



Shaping Tomorrow's
Built Environment Today

MINUTES

RESEARCH ADMINISTRATION COMMITTEE

**PALMER HOUSE HOTEL
CHICAGO, IL**

JANUARY 23, 24 & 28, 2015

Note: These draft minutes have not been approved and are not the official, approved record until approved by the Research Administration Committee.

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JANUARY 23, 24 & 28, 2015

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**PRINCIPAL MOTIONS
RESEARCH ADMINISTRATION COMMITTEE
JANUARY 23, 24 & 28, 2015**

NO.	PAGE	MOTION
1	1	It was moved and seconded that, the draft minutes of the RAC 2014 fall meeting are approved as written.
2	4	1745-RTAR, <i>Evaluation of Climate Reanalysis Data for Use in ASHRAE Applications</i> , sponsored by TC 4.2 (Climatic Information), is <u>conditionally accepted</u> .
3	4	1752-RTAR, <i>Guidelines for Avoided Electric Generation/Source Energy Consumption due to Waste Heat Recovery and Heat Pump Technologies</i> , sponsored by TC 6.8 (Geothermal Heat Pump and Energy Recovery Applications), is <u>rejected</u> .
4	5	1754-RTAR, <i>Developing the Standard Test Method for Dynamic Characteristics of Vibration Isolators</i> , sponsored by TC 2.6 (Sound and Vibration Control), is <u>conditionally accepted</u> .
5	5	1756-RTAR, <i>Evaluation of Low-Cost Particle and CO₂ Sensors for Indoor Air Quality Monitoring in Smart Building System</i> , sponsored by TC 2.4 (Particulate Air Contaminants and Particulate Contaminant Removal Equipment), is <u>conditionally accepted</u> .
6	5	1649-WS, <i>IAQ and Energy Implications of High Efficiency Filters in Residential Buildings</i> , sponsored by TC 2.4 (Particulate Air Contaminates and Gas Contaminant Removal Equipment), is <u>conditionally accepted</u> .
7	5	1650-WS, <i>Training Requirements for Sustainable, High Performance Building Operations</i> , sponsored by TC 7.3 (Operation and Maintenance Management), is <u>conditionally accepted</u> .
8	5	1675-WS, <i>Guidance for CFD Modeling of Data Centers</i> , sponsored by TC 4.10 (Indoor Environmental Modeling), Co-sponsored by TC 9.9, is <u>returned</u> .
9	6	1710-WS, <i>Effects of Dynamic Shading Devices on Daylighting and Energy Performance of Perimeter Zones</i> , sponsored by TC 4.5 (Fenestration), is <u>conditionally accepted</u> .
10	6	1729-WS, <i>Experimental Verification of Cooling Load Calculations for Radiant Systems</i> , sponsored by TC 4.1 (Load Calculation Data and Procedures), is <u>returned</u> .
11	6	1742-WS, <i>Update to Measurements of Office Equipment Heat Gain Data</i> , sponsored by TC 4.1 (Load Calculation Data and Procedures), is <u>conditionally accepted</u> .
12	6	1749-WS, <i>A BIM and Physics-based Modeling Enabled Platform for Monitoring and Visualizing High Performance Commercial Buildings</i> , sponsored by TC 1.5 (Computer Applications), is <u>rejected</u> .
13	6	1755-WS, <i>Impact of Gaseous Contamination and High Humidity on the Reliable Operation of Information Technology Equipment in Data Centers</i> , sponsored by TC 9.9 (Mission Critical Facilities, Data Centers, Technology Spaces and Electronic Equipment), Co-sponsored by TC 2.3 (Gaseous Air Contaminants and Gas Contaminant Removal Equipment), is <u>conditionally accepted</u> .

CONTINUED
PRINCIPAL MOTIONS
RESEARCH ADMINISTRATION COMMITTEE
JANUARY 23, 24 & 28, 2015

NO.	PAGE	MOTION
14	7	The following 22 students are each a recipient of an ASHRAE Graduate Student Grant-in-Aid grant for the 2015-2016 academic year.
15	8	Limin Zhou is the recipient of the 2015-2016 Homer Addams Award.
16	8	Dr. Brent Stephens of the Illinois Institute of Technology is the 2015-2016 recipient of the New Investigator Award.
17	8	RAC approves a funded extension for active research project 1651-RP, <i>Development of Maximum Technically Achievable Energy Targets for Commercial Buildings (Ultra Low Energy Use Building Set)</i> , be awarded to GARD Analytics for a period of 3 months at a total cost to ASHRAE of \$45,000.
18	10	Tentative research project 1607-TRP, <i>Design and Utilization of Thermal Energy Storage to Increase the Ability of Power Systems to Support Renewable Energy Resources</i> , be awarded to the University Wisconsin-Madison for a period of 18 months at a total cost to ASHRAE of \$142,461.
19	10	Tentative research project 1615-TRP, <i>Fault Detection and Diagnostic (FDD) Methods for Supermarkets- Phase I</i> , be awarded to University of Nebraska-Lincoln for a period of 15 months at a total cost to ASHRAE of \$82,272.
20	10	Tentative research project 1663-TRP, <i>Residential IAQ Guide</i> , be awarded to the Schoen Engineering, Inc. for a period of 18 months at a total cost to ASHRAE of \$150,000.
21	10	Tentative research project 1717-TRP, <i>Improve Accuracy and Reproducibility of ASTM-E681 Test Method for Flammability Limit Measurement of 2L Flammable Refrigerants</i> , be awarded to the University of Maryland for a period of 18 months at a total cost to ASHRAE of \$194,560.
22	10	Tentative research project 1724-RP, <i>Study the HVAC System Photodegradation Caused by the Low Level UVC light Irradiance Used for Coil Maintenance and Air Stream Disinfection</i> , be awarded to University of Dayton Research Institute for a period of 18 months at a total cost to ASHRAE of \$90,000.
23	11	Unsolicited research proposal 1757-URP – <i>Airborne Virus Inactivation, Phase I: Using Fluorescent Bleaching of Aerosols as a Measure of Exposure to Oxidizing Ions and Radicals</i> , be rejected for funding.

**New Action Items
Research Administration Committee (RAC)
Winter Meeting 2015**

Action #	Responsibility	Summary of Action	Page # and Deadline
1	Bansal, Haves, Sachs, Giesler	Subcommittee to continue refinement of URP Process and submittal guidelines; possible combination with IRG. Suggested wider review of URPs – more than just RL. Ask all RAC to review or if they know someone qualified in URP technical area for confidential review.	4 Update @ April 14 conf call; vote @ Atlanta mtg
2 MBO2.1	Giesler, Gatlin, Yashar	Changes to GIA program (part of award for expenses for attending ASHRAE winter and/or summer meetings)	4 final draft and vote @ Atlanta
3	Khankari, Haves, Yashar	Develop separate Work Statement evaluation form for Work Statements that were not submitted as RTARs.	4 Update @ April 14 call
4	Bansal, Khankari	Explore rules or communication to emphasize RAC will only accept skipping RTAR stage if there is a strong case and RL approves	5 update @ April 14 call
5	Kankari, Bansal, Vaughn	Investigate staged funding connection with milestone completions in Research Projects	5 update @ April 14 call
6	Bivens, Giesler	Explore how cost estimates in RTAR/WS can be improved.	5 Update @ Atlanta
7	Bansal	Modifications to WS such as development of template and restricting WS length to 10 pages (not including references), single space, font size of 11	5 WS length approved; update @ Atlanta
8	Huber, Shonder, Khankari, Int-hout	RAC subcommittee formed to investigate additional lessons learned and changes needed relative to RP-1603	6 update @ Atlanta; finalize by Fall RAC mtg
9	Sachs, Giesler	URP-1692 funding decision (investigate reasons for continuing as an URP; potential co-funding option)	6 update @ April 14 call
10 MBO1.2	Khankari	Improved efficiency of RAC and TCs: schedule Atlanta forum	6 update @ April call
11	Huber, Bivens, Haves, Yashar	PMS training module; training session during Atlanta Research Subcommittee breakfast meeting; revisions to PMS section of Research Manual for improved understanding of PMS duties (a check list?)	6 update @ April 14 call; Complete by Atlanta mtg
12	Haves, Davies	Potential co-funding cyber-security research project with CIBSE. Need to identify TC or TG group for involvement (TC1.5 or TG2)	7 update @ April 14 call

New Action Items (Continued)
Research Administration Committee (RAC)
Winter Meeting 2015

Action #	Responsibility	Summary of Action	Page # and Deadline
13 MBO2.2	Davies, Wang	Review co-funding prospects from CIBSE & AHRTI	7 April 14 call
14	Huber, Sachs/Staff	Research Manual revisions: more detailed process for research proposals that result in ASHRAE special pubs.	7 Atlanta meeting
15	Shonder	Explore if section on research involving human subjects in the Research Manual should be reviewed and/or enhanced. Currently, there is very brief mention. (Related to discussion of 1649-WS).	7 Update @ Atlanta
16	Khankari	Related to GIA scoring, KK asked 2 members to review his normalization process to set procedure and use in future. Additionally, suggested randomized review assignments also.	8 Update @ Atlanta
17	Sachs/Hancock	Explore formation of an MTG to look into issues presented in 1752-RTAR. Sachs would draft a couple paragraphs defining issue. TC 6.8 would be invited and as would other equipment TCs.	8 Update @ April 14 conf. call
18 MBO2.3	Bivens/Vaughn	Website presentation targeted to potential overseas bidders	8 Update @ April 14 call; complete by Atlanta
19	Staff	Feasibility of (1) website project suggestion box to improve connection between RAC & members, & (2) collect information on those downloading for free or buying final reports for ASHRAE projects	8
20	Staff	Provide history of 1675-WS (on AG, KK, XY visiting with TC earlier, as well as KK document with markups) to be included in evaluation packages to RAC going forward to give full history.	8
21	Staff	Provide stats on how quickly projects get through various steps and to actual RP. To identify where hold ups tend to take place.	8
22	Staff	All references to HVAC&R research journal needed to be changed to new publication title before going out to bid.	9 Complete by DD
23	Staff	Send title & quick summary of ALL URPs submitted to ASHRAE upon receipt to full RAC as early notification & information.	9

New Action Items (Continued)
Research Administration Committee (RAC)
Winter Meeting 2015

Action #	Responsibility	Summary of Action	Page # and Deadline
24	Staff	Insert the watermark "EXAMPLE" into the example PES evaluation sheet to make it clear to reader they should enter their own scoring criteria.	9
25	Staff	RAC to change rules to explicitly state past GIA winners are not eligible. This should be done immediately so former winners do not reapply when 2015 winners are made public.	9 Need to update immediately
26 MBO1.1	Bivens, Yashar, Vaughn	Develop appeal process for PES/PMS members or others interacting with RAC	11 update @ April 14 call; Atlanta report
27 MBO2.5	RAC EXCOM	Plan formation of new Research Advisory Panel	11 update @ April 14 call; plan complete by Atlanta
28 MBO2.4	RAC EXCOM	With presidential ad hoc committee, develop information on impact & benefits of ASHRAE Stds & Technology	11 update @ April 14 call
29	Haves, Yang, Khankari	Develop a more defined process for software upgrade projects; i.e. there should be fast track approach to link this back to the original project. Should it go out to bid or be single sourced to the original software developer? Make recommendations as an Ad Hoc Committee.	11 Update at Atlanta meeting

Carryover Actions
Research Administration Committee (RAC)
Annual Meeting 2014

Action #	Responsibility	Summary of Action	Status
3	Khankari / Staff	Update RTAR review form and review process documentation in Research Manual to reflect new review dispositions - "Accepted with comments", etc.	On-going
9	Khankari / Staff	Investigate the feasibility of collecting information on who is downloading for free or buying the final reports for ASHRAE research projects	On-going

**RECURRING ACTION ITEMS
(EACH MEETING)**

<u>Responsibility</u>	<u>Summary of Action</u>
Chair	Report to Technology Council on RAC's MBO Status.
Research Liaisons	Remind all TC chairs and research subcommittee chairs in section that a draft of all Work Statement and RTARs, and all later versions should be sent to their Research Liaison for review before information is passed on to the Manager of Research.
RPS (Primary) RAS (Secondary)	Review RTARs
RAS (Primary) RPS (Secondary)	Review Work Statements
RAS (Primary) RPS (Secondary)	Review TRPs and URPs
RPS (Primary) upon (Secondary)	Review and revise the Society's Research Implementation Plan based accepted RTARs.
Subcommittee Chairs	Report Status of assigned MBOs.
Staff	Distribute copies of Technology Council's Action Items and Motions affecting RAC.
BOD ExO	Report to the RAC Chair BOD's Actions and Motions affecting RAC.
Staff	Forward URPs to RAS Chair to help identify a champion for the URP on RAC based on members background and experience. The RAC URP Champion will either help select a cognizant TC to review the URP or return the URP with a recommendation that it not be reviewed further as a possible ASHRAE research project.

**RECURRING ACTION ITEMS
(FALL MEETING)**

<u>Responsibility</u>	<u>Summary of Action</u>
RLs	Review "Service to ASHRAE Research Award" nominations submitted by TC chairs and select the best nomination for RAC consideration.

RECURRING ACTION ITEMS
(WINTER MEETING)

<u>Responsibility</u>	<u>Summary of Action</u>
RAS	Plan TC Research Subcommittee chair Training Workshop for Winter Meeting
RPS	Review Grant-In-Aid Applications
RPS	Review New Investigator Award Nominations
RPS	Review Homer Addams Award Nominations
Chair	Present Service to ASHRAE Research Award to this year's recipient
RAC	Decide if spring meeting is needed and set date for spring meeting.
MORTS	Prepare semi-annual report to RAC by December 15.

RECURRING ACTION ITEMS
(ANNUAL MEETING)

<u>Responsibility</u>	<u>Summary of Action</u>
RPS	Plan training workshop for new RAC members at the Annual meeting
Research Liaisons	Request nominations from TCs for Service to ASHRAE Research Award
Chair	Invite new members of RAC to the workshop for new RAC members scheduled for the Annual meeting.
MORTS	Prepare semi-annual report to RAC by May 15.

LIST OF ATTACHMENTS

ATTACHMENT 1:	1651-RP Funded Extension
ATTACHMENT 2:	AHRI – Consultants Report
ATTACHMENT 3:	CIBSE- Consultants Report
ATTACHMENT 4:	MORTS Report
ATTACHMENT 5:	1607-TRP Analysis Sheet
ATTACHMENT 6:	1615-TRP Analysis Sheet
ATTACHMENT 7:	1663-TRP Analysis Sheet
ATTACHMENT 8:	1717-TRP Analysis Sheet
ATTACHMENT 9:	1724-TRP Analysis Sheet
ATTACHMENT 10:	1757-URP Analysis Sheet
ATTACHMENT 11:	RL Section Reports

DRAFT



Shaping Tomorrow's
Built Environment Today

MINUTES

RESEARCH ADMINISTRATION COMMITTEE REPORT TO TECHNOLOGY COUNCIL JANUARY 23, 24 & 28, 2015

MEMBERS PRESENT:

Donald Bivens, *Chair*
Carl Huber, *Vice-chair*
Pradeep Bansal, *Chair RAS*
Kishor Khankari, *Chair RPS*
Arthur Giesler, *RL Section 1.0*
Harvey Sachs, *RL Section 2.0*
Mark Spatz, *RL Section 3.0*
Xudong Yang, *RL Section 4.0*
David John, *RL Section 5.0* – Partial Attendance (New member replacing Ricardo Esbri)
Stephen Hancock, *RL Section 6.0*
Philip Haves, *RL Section 7.0*
David Yashar, *RL Section 8.0*
Jeff Gatlin, *RL Section 9.0*
John Shonder, *RL Section 10.0*
Xudong Wang, *Consultant AHRTI*
Hywel Davies, *Consultant CIBSE*
Daniel Int-Hout, *BOD Ex-Officio*
Bjarne Olesen, *Coordinating Officer*

GUESTS:

Bruce Hunn
Dru Crawley
Peter Simmonds
John Harrod

ASHRAE STAFF:

Michael Vaughn, *MORTS*
Steve Hammerling, *AMORTS*

MEMBER ABSENT: None

A. CALL TO ORDER

Chair Bivens called the meeting of the committee to order at 3:00 PM.

B. ASHRAE CODE OF ETHICS

<https://www.ashrae.org/about-ashrae/ashrae-code-of-ethics>

C. ADDITIONS AND/OR CHANGES TO THE AGENDA

None noted

D. APPROVAL OF MINUTES

It was moved and seconded that,

- (1) The draft minutes of the RAC 2014 fall meeting are approved as written.

MOTION #1 PASSED: 12-0-0, CNV

E. CHAIR'S REPORT

The following items were presented by the chair and discussed:

- a) Disposition of Motions from Last Meeting – No motions required higher level approval.
- b) New & On-going Action Items Assigned by Tech. Council
 1. Update the RAC and TAC Quick Facts numbers for the Chicago meeting - Vaughn
 2. Time to reconstitute Research Advisory Panel (RAP) – Program funding in the amount of \$18k over three years requested from TechC since fall meeting – **MBO 2.5**
 3. Update on past ideas suggested or new ideas for TechC Innovative Ideas List
Past RAC Ideas:
 - i. Idea # 2014-27: On-line research suggestion box for grassroots members – **AI #8 A14**
 - ii. Idea # 2014-28: On-line database covering all ASHRAE RPs since 1960
- c) New Information Items
 1. Update on *Guidance for Bidders on ASHRAE Research Projects* PowerPoint presentation – **MBO 2.3 & AI #1**- Vaughn
 2. Update on **MBO #1.1 & AI #2** (On-going improvements to PES procedures) - Yashar
- d) MBO Status Report – Review with action items

F. BOD EX-OFFICIO & COORDINATING OFFICER REPORTS

Mr. Int-Hout attended the Saturday meeting and highlighted the President Elect Advisory Committee (PEAC) presentation. Mr. Olesen, addressed \$130k project to look at how industry uses ASHRAE guidance. Possibility of RTAR/WS or may pursue without bid. **MBO 2.4**

G. ACTION ITEM TRACKING AND REVIEW OF TW'14 ACTIONS

**Action Items
Research Administration Committee (RAC)
September 16th & October 7th, Teleconference Meetings 2014**

Action #	Responsibility	Summary of Action	Status
1	Staff	Confirm that Research Manual (RM) clearly requires sponsoring TCs to ONLY LIST TC/TG/MTG/SSPCs that have voted formal support for a RTAR or WS	COMPLETE Reference Pages 15, 27, 31 of RM
2	Gatlin / Giesler / Khankari / Sachs / Yang / Other Interested RAC Members	Send updated or additional comments on RTAR 1752 (Guidelines for Avoided Electric Generation/Source Energy Consumption due to Waste Heat Recovery and Heat Pump Technologies) to Steve Hancock and staff so Steve can work closely with TC 6.8 on RTAR revision	COMPLETE

**Carryover Action Items
Research Administration Committee (RAC)
Annual Meeting 2014**

Action #	Responsibility	Summary of Action	Status
1	Bivens / Staff	Develop a PowerPoint presentation targeted to potential ASHRAE research project bidders based overseas to help walk them through the solicitation process - Include members based outside US & Canada on ad hoc team.	Replaced by New AI #18
2	RAS / Yashar	Consider further updates to TRP contractor selection process based on TechC questions and recent experience with TRP-1712 (In addition to recent Section 6 edits to research Manual)	Complete except for new action item #26
3	Khankari / Staff	Update RTAR review form and review process documentation in Research Manual to reflect new review dispositions - "Accepted with comments", etc.	On-going
4	RAS / Staff	Investigate the feasibility of creating a template form for work statements similar to what was done for RTAR form and setting a page limit on work statement submissions	Replaced by New AI #7
5	Huber / Sachs / Bansal / Staff	Develop a more detailed process for handling research proposals that results in an ASHRAE special publication	Replaced by New AI #14
6	Giesler / Gatlin / Yashar	Investigate possibility of a revised GIA program that would provide expense money for a GIA recipient to attend an ASHRAE winter and/or annual meeting in addition to receiving some amount of GIA money for recipients' personal education expenses	Replaced by New AI #2
7	Art Giesler	Unsuccessful bidders on research projects cannot be on the PMS for projects on which they bid. Verify that Research Manual and/or RAC MOP adequately address this issue.	Complete
8	Staff	Investigate the feasibility of establishing an on-line project suggestion box in order to improve connection between ASHRAE research and grassroots membership	Replaced by New AI #19
9	Khankari / Staff	Investigate the feasibility of collecting information on who is downloading for free or buying the final reports for ASHRAE research projects	Replaced by New AI #19
10	Bansal / Sachs / Staff	Investigate options for streamlining, limiting, and improving the URP process	Replaced by New AI #1

Action #1< Bansal, Haves, Sachs, Giesler>: Subcommittee to continue refinement of URP Process and submittal guidelines; possible combination with IRG. Suggested wider review of URPs – more than just RL. Ask all RAC to review or if they know someone qualified in URP technical area for confidential review.

Action #2< Giesler, Gatlin, Yashar>: Changes to GIA program (part of award for expenses for attending ASHRAE winter and/or summer meetings) **MBO 2.1**.

Action #3< Khankari, Haves, Yashar >: Develop separate Work Statement evaluation form for Work Statements that were not submitted as RTARs.

H. PROPOSED & POSSIBLE ROB, MOP, REFERENCE MANUAL, RESEARCH MANUAL OR WEBSITE CHANGES & OTHER ITEMS FOR DISCUSSION

- A. Proposed & Possible ROB, MOP, Reference Manual, Research Manual or Website Changes & Other Items for Discussion – BIVENS Lead (10 minutes – 10 minutes per topic)
- a) Suggested PES/PMS appeal process for interactions with RAC – Bivens (also part of E.c)2). **MBO 1.1**.
 - b) Proposed updates to the RTAR forms & procedures – **AI# 3 A14** – Khankari/Staff
 - c) Fillable PDF template form for work statements similar to new RTAR form – **AI# 4 A14** – RAS Bansal/Staff
 - d) Proposed Tech. Transfer Funding form – **AI# 5 A14** – Huber/Sachs/Bansal/Staff
 - e) Proposed GIA Improvements? – Page limit, institution award limit, review in spring, add GPA justification section to application form, honorarium for Society meeting attendance. – **AI #6 A14 & MBO 2.1** – Giesler/Gatlin/Yashar/Yang/Wang
 - f) How to improve the Efficiency ASHRAE Research Process? – **MBO 1.2** – Khankari
 - g) Proposed website content for ASHRAE co-funding on projects led by others – Vaughn (new)

I. RTAR REVIEW

It is moved and seconded that,

- (2) 1745-RTAR, Evaluation of Climate Reanalysis Data for Use in ASHRAE Applications, sponsored by TC 4.2 - Climatic Information, is conditionally accepted.

MOTION #2 PASSED: 12-0-0, CNV

It is moved and seconded that,

- (3) 1752-RTAR, "Guidelines for Avoided Electric Generation/Source Energy Consumption due to Waste Heat Recovery and Heat Pump Technologies," sponsored by TC 6.8 - Geothermal Heat Pump and Energy Recovery Applications," is rejected.

MOTION #3 PASSED RPS: 5-0-0, CNV

It is moved and seconded that,

- (4) 1754-RTAR, “*Developing the Standard Test Method for Dynamic Characteristics of Vibration Isolators*,” sponsored by TC 2.6 – Sound and Vibration Control, is conditionally accepted.

MOTION #4 PASSED: 12-0-0, CNV

It is moved and seconded that,

- (5) 1756-RTAR, “*Evaluation of Low-Cost Particle and CO₂ Sensors for Indoor Air Quality Monitoring in Smart Building Systems*,” sponsored by TC 2.4 - Particulate Air Contaminants and Particulate Contaminant Removal Equipment, is conditionally accepted.

MOTION #5 PASSED: 12-0-0, CNV

Action #4< Bansal, Khankari>: Explore rules or communication to emphasize RAC will only accept skipping RTAR stage if there is a strong case and RL approves.

Action #5< Khankari, Bansal, Vaughn>: Investigate staged funding connection with milestone completions in Research Projects.

Action #6< Bivens, Giesler >: Explore how cost estimates in RTAR/WS can be improved.

Action #7< Bansal >: Modifications to WS such as development of template and restricting WS length to 10 pages (not including references), single space, font size of 11

J. WORK STATEMENT REVIEW

Eight work statements were submitted by the TCs for review.

It is moved and seconded that,

- (6) 1649-WS, *IAQ and Energy Implications of High Efficiency Filters in Residential Buildings*; sponsored by TC 2.4 - Particulate Air Contaminates and Gas Contaminant Removal Equipment, is conditionally accepted.

MOTION #6 PASSED: 12-0-0, CNV

It is moved and seconded that,

- (7) 1650-WS, *Training Requirements for Sustainable, High Performance Building Operations*; sponsored by TC 7.3 - Operation and Maintenance Management, is conditionally accepted.

MOTION #7 PASSED: 12-0-0, CNV

It is moved and seconded that,

- (8) 1675-WS, *Guidance for CFD Modeling of Data Centers*; sponsored by TC 4.10 - Indoor Environmental Modeling, co-sponsored by TC 9.9 – Mission Critical Facilities, data centers, Technology Spaces and Electronic Equipment, is conditionally accepted.

MOTION #8 PASSED: 12-0-0, CNV

It is moved and seconded that,

- (9) 1710-WS, *Effects of Dynamic Shading Devices on Daylighting and Energy Performance of Perimeter Zones*; sponsored by, TC 4.5 – Fenestration, is conditionally accepted.

MOTION #9 PASSED: 12-0-0, CNV

It is moved and seconded that,

- (10) 1729-WS, *Experimental Verification of Cooling Load Calculations for Radiant Systems*; sponsored by, TC 4.1 – Load Calculation Data and Procedures, is returned.

MOTION #10 PASSED: 12-0-0, CNV

It is moved and seconded that,

- (11) 1742-WS, *Update to Measurements of Office Equipment Heat Gain Data*; sponsored by, TC 4.1 – Load Calculation Data and Procedures, is conditionally accepted.

MOTION #11 PASSED: 12-0-0, CNV

It is moved and seconded that,

- (12) 1749-WS, *A BIM and Physics-based Modeling Enabled Platform for Monitoring and Visualizing High Performance Commercial Buildings*; sponsored by, TC 1.5 – Computer Applications, is rejected.

MOTION #12 PASSED RPS: 4-0-0, CNV

It is moved and seconded that,

- (13) 1755-WS, *Impact of Gaseous Contamination and High Humidity on the Reliable Operation of Information Technology Equipment in Data Centers*; sponsored by, TC 9.9 – Mission critical Facilities, Data Centers, Technology Spaces and Electronic Equipment, co-sponsored by TC 2.3 – Gaseous Air Contaminants and Gas Contaminant Removal Equipment, is conditionally accepted.

MOTION #13 PASSED: 12-0-0, CNV

Action #8<Huber, Shonder, Khankari, Int-hout>: RAC subcommittee formed to investigate additional lessons learned and changes needed relative to RP-1603

Action #9<Sachs, Giesler>: URP-1692 funding decision (investigate reasons for continuing as an URP; potential co-funding option)

Action #10<Khankari >: Improved efficiency of RAC and TCs: schedule Atlanta forum

Action #11<Huber, Bivens, Haves, Yashar>: PMS training module; training session during Atlanta Research Subcommittee breakfast meeting; revisions to PMS section of Research Manual for improved understanding of PMS duties (a check list?)

Action #12<Haves, Davies>: Potential co-funding cyber-security research project with CIBSE. Need to identify TC or TG group for involvement (TC1.5 or TG2)

Action #13<Davies, Wang>: Review co-funding prospects from CIBSE & AHRTI

Action #14<Huber, Sachs/Staff >: Research Manual revisions: more detailed process for research proposals that result in ASHRAE special pubs.

Action #15< Shonder >: Explore if section on research involving human subjects in the Research Manual should be reviewed and/or enhanced. Currently, there is very brief mention. (Related to discussion of 1649-WS).

K. ASHRAE GRADUATE STUDENT GRANT-IN-AID AWARD

A total of 64 applications were considered for the 2015-2016 ASHRAE Graduate Student Grant in-Aid program. Each grant recipient receives \$10,000.

It was moved and seconded that,

- (14) The following 22 students are each a recipient of a Graduate Student Grant-in-Aid grant for the 2015-2016 academic year:

<u>Name</u>	<u>University</u>
Amanda Webb	Pennsylvania State University
Navid Ekrami I	Ryerson University
Jaewan Joe	Purdue University
Laurent Gagne-Boisvert	Ecole Polytechnique de Montreal
Daniel Haaland	University of Toronto
Deepthi Sharan Thatiparti	University of Cincinnati
Amy Van Asselt	University of Wisconsin Madison
Parham Azimi	Illinois institute of Technology
Oluwaseyi Tope Ogunsola	University of Oklahoma
Meng Kong	Syracuse University
Marco Pritoni	University of California
Iason Konstantzos	Purdue University
Torkan Fazli	Illinois institute of Technology
Chunyi Wang	Drexel University
Long Phan	Florida International University
Tian Xia	University of Michigan
Matthew Dahlhausen	University of Maryland
Nelson James	Purdue University
Shanshan Shi	Tsinghua University
Xiang Zhang	University of Maryland
Sheng Wang	Drexel University
Mohamed Rani Abdel-Salam	University of Saskatchewan

Amanda Webb of Pennsylvania State University and Navid Ekrami of Ryerson University hold the added distinction of being named the 2015-2016 Life Member Club grant recipients as the top one and two rated applicants, respectively. These two grants are supported by a financial contribution from the club

MOTION #14 PASSED: 12-0-0, CNV

Action #16< Khankari >: Related to GIA scoring, Khankari asked 2 members to review his normalization process to set procedure and use in future. Additionally, suggested randomized review assignments also.

Action #17< Sachs, Hancock >: Explore formation of an MTG to look into issues presented in 1752-RTAR. Sachs would draft a couple paragraphs defining issue. TC 6.8 would be invited and as would other equipment TCs.

Action #18< Bivens, Vaughn>: Website presentation targeted to potential overseas bidders

Action #19< Staff >: Feasibility of (1) website project suggestion box to improve connection between RAC & members, & (2) collect information on those downloading for free or buying final reports for ASHRAE projects

Action #20< Staff >: Provide history of 1675-WS (on Giesler, Khankari, Yang visiting with TC earlier, as well as Khankari document with markups) to be included in evaluation packages to RAC going forward to give full history.

Action #21< Staff >: Provide stats on how quickly projects get through various steps and to actual RP. To identify where hold ups tend to take place.

L. HOMER ADDAMS AWARD

One nomination was received for the 2015-2016 Homer Addams Award.

It was moved and seconded that,

- (15) Limin Zhou is the recipient of the 2015-2016 Homer Addams Award.

MOTION #15 PASSED: 12-0-0, CNV

M. NEW INVESTIGATOR AWARD

Fourteen nominations were received for the 2015-2016 New Investigator Award.

It was moved and seconded that,

- (16) Dr. Brent Stephens of the Illinois Institute of Technology is the recipient of the 2015-2016 New Investigator Award.

MOTION #16 PASSED: 11-0-1, CNV

N. CARRY-OVER TRPS, FUNDED EXTENSIONS, & GRANT REQUESTS

It is moved and seconded that,

- (17) that a funded extension for active research project **1651-RP**, *Development of Maximum Technically Achievable Energy Targets for Commercial Buildings (Ultra Low Energy Use Building Set)*, be awarded to GARD Analytics for a period of 3 months at a total cost to ASHRAE of \$45,000. (**Attachment #1**)

MOTION PASSED: 11-0-0 CNV

O. RESEARCH SUBCOMMITTEE CHAIR'S BREAKFAST

- a) Proposed Announcements
 1. Service to ASHRAE Research Award recipient this year – Iain Walker – TC 4.3 (Ventilation Requirements and Infiltration)
 2. Submission date for Service to ASHRAE Research Award changed from Sep. 30th to Sep. 1st going forward.
 3. Importance of obtaining full TC votes on approvals of submitted RTARs and WSs for both sponsoring and co-sponsoring TCs
 4. WS based on conditionally approved RTAR must acknowledge how conditions were cleared.
 5. How to improve the Efficiency ASHRAE Research Process? – MBO 1.2
- b) RL Reminders for TCs

P. TENTATIVE RESEARCH PROJECTS TO POTENTIALLY BID SPRING 2015

The following 6 TRPs will be released for bid in spring 2015:

1414-TRP, *Update of U-Factors, Solar Heat Gain Coefficients and Visible Transmittances of Standard Fenestration Units Made from Representative Fenestration Frame and Glazing Systems in the Fenestration Chapter of the Handbook of Fundamentals*; sponsored by TC 4.5 – Fenestration.

1614-TRP, *Developing a Test Method to Determine the Effectiveness of UVC Systems on Commercial Cooking Effluent*; sponsored by 5.10 -Kitchen Ventilation, Co-Sponsor by TC 2.3 -Gaseous Air Contaminants and Gas Contaminant Removal Equipment.

1702-TRP, *Case Studies to Test Performance Measurements Protocols*; sponsored by TC 7.6 -Building Energy Performance.

1740-TRP, *Hydrogen Fluoride Capacity of Desiccants*; sponsored by TC 3.3 (Refrigerant Contaminant Control), Co-sponsor: TC 3.2 -Refrigerant System Chemistry.

1746-TRP, *Validation of RP-1455 Advanced Control Sequences for HVAC Systems – Air Distribution and Terminal Systems*; TC 1.4 -Control Theory and Application.

1747-TRP, *Implementation of RP-1547 CO₂-based Demand Controlled Ventilation for Multiple Zone HVAC Systems in Direct Digital Control Systems*; sponsored by TC 4.3 - (Ventilation Requirements and Infiltration Building Materials and Building Envelope Performance, Co-sponsored by, TC 1.4 - Control Theory and Application.

Action #22< Staff >: All references to HVAC&R research journal needed to be changed to new publication title before going out to bid.

Action #23< Staff >: Send title & quick summary of ALL URPs submitted to ASHRAE upon receipt to full RAC as early notification & information.

Action #24< Staff >: Insert the watermark "EXAMPLE" into the example PES evaluation sheet to make it clear to reader they should enter their own scoring criteria.

Action #25< Staff >: RAC to change rules to explicitly state past GIA winners are not eligible. This should be done immediately so former winners do not reapply when 2015 winners are made public.

Q. CONSULTANTS REPORTS

1. AHRI – Xudong Wang – (**Attachment #2**)
2. CIBSE – Hywel Davies – (**Attachment #3**)

R. MORTS' REPORT

Semi-Annual Report

Highlights from the report were discussed and the full report is included as (**Attachment #4**).

RECESSED – 3 pm Saturday, January 24, 2015

RECONVENED – 7 am Wednesday, January 28, 2015

S. TENTATIVE RESEARCH PROJECTS

It is moved and seconded that,

- (18) **1607-TRP**, *Design and Utilization of Thermal Energy Storage to Increase the Ability of Power Systems to Support Renewable Energy Resources*, be awarded to the University Wisconsin-Madison for a period of 18 months at a total cost to ASHRAE of \$142,461. (**Attachment #5**)

MOTION #18 PASSED: 11-0-0, CNV

It is moved and seconded that,

- (19) **1615-TRP**, *Fault Detection and Diagnostic (FDD) Methods for Supermarkets- Phase I*, be awarded to University of Nebraska-Lincoln for a period of 15 months at a total cost to ASHRAE of \$82,272. (**Attachment #6**)

MOTION #19 PASSED: 11-0-0, CNV

It is moved and seconded that,

- (20) **1663-TRP**, *Residential IAQ Guide*, be awarded to the Schoen Engineering, Inc. for a period of 18 months at a total cost to ASHRAE of \$150,000. (**Attachment #7**)

MOTION #20 PASSED: 11-0-0, CNV

It is moved and seconded that,

- (21) **1717-TRP**, *Improve Accuracy and Reproducibility of ASTM-E681 Test Method for Flammability Limit Measurement of 2L Flammable Refrigerants*, be awarded to the University of Maryland for a period of 18 months at a total cost to ASHRAE of \$194,560. (**Attachment #8**)

MOTION #21 PASSED: 11-0-0, CNV

It is moved and seconded that,

- (22) **1724-RP**, *Study the HVAC System Photodegradation Caused by the Low Level UVC light Irradiance Used for Coil Maintenance and Air Stream Disinfection*, be awarded to University of Dayton Research Institute for a period of 18 months at a total cost to ASHRAE of \$90,000. (**Attachment #9**)

MOTION #22 PASSED: 11-0-0, CNV

T. UNSOLICITED RESEARCH PROPOSALS

It is moved and seconded that,

- (23) **1757-URP**, *Airborne Virus Inactivation, Phase I: Using Fluorescent Bleaching of Aerosols as a Measure of Exposure to Oxidizing Ions and Radicals*, be rejected for funding. (**Attachment #10**)

Note: RAC rejected this topic for funding as an unsolicited research proposal (URP) given the requested funding amount and instead will encourage the proposer to work with the appropriate TCs within ASHRAE to develop the topic for solicitation and then to bid on the project with others.

MOTION #23 PASSED: 11-0-0, CNV

U. RL SECTION REPORTS

RL section reports are included as (**Attachment #11**)

Action #26< Bivens, Yashar, Vaughn >: Develop appeal process for PES/PMS members or others interacting with RAC. **MBO 1.1**

Action #27< RAC EXCOM >: Plan formation of new Research Advisory Panel

Action #28< RAC EXCOM >: With presidential ad hoc committee, develop information on impact & benefits of ASHRAE Stds & Technology

Action #29< Haves, Yang, Khankari>: Develop a more defined process for software up-grade projects; i.e. there should be fast track approach to link this back to the original project. Should it go out to bid or sole sourced to the original software developer? Make recommendations as an Ad Hoc Committee.

V. UNFINISHED BUSINESS

RAC Chair will confer with MORTS and then decide if a follow-up conference call is needed in the spring to discuss TRPs to bid spring 2015?

W. NEW BUSINESS

None

ADJOURNED

The meeting of the Research Administration Committee adjourned at 11:00 AM, Wednesday, January 28, 2015.