

AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS, INC.
1791 Tullie Circle, N.E./Atlanta, GA 30329
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TC/TG/TRG MINUTES COVER SHEET

(Minutes of all TC/TG/TRG Meetings are to be distributed to all persons listed below within 60 days following the meeting.)

TC/TG/TRG NO 3.2 DATE February 5, 2017

TC/TG/TRG TITLE System Chemistry

DATE OF MEETING January 30, 2017 LOCATION Las Vegas, NV

Members and Committee PRESENT	STATUS	Members and Committee ABSENT	STATUS	ADDITIONAL ATTENDANCE
Rosine Rohatgi	Chair/VM	John Senediak	VM	Julie Majurin
Warren Clough	VChair/VM	Steve Kujak	VM	Joe Nigro
Joe Karnaz	Sec/VM			Ken Lilje
Greg Smith	Hand/VM	Mark Baker	Research	Elyse Sorenson
Brad Boggess	Prog/VM			Jian Sun-Blanks
Scott Gustafson	NQM			Patrick Coughlan
Tom Leck	VM			Joe Longo
Ed Hessell	VM			Sheli Porter
Chris Reeves	VM			Tony Barthel
Chris Seeton	VM			Angel Mendez
Sonny Sundaresan	VM			Wasim Arkam
				Pradeep Kodumuri
Rob Yost	Standard			Frank Nagy
Dave Vincent	Web			Chris Campo
				David Lee
				Don Fenton
				Scott Wujek
				Steve Baker
				Marc Scancarello
				Roberto Urrego
				Bill Morton
				Sarah Kim
				Knut Petry
				Juan Flores
				William Kopko
				Jay Kohler
				Danny Halel
				Yanwei Cen
				Chelle Estades
				Rob Chevasco

DISTRIBUTION

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

TAC Section Head: Jay Kohler	
All Committee Liaisons As Shown On TC/TG/TRG Rosters: Research Liaison – Steve Kujak	Manager Of Standards – Stephanie Reiniche Manager Of Research & Technical Services – Mike Vaughn
Note: These draft minutes have not been approved and are not the official, approved record until approved by this committee.	

Call to Order

Chair Rosine Rohatgi, called the meeting to order at 2:15 pm on Monday, January 30, 2017. The meeting was held in Caesar's Emperors II in Las Vegas. After the introduction of members and guests, a quorum was confirmed with 10 members present (including non-quorum); 3 members were absent. One member joined the meeting later for total of 11 voting members present. An error in the roster and the changing of jobs resulted in 3 voting members from the same company being on the committee, two of these three members will abstain from voting and Joe Karnaz will be the company representative on the committee. The chair has submitted paperwork to correct and revise the roster.

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 Tom Leck and seconded by Warren Clough to approve the Agenda for this meeting as written.

MOTION PASSED 8-0-2-CV Scott Gustafson and Chris Seeton abstained because of aforementioned conflict.

MOTION #2 A motion was made by Joe Karnaz and seconded by Warren Clough to approve the Minutes from the meeting in St. Louis in June of 2016.

MOTION PASSED 7-0-3-CV Scott Gustafson and Chris Seeton abstained because of aforementioned conflict. Greg Smith abstained because he was not present at the June meeting.

Report on TC 3.0 Chair Breakfast Meeting

- In this morning Section 3 TC chairs breakfast, a couple of items were identified that Section 3 TC's and the MTG – Low GWP refrigerants could coordinate with each other. Steve Kujak volunteered to pull together the section and MTG for a discussion on the following items.
 - 1) **Refrigerants Mini-Track @ Chicago Expo:**

CEC has worked very hard to get “refrigeration and/or refrigerants” track back on schedule with the winter meetings. In this regard, a mini track on “refrigerants” has been developed that will be at the AHR Expo in Chicago. This is a great opportunity for us to get out in front of members who attend the show and not the technical conference. We will have a number of slots that we will need to fill and come up with a plan on topics and speakers. We can do seminars, forums, etc. If you have a technical paper or conference paper you want to submit or have submitted for Chicago, it was suggested to allow it to follow the standard process and present at the technical conference side, but you could present it again in this mini-track. We need to have a program plan and review in Long Beach with CEC for input and suggestion ahead of the August 1 deadline for programs for Chicago.
 - 2) **Develop a longer term process for coordination of Research/Programs in Section 3 and MTG:**

A number of the TC 3's meet concurrently to discuss research already. It was discussed at the TC 3 Chair breakfast and recommended by CEC to coordinate and develop longer range plans for programs across the Section and MTG to prevent gaps we have had in the past with not getting programs accepted. Section 10 already does this and it works effectively with them. We need to find time slots to have concurrent discussion for Section 3 TC/MTG program and research. TC 3.2,3.3, 3.4 already do this for research (we can invite TC 3.1 and TC 3.6 to join). We need to find 2 two- hour slots to pull together members in an already used time slot, with appropriate room size, to have discussions for programs concurrently.

It was also suggested that we have a longer range, coordinate plan for Program and Research. RAC already does this for Section 3/MTG (pulls all research together into one report and there is a Section 3/MTG research liaison who is Steve Kujak) so this process is in place already for members and could be used for this purpose. Programs would require a Section 3/MTG liaison or a process for program chairs to fill out, like the RAC report, to help coordinate programs and communicate them with CEC members. Steve will work with Mike Vaughn to help pull together a meeting slot in Feb to start to have these discussions.
- Hightower Award Recipient is Paul Lindahl from TC 3.6 and TC 8.6
- Service to ASHRAE Research Award Recipient is Joseph Huber of TC 1.3

- New ASHRAE Technology Portal is available for members to access free ASHRAE Journal articles and ASHRAE research reports at : <http://technologyportal.ashrae.org>
- One new multidisciplinary Task Group: MTG.ACR (Air Change Rate)
- New restructured TC MOP (Manual of Procedures) will be issued after this Las Vegas meeting

LAS VEGAS MEETING:

- TC Program Subcommittee Chair Training on Tuesday 1/31 at 11:15 AM in FORUM 23 (Pool Level of the Caesars Palace Hotel)
- Twelve TCs, 19 PCs and 2 Ad Hoc committees are participating in the Remote Participation Meetings (RPM) test, which allows some TC members to participate in the TC meeting from a remote location electronically.

UPCOMING DEADLINES

- Seminar and Forum Proposals for Long Beach are due by Monday, February 6th, 2017.

RECENT ANNOUNCEMENTS:

- In 2015-2016 RAC started prioritizing for bid accepted research topics that support Goal # 3 from the Research Strategic Plan ("*To reduce significantly the energy consumption for HVAC&R, water heating and lighting in existing homes*")
- CEC's Standing Request for Future Society Meeting Program Track Suggestions: CEC seeks ideas for tracks for the Houston 2018 meeting and annual and winter conferences beyond as well as topics for specialty conferences from TC members
- CEC seek qualified volunteers for potential Technical Session Chairs and reviewers of session papers. There is a link on the webpage of the ASHRAE website where you can volunteer online to be a paper reviewer: <https://www.ashrae.org/membership--conferences/conferences/papers-and-programs#reviewers>

Liaison Reports:

TAC Section 3 Head, Jay Kohler, thanked the committee for their good service and commented on our ability to maintain quorum during our meetings. Jay discussed the procedure of becoming a provisional member through the on-line process. Those who submitted to be provisional members need to communicate to the chair that they would like to roll on to be a corresponding member. These CM should be ready to assist the technical committee. Jay reminded the committee that the 2017/2018 roster will be worked on at this meeting.

Handbook Liaison, Don Fenton said it looks like we are progressing on our handbook chapter and reminded the committee that this is the critical semester for getting everything prepared to meet the deadline. Don gave a handout with important information to the TC 3.2 Handbook Chair Greg Smith.

Sub-Committee Reports

Program – Brad Boggess

There were no TC sponsored programs in Las Vegas. The program chair listed some programs that might be of interest to the committee:

Tuesday – Seminar 39 Low GWP Refrigerants and Their Applications Part 1

Seminar 56 Low GWP Refrigerants and Their Applications Part 2

Wednesday – Paper Session 22 Refrigeration Systems and Low GWP Refrigerants

If you missed this program and have registered for the conference you can view it on the virtual conference.

Future program ideas:

Long Beach:

This conference will contain a Refrigeration Track so the program committee felt this would be a good opportunity to have a seminar. The program committee brought forth a suggestion for a seminar topic and the committee discussed the topic and asked for volunteer speakers. Three companies offered to present (Arkema, Shrieve and Parker) and one more presenter might be added. This TC will be a cosponsor of this seminar with either TC 3.3 or TC 3.4 being the cognizant TC. The deadline for submission of paperwork is February 10th.

MOTION #3 A motion was made by Brad Boggess and seconded by Greg Smith to cosponsor a seminar in Long Beach titled “Contamination Controls and Lubricant Consideration during Retrofit of Low GWP Refrigerants ” Chaired by Ed Hessell.

MOTION PASSED 8-0-2-CV Scott Gustafson and Chris Seeton abstained because of aforementioned conflict.

Action Item: Program information and presenter information needs to be submitted by February 10th.

Chicago:

The chairs of TC Section 3 along with MTG Low GWP have discussed with CEC the opportunity to have a mini track for Chicago on low GWP refrigeration and other considerations. The mini track will be coordinated with the AHR Expo and be presented at the Expo conference center site, along with only needing an Expo registration to attend. Four to five slots will be available to present seminars, conference papers, forum and workshops. The program chairs from the section 3 and MTG committees will meet to draft an outline of the program to submit to CEC. The technical committee discussed a number of ideas and the program committee will incorporate these ideas into their plan.

Action Item: Section 3 and MTG Low GWP program representatives to draft mini track outline.

Other Ideas:

No other plans for future programs were discussed.

Handbook – Gregory Smith

The handbook process is on track. Timing for the 2018 Refrigeration Handbook is a that the chapter needs to be ready for vote by July 21, 2017. The committee is aiming for completion for vote by the June TC 3.2 meeting. The ASHRAE conference call system will be utilized for the committee to meet in the next few months to finalize the draft of the chapter.

Committee Members include – Chair – Greg Smith, Rosine Rohatgi, Brad Boggess, Ed Hessell, Warren Clough, Elyse Sorenson and Sonny Sundaresan.

Action Item: Handbook committee to meet via conference call prior to next meeting.

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 Hessell, Brad Boggess, Rosine Rohatgi, Elyse Sorenson and Chris Seeton. The public review draft is ready for the committee to do a final review for submission. The committee will meet on Monday afternoon to review the draft and anticipate sending to ASHRAE within the next two months. Roster adjustments are needed due to some conflicts of interest that now exist on the committee. Chris Seeton will roll off the committee and John Senediak will roll on.
- SPC 97-2007 – Sealed Glass Tube Method to Test for Chemical Stability of Materials for Use Within Refrigerant Systems
 - Chris Seeton – Chair. Committee will meet on Tuesday morning at 9:30. The committee feels they are making good progress but most likely the 10 year standard period will elapse before they complete to send for public comments and revision. The lapsed period will result in losing ANSI listing but this will probably only be for 6 months.

Open Discussion: A previously discussed topic on polymeric material testing was revisited and the committee decided to drop this topic from further discussion.

A new standard was proposed and a draft of a TPS was presented to the committee. The document will be done as a guideline with title “Method of Testing the Compatibility of Materials with Refrigerant and Lubricant.” The technical committee had a lengthy discussion on the direction and scope of the guideline. It was agreed that this was needed and should be done as a guideline but the committee wanted to see some revision of the scope to incorporate some other types of material testing. Marc Scancarello and Steve Baker will edit the document and submit back to the TC chair for a letter ballot vote.

Action Item: Letter Ballot needed after revising TPS of Guideline

Research – Mark Baker (Joe Nigro Substituting)

- WS 1774 “Effects of System Chemicals Towards the Breakdown of Lubricants and Lower GWP Refrigerants” A contractor was awarded the project at the St. Louis meeting. The contractor is Spauschus Associates. Rosine Rohatgi gave an update on the progress of the work. Five process chemicals from previous research work was chosen as baseline studies in R-134a and the HFOHFC blend (equal parts of R-1234yf, R-1234zeE and R-32). Results of the test are complete and repeatable with previous tests were validated so now 20 additional process chemicals will be tested with the HFO/HFC blend.
- RTAR 1790 “Distribution of Water Between Vapor and Liquid Phases of Low GWP Refrigerants”. Authored by Brad Boggess – this RTAR proposed investigating 5-6 refrigerants. It was decided to rewrite as a work statement with more clearly defined objectives. The committee voted to cosponsor this work with TC 3.3 as the cognizant TC.

MOTION #4 A motion was made by Sonny Sunderesan and seconded by Chris Reeves to cosponsor RTAR 1790 to be written as a work statement.

MOTION PASSED 9-0-2 CV Scott Gustafson and Chris Seeton abstained because of aforementioned conflict.

- Past Ideas
 - An RTAR is being drafted on “Chemical Stability of New Refrigerant Blends Components; R-1123 and R-1130(E). The draft of the RTAR should be completed in about two months and the team drafting the RATR will decide based on RAC review timetable if a letter ballot is needed or wait until the next TC meeting in June to take a vote.
- New Ideas generated from research subcommittee meeting
 - Compatibility of rubber hoses with HFO refrigerants. Some issues have been seen in the automotive industry and some lab testing. Chris Seeton will draft an RTAR to see if this type of research is needed in the stationary market.

Action Item: Chris Seeton to draft RTAR

- Other
 - Joe Nigro made the group aware of Innovative Research Grant (IRG) ASHRAE program and recommended if anyone doing research that fit these criteria should approach ASHRAE.

Webmaster – Dave Vincent

The website is up to date. If there is any pertinent information that needs to be placed on the website please send to Dave Vincent.

Membership – Rosine Rohatgi

The current TC membership and management team is in place until after the summer meeting. The new rollover roster is being worked on and the chair asked if anyone was interested in becoming a voting member or corresponding member. As mentioned earlier roster adjustments to clear up roster issues will be taken care of by an emergency roster change process.

MTG Lower GWP Refrigerants – Tom Leck

Tom Leck updated the TC on current MTG LGWP activities especially regarding research of 2 proposed work statements and 2 research projects underway. ASHRAE would like these research projects to move rapidly to help facilitate commercialization.

Old Business

No old business was brought before the committee.

New Business

Tom Leck commented on the ALI short course presented on Sunday afternoon and felt it was well attended and others might be scheduled.

Adjournment

The meeting was adjourned at 4:10 pm by Chair Rosine Rohatgi through a Motion made by Greg Smith and seconded by Chris Reeves.

Respectfully submitted,

Joe Karnaz – Secretary