETerms)

1. Free online glossary of more than 3700 terms related to the built environment
2. Help your publication development efforts
3. Give your input to TC 1.6 by checking for accuracy and omission

Liaison Reports:

TAC Section 3 Head, Jay Kohler, thanked the committee and offered his support to our TC. Jay asked Warren to forward the documents from the TC Chairs breakfast so Dave Vincent can place them on the TC 3.2 website.

RAC (Steve Kujak)

Research dollars available. We gave back about \$400K last year. About 15 projects going out for bid in RAC. Only 2 RTARS and 2 Work Statements were reviewed. There will be more reviews in the future.

Sub-Committee Reports

Program – Steve Baker for Brad Boggess

Refrigerant mini-track in progress at Expo Center today. Report from first session (11-noon) was that there was good attendance (50-75 attendees). Also, was a comment that the audience was very different from what we currently have at our seminars. This fulfilled a major goal for this mini-track.

Future programs

Houston appears to be full. People who want to submit individual papers should still submit.

Rosine Rohatgi has forwarded her final report to the research project monitoring subcommittee for review and final approval. Assuming approval, she will probably plan to submit for presentation in Atlanta.

There was discussion of doing a future minitrack at Atlanta. Chris Seeton has created a spreadsheet that will serve as a working outline and has been forwarded to select individuals involved in program. The goal is to finalize a program and submit abstracts for acceptance for Atlanta.

Suggested session topics include:

- Equipment and Systems
- Fluids (refrigerants lubricants)
- Regulations and Codes
- Research

There was a proposal that some of the papers that will be presented by TC members at Purdue can be reworked for the minitrack in Atlanta.

Writing a paper and making a presentation for the ASHRAE Anniversary Program specific to TC 3.2 was discussed and a conference call with prospective individuals will be initiated. As noted in the Chair meeting notes abstracts are due in March.

Handbook – Gregory Smith

The handbook revision is completed and is in the hands of ASHRAE for gallery proofs.

Standards –Rob Yost

- GPC 38P – *Metal Pressure Vessel Method to Test Materials Used with Refrigeration Systems*
 - Joe Karnaz – Chair. Committee members are Alan Cohen, Ed Hessel, Brad Boggess, Rosine Rohatgi, Elyse Sorenson, John Senediak and Chris Seeton. All information has been submitted to ASHRAE and is being prepared for public 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. Intention is to vote on final draft and submit.
- Proposed Method of testing compatibility was championed by Steve Baker. Proposal was sent to several people for comment. Comment made that most of content already exists in Guideline 6. Decision was made to withdraw the proposal. Written notice was provided to TC 3.2. Warren commented that Guideline 6 is coming up for review and is managed by TC 3.1. A suggestion was made that someone from 3.2 should be on the committee to ensure that the material compatibility section is updated.
- No other new standard ideas were discussed.

Research – Mark Baker

- WS 1774 “Effects of System Chemicals Towards the Breakdown of Lubricants and Lower GWP Refrigerants” The contractor is Spauschus Associates. Rosine Rohatgi has submitted a draft report to the PMS (Julie Majurin, Chris Seeton, Greg Smith and Ivan Rydkin). The intention is to get a quick review so that the final report can be submitted to RAC by March 5.
- WS 1790 “Distribution of Water between Vapor and Liquid Phases of Low GWP Refrigerants”. Work statement is almost complete and will go out for bid soon.
- Proposed: “Compatibility of Rubber Hoses with HFO Refrigerants”
Chris Seeton reported that the auto industry is getting their own studies and data together. It is currently on hold. It is believed that the major issue is an additive used in PAG oils used in oils for R-1234yf in automotive. Chris Seeton said that he is still willing to put together the RTAR. A proposal was made that someone write a conference paper once all the details and data from the investigation is available. This will be removed from the proposed projects list.
- How does sealed tube testing that included process chemicals correlate to valve clogging. Mark Baker, Elyse Sorenson, Warren Clough, and Brad Boggess volunteered to craft the RTAR.
- There was much discussion around studying impact of using less pure refrigerants in applications (gas grill grade propane; industrial grade CO2). Conclusion was that this is already included in the proposed research roadmap. The current roadmap only states “lower GWP refrigerants”. No specific proposals were put forth.

Webmaster – Dave Vincent

The website is up to date.

Membership – Joe Karnaz

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

Warren Clough – Chair/VM
Ed Hessel – Vice Chair/VM
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
Steve Kujak – VM
Chris Reeves – VM
John Senediak – VM
Sonny Sundaresan/VM
Steve Baker/VM

Rolling Off as Voting Members on 7/1/2018

Ed Hessel
Steve Kujak
Sonny Sundareson

Rolling on as Voting Members on 7/1/2018

Rosine Rohatgi
Jian Sun-Blanks
Sage Tomlinson
Elise Sorenson

MTG Lower GWP Refrigerants – Tom Leck

Goal is to accelerate the acceptance in low GWP refrigerants. A brief update on research projects in progress was given:

- 1806 modeling has issued their task one report.
- 1807 Flammability Guidelines for Safe Handling. Have a final report under review.
- 1808 Mechanical Joints and Leaks. About 85% of the work is complete.

- **Codes and Standards Initiative**

- Proactive outreach to building codes groups to make sure that they are ready to update their codes. The codes update on a 3-year cycle. 2L information has not been accepted into the standard so unlikely that 2018 will include the changes for low GWP alternatives is unlikely. 2021 is the new targets.

Old Business

No old business was brought before the committee.

New Business

No new business was introduced.

Adjournment

The meeting was adjourned at 3:46 pm by Chair Warren Clough.

Respectfully submitted,

Joe Karnaz and Ed Hessel— Secretary and Substituting Secretary