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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. TC 8.5 DATE 1/30/2017

TC/TG/MTG/TRG TITLE: LIQUID TO REFRIGERANT HEAT EXCHANGERS

DATE OF MEETING June 27, 2016 LOCATION Marriott St. Louis Grand Hotel, St. Louis, MO, USA

MEMBERS PRESENT	YEAR APPTD	MEMBERS ABSENT	YEAR APPTD	EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE	
Satyam Bendapudi	07/01/2014	Ebrahim Al-Hajri	07/01/2014	William Asher	Melanie Derby
Sankar Padmanabhan	07/01/2015	Justin Kauffman	07/01/2014	Joseph Huber	Puxuan Li
Steven Eckels	07/01/2015	James Schaefer	07/01/2012	Ratnesh Tiwari	Satheesh Kulankara
Stanislav Perencevic	07/01/2012	John Thome	07/01/2015	Kashif Nawaz	Michael Wilson
Zahid Ayub	07/01/2014			Chao Shen	Florian Hudelmaier
Benjamin Dingel	07/01/2014			Lorenzo Cremaschi	Johnny Cheung
Evraam Gorgy	07/01/2013			Adnan Ayub	
Andreas Knoepfler	07/01/2013			Achim Gotterbarm	
Kaushik Oza	07/01/2015			Steven Trimble	
				Ted Wayne	
				Minoq Mehdizadeh	
DISTRIBUTION: All Members of TC/TG/MTG/TRG plus the following:					
TAC Section Head: Dustin Meredith			SH8@ashrae.net		
All Committee Liaisons As Shown On TC/TG/MTG/TRG Rosters (Research, Standards, ALI, etc.)					
Mike Vaughn, Manager Of Research & Technical Services			MORTS@ashrae.net		

1. Meeting called to order by acting chair (current vice-chair) Satyam Bendapudi at 4:16 PM. The chair Ebrahim Al-Hajri could not attend this meeting. Secretary Yang Zou could not attend the meeting. Satheesh Kulankara agreed to act as secretary for the meeting. The scope of the TC was read by the acting chair. There were 25 attendees at the start of the meeting. The attendees introduced themselves.
2. Establishment of Quorum
 - The following voting members were present at the meeting: Satyam Bendapudi, Sankar Padmanabhan, Steven Eckels, Stanislav Perencevic, Zahid Ayub, Benjamin Dingel, Evraam Gorgy, Andreas Knoepfler, Kaushik Oza
 - The following voting members were absent at the meeting: Ebrahim Al-Hajri, Justin Kauffman, James Schaefer, John Thome
 - 9 out of 13 voting members were present, establishing quorum
3. Review/approve minutes from previous meeting
 - The meeting minutes from the winter 2016 Orlando meeting was reviewed and the following two corrections were made to the draft meeting minutes:
 - Satheesh Kulankara will roll in as voting member starting 7/1/2016
 - Steven Trimble would be a non-voting member
 - Zahid Ayub moved to accept the draft minutes with the above two corrections. Stanislav Perencevic seconded the motion. The minutes were approved 9-0-0-4 by the TC voting members.
4. Chairman's reports/comments
 - Satyam Bendapudi attended the Chair's breakfast and provided comments that are summarized below
 - ASHRAE is deploying a new roster system starting with the next roster update cycle. Members will be able to view the rosters of all the committees in which they are members. Training related to the new roster system will be provided on the ASHRAE website
 - Two (2) new MTGs have been formed. MTG. IAST (Impact of ASHRAE Standards) and MTG. OBB (Occupant Behavior in Buildings).
 - ASHRAE MOP is being updated and will be available on the ASHRAE website after the summer 2016 meeting
 - ASHRAE has adopted BaseCamp as a document sharing platform
 - CEC is challenged with submissions arriving late beyond the deadline. Speakers may be barred as a presenter for up to a year if they make 3 late submissions.
 - There was some discussion in the TC on how another of CEC policies to rate speakers will be implemented. There was concern that speakers who are not native English speakers will be discouraged from presenting at ASHRAE conferences. It is not clear how this policy is being implemented.
 - Each TC has to review ASHRAE Code of Ethics at the start of the meeting. The Code of Ethics is available on the ASHRAE website.
 - RAC is prioritizing research affecting the residential sector
 - 2010-2015 ASHRAE strategic research plan has been extended to 2018

5. Section Head (Dustin Meredith) Comments
 - Section head was present and participated during the presentation and discussion of the items from the Chair's breakfast above and did not have any further comments.
6. Liaison Comments
 - There were no liaisons present during the meeting
7. Membership Subcommittee Report (Kaushik Oza)
 - Membership subcommittee chair Kaushik Oza presented a report on the TC membership and reviewed the changes to the roster. Rosters for the current (2015-2016) and upcoming (2016-2017) society years were summarized. Voting members Kaushik Oza, James Schaefer, Justin Kauffman, Stanislav Perencevic and Ebrahim Al-Hajri will roll out at the end of 2015-2016 society year. Yang Zou, Satheesh Kulankara, Joseph Huber, Lorenzo Cremaschi will roll in as voting members at the beginning of 2016-2017 society year. Satyam Bendapudi, Yang Zou and Satheesh Kulankara will be the chair, vice-chair and secretary, respectively from the beginning of 2016-2017 society year. Kaushik Oza, Steven Eckels, Sankar Padmanabhan, Kashif Nawaz and Joseph Huber will continue as the Chairs for membership, program, handbook, research and standards subcommittees, respectively.
 - TC 8.5 has 58 corresponding members
8. Handbook Subcommittee Report (Sankar Padmanabhan)
 - There are no changes or updates to discuss during this meeting. The updates for 2016 version were accepted and are now included in the published version of the handbook. The next update for handbook from TC 8.5 is required for the 2020 version.
9. Program Subcommittee Report (Steven Eckels)
 - TC 8.5 seminar submission "Fundamentals of heat exchangers for low GWP refrigerants" for the summer conference in St. Louis was not accepted
 - There are no program submissions for the Winter 2017 conference in Las Vegas
 - Summer 2018 conference in Long Beach has a track for refrigeration. Subcommittee chair requested volunteers for a conference paper session for the Long Beach conference. Steve Eckels made a motion to propose a conference paper section for Long Beach. Benjamin Dingel seconded the motion. TC voted 9-0-0-4 to approve the motion.
 - Lorenzo Cremaschi is trying to arrange a mini-conference during the winter 2018 meeting in Chicago on real world application of heat exchangers to focus on practical issues like frost formation, fouling etc. Steven Eckels made a motion for TC 8.5 to participate in this mini-conference should ASHRAE accept the proposal. Sankar Padmanabhan seconded the motion. TC voted to 9-0-0-4 to approve the motion.
10. Standards Subcommittee Report (Joseph Huber)
 - TC 8.5 is responsible for 3 standards: Standard 22 MOT for water cooled condensers, Standard 181 MOT for liquid to liquid heat exchangers and Standard 24 MOT for rating liquid coolers. Standards 22 and 181 were recently updated. Standard 24 is scheduled for a rewrite. A SPC 24 committee was proposed and approved for the

standard 24 rewrite. The approved SPC 24 subcommittee members are Joseph Huber, Zahid Ayub, Benjamin Dingel, Steven Eckels, Evraam Gorgy and Satheesh Kulankara.

11. Journal/Insights/Webmaster Report (Joseph Huber)

- The TC website is generally up to date. The approved minutes from the Atlanta meeting in summer 2015 are not yet available on the website. Satyam Bendapudi to follow up to get the minutes document for posting on the website.

12. MTG Liaison (Steven Eckels)

- TC 8.5 is a member of the Low GWP Refrigerants MTG. Steven Eckels is the primary representative of TC 8.5. Satheesh Kulankara is the first alternate representative. The Low GWP MTG is going to be much more involved in research related to moderately flammable refrigerants with funding promised by external agencies and ASHRAE.

13. Research subcommittee report (Kashif Nawaz)

- There is a new manual along with new training material for Project Monitoring Subcommittees available. Training sessions on the new manual are planned during the winter 2017 meeting in Las Vegas.
- ASHRAE and external agencies have committed nearly 5.2 million USD for research into the safe use of mildly flammable (“A2L”) refrigerants. ASHRAE research will be conducted through the Low GWP Refrigerants MTG.
- A meeting to review research activities was held on Sunday, June 26
- RP1677
 - PMS chair Benjamin Dingel provided an updated on the activities within RP1677. The PI provided an updated on the status of the project during the research review meeting on Sunday, June 26. There was also a teleconference between the PMS and PI between the winter 2016 Orlando and summer 2016 St. Louis meetings. The PI has made changes to the test facility to better control water quality. The current plan is to create high fouling potential water and run tests for a few weeks as a shakedown of the test facility and to ensure that the water quality can be maintained within specifications for an extended period of time. PI has made progress with the test facility but some issues are still to be resolved. The PMS provided suggestions to improve the facility and shared some concerns about the ability to create and maintain water quality during testing. One of the PI is relocating to China and new student is scheduled to take primary responsibility for the project. The PI hopes to get started on actual testing after concerns are addressed and hope to have some data to share by the meeting in Las Vegas.

14. New Business

- Benjamin Dingel provided an update on the revisions to ASME pressure vessel code. ASME is proceeding with changes to eliminate certain exceptions in the code that would have significant impact for HVAC&R equipment manufacturers in the 2019 version of the code. The ASME committee responsible for the pressure vessel code was not receptive to the comments provided by various manufacturers, engineers and organizations including ASHRAE on the adequacy of existing provisions and is proceeding with the proposed changes.

15. Schedule Next meeting

- Acting Chair scheduled the next meeting for Monday, January 25 from 4:15 PM to 6:30 PM during the ASHRAE meeting in Las Vegas. The exact location for the meeting will be published in the meeting guide.

16. TC meeting adjourned at 6:05 PM