

THE RESEARCH & TECHNICAL ACTIVITIES REPORT

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FOR TC/TG CHAIRS &
RESEARCH SUBCOMMITTEE CHAIRS
October 18, 2010

ASHRAE 2010 TECH WEEKEND MEETING

The fall meetings of the Research Administration Committee (RAC), Technical Activities Committee (TAC), and Technology Council were completed earlier this month.

PROJECTS AWARDED

No new projects have been awarded since the Albuquerque meeting in June.

PROJECTS PENDING AWARD OR THAT FAILED TO BE AWARDED

No tentative research projects (TRP) or unsolicited research proposals (URPs) are pending a funding decision at this time or have failed to be awarded since the Albuquerque meeting.

PROJECTS RELEASED FOR BID IN FALL 2010

RAC decided to release the following two projects for bid this fall:

- **1580-TRP**, “*Study of Input Parameters for Risk Assessment of 2L Flammable Refrigerants in Residential Air Conditioning and Small Commercial Refrigeration Applications*”
Responsible Committee: **TC 3.1** (Refrigerants and Secondary Coolants);
Est. Total Cost: \$250,000 - Duration: 18 Months – Est. Impact on FY10-11: \$62,500
AHRTI has made a Co-funding commitment of 25% up to \$87,500 max.
- **1613-TRP**, “*Update Climatic Design Data in Chapter 14 of the 2013 Handbook of Fundamentals;*”
Responsible Committee: **TC 4.2** (Climatic Information);
Est. Total Cost: \$150,000 - Duration: 24 Months – Est. Impact on FY10-11: \$28,125

OTHER RESEARCH RELATED REQUESTS FOR FALL 2010

ASHRAE TC 5.2, Duct Design, seeks contestants to evaluate the feasibility and accuracy of using CFD techniques to numerically determine the loss coefficients for duct fittings under research project 1493. The contest winners will present their results in technical papers published by ASHRAE, and may be awarded a nominal cash prize. Complete details are provided at <http://tc52.ashraetcs.org/index.html>.

POTENTIAL PROJECTS FOR BID IN SPRING 2011

A portion of the following twenty-three tentative research projects are expected to be released for bid next spring pending completion in some cases of all pre-bid conditions by the responsible committee, and acceptance of these conditions by their section Research Liaison prior to February 15, 2010.

- **1399-TRP**, “*Survey of Particle Production Rates from Process Activities in Pharmaceutical and Biological Cleanrooms;*” Responsible Committee: **TC 9.11** (Clean Spaces); Status: **RFP ready to bid now.**
- **1410-TRP**, “*Effect of System Chemicals toward the Breakdown of Lubricants and Refrigerants;*” Responsible Committee: **TC 3.2** (Refrigerant System Chemistry). Status: **RFP ready to bid now.**
- **1413-TRP**, “*Developing Standard Procedures for Filling Climatic Data-Gaps for Use in Building Performance Monitoring and Analysis;*” Responsible Committee: **TC 4.2** (Climatic Information); Status: **RFP ready to rebid now.**
- **1447-TRP**, “*Performance of Pressurized Stairwells with Open Doors;*” Responsible Committee: **TC 5.6** (Control of Fire and Smoke); Status: **RFP ready to bid now.**

- **1458-TRP**, “*Modeling Person-to-Person Contaminant Transport in a Mechanical Ventilation Space;*” Responsible Committee: **TC 4.10** (Indoor Environmental Modeling); Status: **RFP ready to bid now**.
- **1462-TRP**, “*Active Mechanisms for Enhancing Heat and Mass Transfer in Sorption Fluids;*” Responsible Committee: **TC 8.3** (Absorption and Heat Operated Machines); Status: **RFP ready to bid now**.
- **1495-TRP**, “*Effect of Lubricant on the Distribution of Water between the Vapor and Liquid Phases of Refrigerants;*” Responsible Committee: **TC 3.3** (Refrigerant Contaminant Control); Status: **RFP ready to bid now**.
- **1499-TRP**, “*The Effect of Humidity on the Reliability of ICT Equipment in Data Centers;*” Responsible Committee: **TC 9.9** (Mission Critical Facilities, Technology Spaces and Electronic Equipment); Status: **RFP ready to bid now**.
- **1502-TRP-R**, “*User Interface Design for Advanced System Operation,*” Responsible Committee: **TC 1.4** (Control Theory and Application); Status: **REBID**. Need Research Liaison OK of new recommended bidders list and possibly revised WS to assure bids are received for this final project solicitation.
- **1504-TRP-C**, “*Extension of the Clothing Insulation Database for Standard 55 and ISO 7730 to Provide Data for Non-Western Clothing Ensembles, Including Data on the Effect of Posture and Air Movement on that Insulation;*” Responsible Committee: **TC 2.1** (Physiology & Human Environment); Status: **Conditionally accepted for bid** 10.10. Work with Research Liaison to resolve RAC’s approval conditions by February 15th so project can possibly bid this spring 2011.
- **1529-TRP**, “*Full-Frequency Numerical Modeling of Sound Transmission in and Radiation from Lined Ducts;*” Responsible Committee: **TC 2.6** (Sound and Vibration Control); Status: **RFP ready to bid now**.
- **1550-TRP**, “*Thermal Performance of Insulating Coating;*” Responsible Committee: **TC 1.8** (Mechanical System Insulation); Status: **RFP ready to bid now**.
- **1556-TRP**, “*Characterization of Liquid Refrigerant Flow Emerging from a Flooded Evaporator Tube Bundle;*” Responsible Committee: **TC 1.3** (Heat Transfer and Fluid Flow); Status: **RFP ready to bid now**.
- **1557-TRP**, “*Lab Comparison of Relative Performance of Gas Phase Filtration Media at High and Low Challenge Concentrations;*” Responsible Committee: **TC 2.3** (Gaseous Air Contaminants and Gas Contaminant Removal Equipment); Status: **RFP ready to bid now**.
- **1564-TRP**, “*Measurement of Oil Retention in the Microchannel Heat Exchanger;*” Responsible Committee: **TC 8.4** (Air to Refrigerant Heat Transfer Equipment); Status: **RFP ready to bid now**.
- **1565-TRP**, “*Development of the ASHRAE Design Guide for Dedicated Outdoor-Air Systems;*” Responsible Committee: **TC 8.10** (Mechanical Dehumidification Equipment and Heat Pipes); Status: **RFP ready to bid now**.
- **1581-TRP**, “*Develop Alternate Set-up Guidelines for Unitary Air Conditioner Test Configurations Which Cannot Adhere to ASHRAE 37 /ASHRAE 116 specified Duct Dimensions and External Pressure Tap Locations;*” Responsible Committee: **TC 8.11** (Unitary and Room Air Conditioners and Heat Pumps) ; Status: **RFP ready to bid now**. **Potential \$10k in co-funding from AHRTI**
- **1584-TRP**, “*Assessment of Alternative Approaches to Predicting the Burning Velocity of a Refrigerant;*” Responsible Committee: **TC 3.1** (Refrigerants and Secondary Coolants). Status: **RFP ready to bid now**. **Potential \$15k in co-funding from AHRTI**

- **1592-TRP**, “*CHP Design Guide – Update to the Cogeneration Design Guide (1996)*,” Responsible Committee: **TC 1.10** (Cogeneration Systems); Status: **RFP ready to bid now**.
- **1602-TRP**, “*Thermal-Fluid Behavior of Mixed Refrigerants for Cryogenic Applications*,” Responsible Committee: **TC 10.4** (Ultra-Low Temperature Systems and Cryogenics); Status: **Accepted for bid 10.10**. Work with MORTS to finalize RFP by February 15th so project can possibly bid this spring 2011.
- **1603-TRP**, “*Role of HVAC Systems in the Transmission of Infectious Agents in Buildings and Intermodal Transportation*,” Responsible Committee: **TC 9.3** (Transportation Air Conditioning); Status: **RFP ready to bid now**.
- **1604-TRP-C**, “*Demand Controlled Filtration for Clean Rooms*,” Responsible Committee: **TC 9.11** (Clean Spaces); Status: **Conditionally accepted for bid 10.10**. Work with Research Liaison to resolve RAC’s approval conditions by February 15th so project can possibly bid this spring 2011.
- **1606-TRP**, “*Laboratory Testing of Flat Oval Transitions to Determine Loss Coefficients*,” Responsible Committee: **TC 5.2** (Duct Design); Status: **RFP ready to bid now**.

Work statements for the projects listed above without the status “Ready to Bid” require additional information or work from the TC on the draft RFP before they are eligible for bid in spring 2011. Revised work statements or approved RFPs for these projects must be submitted to the MORTS on or before February 15th, 2011 in order to be eligible and ready to bid or rebid in spring 2011.

WORK STATEMENTS REVIEWED AND RETURNED WITH COMMENTS

A total of seven work statements were submitted by the TCs for review at the Tech Weekend meeting; One was approved as-is, two were conditionally approved, and four were returned with comments. Three of the seven project work statements that were reviewed and either accepted as-is or conditionally accepted at the Tech. Weekend meeting are listed for bid above. The other four project work statements that were reviewed are listed below.

- **1491-WS**, “*Literature and Product Review and Cost Benefit Analysis of Commercially Available Ozone Air Cleaning for HVAC Systems*,” Responsible Committee: **EHC** (Environmental Health Committee); Status: **Returned**. Work with Research Liaison to resolve RAC’s comments before resubmitting.
- **1579-WS**, “*Testing and Evaluation of Ozone Filters for Improving IAQ*,” Responsible Committee: **TC 2.3** (Gaseous Air Contaminants and Gas Contaminant Removal Equipment); Status: **Returned**. Work with Research Liaison to resolve RAC’s comments before resubmitting.
- **1607-WS**, “*Design and Utilization of Thermal Energy Storage to Increase the Effectiveness of Wind Energy Resources*,” Responsible Committee: **TC 6.9** (Thermal Energy Storage); Status: **Returned**. Work with Research Liaison to resolve RAC’s comments before resubmitting.
- **1610-WS**, “*Development of a Transposition Model for Clear-Sky Solar Irradiance*,” Responsible Committee: **TC 4.2** (Climatic Information); Status: **Returned**. Work with Research Liaison to resolve RAC’s comments before resubmitting.

WORK STATEMENTS PREVIOUSLY RETURNED TO TCs

TC/TGs should work with their Research Liaison to respond to written comments on the work statement provided by RAC via letter and revise the work statement appropriately. You can find a copy of the last draft submitted to RAC along with RAC’s comments by clicking on the links in the Society’s Research Implementation Plan posted on the “Research” page of the ASHRAE website. Please note that topics will be dropped from this plan if the work statement is not approved for bid after four years on the plan. The work statement forms that are now in use by RAC for Society year 2010-2011 can also be found on the “Research” page www.ashrae.org/research

New or revised work statements and RTARs need to be received by the Manager of Research and Technical Services (MORTS), Mike Vaughn, mvaughn@ashrae.org, no later than **December 15, 2010** in order to be considered by RAC at its Winter Meeting in Las Vegas.

REVIEW OF RESEARCH TOPIC ACCEPTANCE REQUESTS (RTARS)

RAC reviewed twelve RTARs at their fall meeting and approved the following five for inclusion in the Society's Research Implementation Plan and for further development into work statements:

- **1614-RTAR**, "*Evaluation of Effectiveness of UV Systems;*" Responsible Committee: TC 5.10 (Kitchen Ventilation); Status: Accepted As-Is.
- **1616-RTAR**, "*Revise Load Calculation Applications Manual (2009);*" Responsible Committee: TC 4.1 (Load Calculation data and Procedures); Status: Conditionally Accepted.
- **1624-RTAR**, "*Effective Energy –Efficient School Classroom Ventilation;*" Responsible Committee: TC 2.1 (Physiology and Human Environment); Status: Accepted As-Is.
- **1628-RTAR**, "*Physical Properties Measurements of HFO-1234yf / Lubricant Mixtures;*" Responsible Committee: TC 3.4 (Lubrication); Status: Conditionally Accepted.
- **1631-RTAR**, "*Commercial Appliance Emissions for Operation with "Type I" or "Type II" Hoods;*" Responsible Committee: TC 5.10 (Kitchen Ventilation); Status: Conditionally Accepted.

RTARs Returned or Rejected with Comments:

- **1609-RTAR**, "*Defining the Capabilities, Needs and Current Limitations of Building Information Modeling (BIM) in Operations and Maintenance for HVAC&R;*" Responsible Committee: TC 7.3 (Operation and Maintenance Management); Status: Returned.
- **1623-RTAR**, "*Develop a Method for Testing the Mist Removal Efficiency and Air Flow Resistance of Oil Mist Collectors;*" Responsible Committee: TC 5.4 (Industrial Process Air Cleaning (Air Pollution Control)); Status: Returned.
- **1625-RTAR**, "*Application of ASHRAE 62.1 Indoor Air Quality Procedures;*" Responsible Committee: TC 2.3 (Gaseous Air Contaminants and Gas Contaminant Removal Equipment); Status: Returned.
- **1626-RTAR**, "*Energy Implications of Air Filtration in Commercial Buildings;*" Responsible Committee: TC 2.4 (Particulate Air Contaminants and Particulate Contaminant Removal Equipment); Status: Returned
- **1627-RTAR**, "*Measurement of Energy Performance of ASHRAE Energy Design Guides (AEDG);*" Responsible Committee: TC 2.8 (Building Environmental Impacts and Sustainability); Status: Returned.
- **1629-RTAR**, "*Testing and Modeling Energy Performance of Active Chilled Beam Systems;*" Responsible Committee: TC 5.3 (Room Air Distribution); Status: Returned.
- **1630-RTAR**, "*Update the Scientific Evidence for Specifying Lower Limit Relative Humidity Levels for Comfort, Health and IEQ in Occupied Spaces ;*" Responsible Committee: TC 5.11 (Humidifying Equipment); Status: Returned.

The RTAR form that is now in use by RAC for Society year 2010-2011 can be found on the "Research" page of the ASHRAE website, www.ashrae.org/research

The next deadline for submitting new or revised RTARs and WSS is **December 15, 2010** for consideration at the winter 2011 meeting of RAC.

SOCIETY RESEARCH IMPLEMENTATION PLAN

The Society Research Implementation Plan is now being updated following the fall meeting of RAC. New RTARs will be added and tentative research project RFPs will be added or dropped depending on their bid status. This change to the way the implementation plan is updated necessitated that time limits be placed on how long a topic can remain on the plan without being approved for bid. The fall updates to the plan should be in place by November 15, 2010. Please review the latest draft of the Implementation plan posted on the ASHRAE "Research" page to see if any topics your TC is sponsoring are in danger of being dropped from the plan.

DEADLINES

The following deadlines apply for the next several months. Please recognize that they are not arbitrarily set, but are set to meet subsequent events. So if you miss them, your input may be delayed for six months or in some cases, for a year. All submissions should be sent to the Manager of Research and Technical Services (MORTS), Mike Vaughn, (morts@ashrae.net).

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| October 15, 2010 | Fall 2010 tentative research projects (TRPs) are released for bid. |
| November 10, 2010 | ASHRAE IAQ 2010 Conference – <i>Airborne Infection Control Ventilation, IAQ & Energy</i> – November 10-12, 2010 – Kuala Lumpur, Malaysia - : http://www.ashrae.org/iaq2010 |
| November 12, 2010 | Completed TC/TG/TRG Meeting room request form for 2011 Winter meeting due to Judy Marshall (jmarshall@ashrae.org) at ASHRAE HQ. Subcommittee meeting rooms must be requested each meeting or they will be dropped automatically. |
| November 30, 2010 | TC/TG/TRG Chairs receive 2011-12 roster update workbook for completion. |
| December 1, 2010 | Applications for the ASHRAE New Investigator Award are due to MORTS. |
| December 15, 2010 | Voluntary training webinar #1 for chairs on 2011-2012 TC/TG/TRG roster update workbook – 1 pm EST – Contact Tara Thomas (tthomas@ashrae.org) for details |
| December 15, 2010 | Applications for ASHRAE Graduate Student Grant in Aid program are due to MORTS. |
| December 15, 2010 | Nominations for the ASHRAE Homer Addams Award, which is given to graduate students assisting in current or recently completed ASHRAE sponsored research projects, are due to MORTS. |
| December 15, 2010 | Bids are due for all TRPs released in fall 2010. |
| December 15, 2010 | New or revised Work Statements and RTARs are due to MORTS for RAC consideration at the 2011 winter meeting. |
| December 17, 2010 | Conference Papers for 2011 annual meeting in Montreal, Canada are submitted for review. |
| December 29, 2010 | TC/TG/TRG meeting agenda for the Las Vegas meeting are posted on TC website and distributed to membership. |
| January 12, 2011 | Voluntary training webinar #2 for chairs on 2011-2012 TC/TG/TRG roster update workbook – 1 pm EST – Contact Tara Thomas (tthomas@ashrae.org) for details |

- February 1, 2011
Midnight** Roster update workbooks for 2011-2012 TC/TG/TRG rosters are due to section head
- February 1, 2011
Midnight** Contractor recommendations are due to MORTS for all TRPs bid in fall 2010 or before. Place the Proposal Evaluation Summary sheet in MORTS lockbox outside ASHRAE Headquarters Room in Las Vegas.
- February 12, 2011** Seminar and forum proposals due for 2011 Annual meeting in Montreal, Canada – Meeting topics include Alternative Technologies, Net-Zero Buildings, Engineering Tools, HVAC&R Fundamentals and Commissioning - Submission website opens January 14, 2011 – www.ashrae.org/montreal
- February 15, 2011** Conditionally approved tentative research projects that are approved for bid or re-bid must have all conditions satisfied with section Research Liaison and be in the hands of the MORTS by this date or sooner if they are to be eligible for bid in spring 2011

OTHER INFORMATION

1. TC “Help Wanted” Section to be added to ASHRAE website

A new “Help Wanted” section will be added to the Technical Committee page of the ASHRAE website so that TCs can advertise requests for help. Requests could include calls for new members, a webmaster, reviewers and contributors for a handbook chapter or special publication, special expertise that resides outside the TC, equipment donors for a research project, etc. Requests should be for needs that need to be fulfilled within the next 6-12 months. Chapter Technology Transfer Committee (CTTC) will assist in this effort by making sure ASHRAE chapters are aware of this request list. Please pass on any requests for your TC on to the Manager of Research and Technical Services, Mike Vaughn, at mvaughn@ashrae.org or MORTS@ashrae.net

2. Option for TC Subcommittee Meetings via Conference Calls and Web Meetings

More and more TCs are taking advantage of a new Society service that allows TCs to hold subcommittee meetings by phone and/or web. Many TCs are finding this to be a more efficient way for them to conduct subcommittee business and it also allows TC members that can't travel to meetings on a regular basis a way to still contribute to the TC. Such a change can also eliminate potential conflicts with the TC's program sessions at Society meetings. Please pass your conference call/web meeting/webinar requests on to the Manager of Research and Technical Services, Mike Vaughn, at mvaughn@ashrae.org or MORTS@ashrae.net

3. Research Strategic Plan for 2010-2015 Now Available

The approved final draft of the Research Strategic Plan for 2010-2015 is now available at <http://www.ashrae.org/technology/page/39>

4. 10-11 Rosters & Process for Distribution

The new TC/TG/TRG rosters for 2010-2011 are now in effect. Each TC chair should have already received a copy of their roster from their section head in PDF and MS-Excel format. In addition, each member can view all of their current (10-11) committee rosters on the ASHRAE Website. Go to www.ashrae.org, click on the "Membership" tab in the header, click on "Manage Your Membership" text in the left sidebar, and log in (if you have not logged in lately, you might need to set up a new username and password). Click on the "Biographical Record System" link. Now, you should see your current "bio info". Click on "My Committees" on the left sidebar; all of the committees you are a member of will appear. Click on the "blue" roster text at the left hand side of a committee to reveal the roster with linked contact information. Please distribute the roster files to your committee and make sure everyone on your committee also knows how to access the roster online for the latest version throughout the year.

5. Recently Approved Changes to the ASHRAE TCs/TGs/TRGs Committee Structure and Scopes

- TC 6.8 and TC 9.4 have been merged to form a new TC 6.8 with a new scope.
- TG3.CDBF has been converted to TC 7.2 – HVAC&R Construction & Design Build Technologies with a new scope.
- A new technical resource group TRG4.IAQP – Indoor Air Quality Procedure Development has been formed.
- TRG7.SBOMC – Tools for Sustainable Building Operations Maintenance and Cost Analysis – has been disbanded now that their mission is complete and the TRG membership will shift to GPC 32P – Sustainable. High Performance Operations & Maintenance
- The scopes for TC 5.10 – Kitchen Ventilation and TC 2.5 – Global Climate Change have been modified.

Please review the updated TC/TG/TRG Scopes document posted at the following link to learn more about these changes: <http://www.ashrae.org/technology/page/104>

6. Useful TC/TG/TRG Chair Information and forms on ASHRAE website

Information for TC/TG/TRG chairs can be found on the Technical Committee page of the ASHRAE website at the following link: <http://www.ashrae.org/technology/page/104>.

Please let me know if I can be of any other assistance.

Sincerely,

Mike Vaughn

Manager, Research and Technical Services