

TC 08.05 RESEARCH REPORT – JAN 2014 / NEW YORK

The joint TC 1.3/8.5 Research Review Meeting usually held on Sun from 3:00pm-7:00pm was omitted from the first preliminary committee meeting schedule posted on the ASHRAE website (at least as late as 20-Dec-2013). The meeting time did show up (as unconfirmed) in a later release (eg, 03-Jan-2014). However, the PI for 1677-RP had already made arrangements to arrive in New York late Sun afternoon, too late to attend the Sun meeting. The Sun meeting was used by TC 1.3 to conduct a status update of 1556-RP – Characterization of Liquid Refrigerant Flow Emerging from a Flooded Evaporator Tube Bundle.

Active Research Projects

1677-RP – Measurement and Prediction of Waterside Fouling of Internally Enhanced Condenser Tubes in Cooling Tower Applications PI: Dr Xinlei Wang and Dr Tony Jacobi, University of Illinois – Urbana/Champaign. Start date: 01-Sep-2013. Original end date: 31-Dec-2015. PMS: Ben Dingel (chair), Satyam Bendapudi, Andreas Knoepfler, Satheesh Kulankara, James Schaefer.

RAC approved the TC's recommendation of a contractor for this project at their Denver meeting (22-Jun-2013). The project has been awarded to the University of Illinois – Urbana/Champaign with PI's Dr Xinlei Wang and Dr Tony Jacobi for a duration of 28 months.

The first progress report was distributed to the PMS on 13-Jan-2014, mainly comprising a preliminary test facility design proposal along with a number of questions. A teleconference was held 15-Jan-2014 to review the report and address questions posed by and provide feedback to the PIs. Additional feedback was provided by the PMS by email on 16-Jan. A face-to-face meeting between the PI and PMS was conducted Mon 20-Jan during the New York conference. The PI will continue to work on the facility design. James Schaefer volunteered to provide advice toward design and construction of the test condensers. Andreas Knoepfler volunteered to assist with selection of the tubes to be tested.

Prospective Research Projects

A strong list of research projects was generated at the Denver meeting. Zahid Ayub drafted a work statement titled "Study of Outside Condensation of Carbon Dioxide with Enhanced Tubes" that was circulated among the committee for discussion in Oct 2013. The work statement was withdrawn by the author following questions of the perceived limited impact of the work that arose during the voting period.

A draft RTAR titled "Heat Transfer Performance of Medium Pressure Alternative Lower GWP Refrigerants in a Flooded Evaporator Comprising an Enhanced Tube Bundle", authored by Justin Kauffman, was circulated to the committee just prior to the New York meeting. Ken will prompt the membership for comments and discussion over the next couple of weeks. A final draft will be compiled from the comments received and distributed for a vote by email ballot.

It is hoped another RTAR can be generated and approved by the committee prior to the next submission deadline of 15-May. Our list of topics includes:

- *Heat transfer performance of lower GWP refrigerants in a sprayed evaporator bundle*
- *Heat transfer performance of lower GWP refrigerants in a condenser tube bundle.*

- *Heat transfer performance of lower GWP refrigerants in plate-type evaporators.*
- *Heat transfer performance of lower GWP refrigerants during in-tube flow boiling.*
- *Evaluation of Tube Cleaning Processes and Techniques.*
- *Impact of Oil on Flooded Coolers.*

TC 8.2 has submitted an RTAR to perform a field survey of oil levels/concentrations in evaporators of scroll, screw, and centrifugal chillers; the RTAR was approved at the New York RAC meeting. A follow-on project would be needed to understand the implications of the survey results on actual chiller performance.

Notes from Research Breakfast

The slides from the Research Breakfast are attached. ASHRAE currently has 62 active research projects with a total value of \$10.8M. Since Jun-2013, 6 projects were completed, 10 new projects were approved (7 already under contract), and 8 RFP's released for bid. There is now a more normal balance between proposed research and available funding.

In New York, RAC evaluated 6 RTAR's with 2 conditionally accepted, 1 accepted, 1 returned, and 2 rejected. Four work statements were evaluated with 1 accepted, 1 conditionally accepted, and 2 returned with comments. There are 11 TRP's ready for bid in Spring 2014. In addition, RAC has received 5 URP's that are under review.

The contractor selection process was reviewed during the meeting. Our PES's have done a good job of following the process. The process is described in detail in the Research Manual for reference, <https://www.ashrae.org/standards-research--technology/research> (link to document is toward bottom of the page).

The next deadline for RTARs and WSs is 15-May. According to our liaison, the agenda for the Spring meeting (if there is one) is full of administrative tasks and so no new RTARs or WSs will be reviewed at that time.



Research Subcommittee Chairs' Breakfast Presentation

Winter Meeting 2014 – New York, NY
Donald Bivens, Vice Chair
Monday, January 20, 2014



Research Administration Committee

1901-501

1



***MANY THANKS TO
YOU AND YOUR
COMMITTEES!***

'RESEARCH IS THE TECHNICAL UNDERPINNING OF ASHRAE'

"RESEARCH IS THE FUNDAMENTAL FOUNDATION OF ASHRAE"

Edward Tsui, BOD Ex-Officio, January 18, 2014



Research Administration Committee

1901-501

2



Agenda

- Current Projects
- WS, RTAR, and URP Status
- GIA, Homer Adams, and New Investigator Awards
- Announcements
- Piotr Domanski: Contractor Selection for Research Projects.....PES

12/18/2013



Research Administration Committee

3



Current Projects

- We have 62 active RPs
- **Total value \$ 10.8 million**

Large project recently completed. → \$12M

Since June 2013:

- **6** projects were completed.
- **10** new projects approved for funding (7 have been contracted)
- **8** Tentative Research Project (TRPs) released for bid (no projects on-hold due to funding)

12/18/2013



Research Administration Committee

4

Good balance between WS & funding.



WS, RTAR, and URP Status

- In New York, RAC evaluated **6 RTARs** (1650, 1715, 1716, 1722, 1725, 1727) – conditionally accept pending report of TC vote/reject/accept/return/reject/conditionally accept
- RAC evaluated **4 WS** (1627, 1669, 1705, 1724) – return/return/conditionally accept/accept
- Potential TRPs ready for bid in spring 2014-
11
- **5 URPS** under review by RAC and TCs

19-01-2014

 Research Administration Committee

5



Why do RTARs get Returned?

- Most common reasons
 - Not appropriate for ASHRAE funding
 - Inadequate references to past work or existing literature
 - Project description not clear; how it will “advance” the state-of-the art
 - Budget does not seem in line with work to be completed

Research SC Chairs strongly encouraged to get feedback from Research Liaison during the breakfast meeting

19-01-2014

 Research Administration Committee

6



GRANTS-IN-AID (\$ 10k each)

- A letter announcing the availability of ASHRAE Grants-In-Aid for Graduate students was sent to over 300 colleges in October 2013.
- **64** candidates applied for a grant and **23** were selected by the RPS (last year we had 63 applicants and selected 23)

10/01/2013



HOMER ADAMS AWARD

- Meant for deserving graduate students who participated in an ASHRAE sponsored RP
- Two applicants, with one selected for the award
- Announcement of recipient to be made later
in Feb.

10/01/2013



NEW INVESTIGATOR AWARD

- 13 researchers were nominated for the award (7 nominations last year)
- Applications were reviewed on January 18, with the selection of the winner; to be announced later *in Feb*

ASHRAE

11



ANNOUNCEMENTS

- Service to ASHRAE Research Award: no qualifying nominations were received this year
- New (shorter, more concise) RTAR submittal form to be used; can be found on the ASHRAE Research website
- It is important to obtain full TC vote accounting on approvals of submitted RTARS and WSs
- Work Statement submittals based on conditionally approved RTARs must include descriptions of how approval conditions were met

ASHRAE

12



Use Your Liaison

- Your Liaison should read your RTARs and WSs before you submit them.
 - But give them more than a couple days before the deadline
- Your Liaison can help you interpret RAC comments and the Research Manual
- Your Liaison is your champion!
 - He can advocate for you, if he is involved



Your Research Liaisons are ready to help you

- 1- Arthur Giesler
- 2- Harvey Sachs
- 3- Mark Spatz
- 4- Xudong Yang
- 5- Piotr A Domanski
- 6- Stephen Hancock
- 7- Phil Haves
- 8- David Yashar
- 9- Kishore Khankari
- 10- John Shonder



ASHRAE RESEARCH VISION: ASHRAE conducts timely research to remain the foremost.....international source of technical and educational information, standards, and guides on the interaction between people and the indoor and outdoor environment through the operation of HVAC&R systems in buildings and other applications.

ASHRAE RESEARCH STRATEGIC PLAN (2010-2015) addresses technical challenges that limit our ability to maximize building performance, energy efficiency, and indoor environmental quality, while minimizing our impact on the environment.



Research Administration Committee

1001.2011

11

Section 8 Liaison:

There will be a Spring RAC meeting, but lots of administrative work on their agenda already. So, no 15 Feb deadline for RTAs/WSS. Next deadline is 15-May.