ASHRAE TC 10.1
Custom Engineered Refrigeration Systems
2018 Winter Meeting Minutes

Date: Monday, Jun 25, 2018 Time: 2:00 – 4:00 P.M.

Grand F, 4th floor Hilton, Houston, TX

1. Call to Order
2. Introduction of Members and Guests.
3. Establish Quorum
    a. Voting Members: **Kent Perkins, Doug Scott**, **James Young, Bill Brayman,**
    Attendance: in bold
    Quorum not met; No Voting can occur
4. Code of Ethics: Read by K. Perkins
    Can be found online
5. Meeting Minutes
    a. Vote on Meeting Minutes
    Comments: Quorum not met
6. Report on Section Head Meeting
7. Liaison Reports
    a. Section Head – James Tauby
        - 2019~2020: ASHRAE 125th Anniversary; ASHRAE Historical committee looking for historical documentations (papers, articles, etc) to out into single periodical; suggest looking for refrigeration related articles to be included
        - ASHRAE Letter head should not be used for basic statements (includes communication between TCs); For any requests for use of ASHRAE letterhead, TAC needs to be reviewed and signed by ASHRAE president. This is very long process and is discouraged.
        - Next Conference in Atlanta; Winter meeting Refrigeration track will be held; need to fill up; need to finish paperwork and look for email to complete of process

    b. Research – Dr. H Ezzat Khalifa
        - No pending RATR and work statement; interest to supporting other TC RATR
            - One in the works
        - Award available; ASHRAE Service for Research award; Website: nominations due Sept 30th
        - Homer-Addams - For Graduate level student; award includes $5,000 cash award and certification; Requires to be published in ASHRAE publication; nominations are due Dec 3rd 2018.

C. Others

8. Committee Reports:

A. Handbook – Dan Dettmer

New 2018 ASHRAE Handbook – Refrigeration released; Committee needs to start working next update. There is one year to review chapters for gaps in information with additional year to update.

Need to have chapter read by the committee members for rough feedback and agree on information gaps.

TC 10.01 Handbook Chapters are: 4, 5, 13, 45, 46, 47, 48, 49, 50

Need volunteers to review the chapters above for information gaps

Chapter 4: “Liquid Overfeed Systems” E. Smith

Chapter 5: “Component Balancing in Refrigeration Systems” needs updating; D. Scott and G. Scrivener

Chapter 13: “Secondary Coolants in Refrigeration Systems”; needs updating

B. Research – Doug Scott

1634-RP: Guideline for Refrigeration System (TC10.1 was a co-sponsor to TC10.5)

Tools to need to be developed

RTAR – Industrial Refrigeration defrost loads; will be able to submit for 1st RAC review with

D. Scott will send update on RTAR to TC by end of July; will send to K. Perkins and another individual who assisted for final review before submission; TC 10.8 (cosponsor) will need to vote on statement also.

Need another RTAR in the works for future submission;

Program discussion ideas:

1) Mechanical insulation in high humidity occurrence;

2) Method of Testing for product temperature coming out of process freezer to accurately determine the temperature of the product (not core, not surface, etc.); Allows end user to following a standard method for various type of product and product packaging;

a) Not product specific; Should allow end users to balance production and food quality demands;
b) reduce over freezing and under freezing and thus secondary effects associated with each
c) How does a freezer manufacturer test their freezer? Can end user be found to assist in test as 2nd source for added input on the issue and hold.
    a. does this apply to critical charged systems?

Programs: Design of Press Relief systems for CO2 trans critical (Doug R); Refer to TC10.3 Piping or TC10.8 Refrigeration load calculations because of impact piping and loads; Will have to involve standard 15 due to impact safety committee;

Need to consultant with standard 15 and impact to the program;

T. Jekel bring up the work statement

A. Suction Vessel: Liquid / Vapor separation based on droplet size; using CFD model; Ammonia, CO2 / Halocarbon may be helpful; Industrial and medium system;
    a. Dr. Pega Hrnjak: what is the pressure drop allowed? Size available? Efficiency of separation?
    b. Bent W worked on the original program (size, orientation); T. Jekel worked on an old RTAR with a professor at Georgia Tech (name unknown);
        i. Suggest to chemical industrial to guidance; process separation guidance
        ii. There is value to ASHRAE membership: Need to update handbook material with updated miller equation in handbook;
        iii. D. Scott will be reach out to T. Jekel to confirm if he is willing to assist in future work

1569-RP "CFD Study Of Hydraulic Shock In Two-Phase Anhydrous Ammonia" with D. Lakehal as Principal Investigator:

Update: Received first draft of final report; working with additional material and will have ready for Jan meeting; may submit to TC10.3 for letter ballot. (TC 10.1 co-sponsor);

SRV capacity impact due to backpressure consideration in relief headers. Should consult with ASHRAE 15 committee due to possible consideration of impact to relief header sizing.

B. Standards – Greg Scrivener
    a. STD 15: Add A; Removed Ammonia; Approval
    b. Appendix D; new requirements for 2L high probability systems in human comfort applications. Going out for 4th Review; 30-day public review from July 6 to Aug. 8:
    c. Appendix H; propose to allow A2L refrigerants in applications requiring machinery room installation; Going out for 3rd review; 45-day public review from July 6 to Aug. 29:
C. Programs – Tom Wolgamot
    a. Refrigeration track in Atlanta; Submitted two Tech Papers (Low charge ammonia – not accepted for conference paper; should we submit for conference seminar Aug 3rd);
    b. For conference paper at Summer 2019 (Kansas City); deadline is July 9th
    c. Possible AIR
        i. Guideline: Design consideration for low frequency weather events; How to design for resilient; Guideline should start as forum or seminar; Should ask TC10.5 to handle due to facility design consideration;
        ii. Implementation of Speed Control on (air) refrigerant distribution and its effect within the refrigeration system. Impact to DX feed coils.

D. Webmaster – No webmaster; last update 2015; Need to Volunteer to update website
    a. Need instructions to update
    b. E. Smith will update temporarily
E. Membership – K. Perkins
    a. Rolling off: Bruce Griffith; Todd Jekel; Richard Love
    b. Rolling on: Jim Caylor.; Greg Scrivener, Adnan Ayub
G. ALI Coordinator – Dan Dettmers

9. Old Business

TC10.1 low GWP MDG– research committee; $ 1.5 million A2L research focused;

A. Flammable – post ignition; what happens, burning velocity; no assessments; need to figure how reproduce in a test,
B. Guideline for Flammable Refrigeration in terms of storage and handling.
C. Guideline Flammable - Field made mechanical drawings; small fittings; braze joint is not considered a mech joint in terms of the scope of research program.
D. No comments regarding A2L refrigerants

10. New Business

No new

11. Announcements

A. The next meeting will be in Atlanta, GA 2:15 PM on Monday, Jan 14, 2019.

12. Adjournment