

AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-
CONDITIONING ENGINEERS, INC.

1791 Tullie Circle, N.E./Atlanta, GA 30329 404-636-8400

TC/TG/TRG MINUTES COVER SHEET

TC/TG/TRG NO: **TC 7.3**

DATE: **Jun 26, 2016**

LOCATION: **St. Louis, MO**

TC/TG/TRG TITLE: **Operation and Maintenance Management**

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Sonya Pouncy		David Underwood (cm)	1991-	Scott Sepsy (cm)	2007-16
		Shailen Verma (cm)	2012-	George Sestak (cm)	1993-
		Forrest Yount (cm)	2006-	Glenn Hourahan (cm)	2014-
		Robert Zagar (cm)	2001-		
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		Mark Lowry (cm)	2014-	James Newman (cm)	2013-
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		Michael Cooper (Chapter Tech Transfer Chair)	2015-17	Andrew Wengard (cm)	2014-
		Doug Yon (cm)	2014-	Phillip Haves (Research Liaison)	2012-16
		Dr. Bryan Becker (Handbook Liaison)	2015-16	Rick Larson (Standard Liaison)	2013-16
		Cameron Lapunski (ALI/PDC)	2015-16	Michael Vaughn (Staff Liaison)	2001-
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				Syed Subukutheen (pcm)	2015-17
		Davidge Warfield (v)	2015-19		
		Wayne Webster (v)	2012-16		
		Adrienne Thomle (SH)	2012-16		
		John Frugard (cm)	2013-		
		Don Guam (g)			
		Mike Smith (g)			
		Peter Strazdas (g)			
		Yuebin Yu (g)			
		Alexander Zhivor (g)			
		Tom Javins (on-line) (cm)	2015-		

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Call to Order/Scope/Introductions

John Constantinide called the meeting to order at 1:01 PM. The scope of the committee was read. Attendees in the room introduced themselves. An attendance sheet was circulated.

Voting Member Roll Call

Sonya Pouncy took roll call of the voting members. At the time of roll call, EIGHT (8) voting members were present of the FIFTEEN (15). A quorum was established.

Approval of the Agenda

The agenda for the meeting was presented. Motion was made to accept and seconded. Approved by unanimous voice vote 7-0-0-0 (CNV).

Approval of Atlanta Meeting Minutes

The draft meeting minutes from Orlando were reviewed. Minor change to attendee list. Motion to approve the minutes was made and seconded. Approved by unanimous voice vote 7-0-0-0 (CNV).

Sub-Committee Reports

Research Sub-Committee – Chair: Michael Bobker

The following are minutes submitted from the Research Sub-Committee:

1. Attending: see attached sign-in list.
2. There are no Minutes as Research SC Michael Bobker did not attend past two ASHRAE meetings and no Research SC meetings were held.
3. Status Report
 - 2.1 RP 1609** (Defining the Capabilities, Needs and Current Limitations of Building Information Modeling (BIM) in Operations and Maintenance for HVAC&R). Project complete. Disposition of Research Project Results (form) submitted to MORTS. Seminar scheduled for Winter Meeting 2017. Follow-on work proposed by PI Rob Hitchcock, being routed through other TC.
 - 2.2 RP 1650** (Training Requirements for Sustainable High-Performance Building Operation) – has been out to bid. Six bids received. PES has evaluated proposals and will request TC action to approve its recommendation. Bid review and recommendation package is available for closed session executive review by the TC at the 6-28 meeting. PMS will comprised of the four PES members from TC 7.3 (D.Warfield, A.Heckman, J.Frugard, M.Bobker) plus representatives from co-sponsoring TC 7.6 (H.Kim) and 2.8 (TBD), Davidge Warfield to chair. TC ACTION REQUESTED.

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2.3 Co-sponsorship request from TC 7.5 to participate in Work Statement development of approved RTAR 150125 “Methods to Evaluate AFDD Strategies for Air Handling Unit Systems” was made by RTAR author Dr. Jin Wen. Research SC voted unanimously to request TC approval of co-sponsorship *contingent upon review of a final Work Statement that is found acceptable*.
TC ACTION REQUESTED.

RTAR Development: no new RTARs.

4. Discussion of Research Ideas.

- Potential research ideas and RTAR champions were solicited. SC discussed idea of better predictive tools for “variable costs in O&M”. Variable Costs are understood to mean equipment failures that cannot at this time be predicted with any degree of certainty or basis in standardized method. This is a significant budgeting issue/uncertainty for O&M Managers. Robin Ellis and Locke Hutson agreed to attempt to prepare an RTAR on this topic.
- Interest in “comfort conditions” expressed by Sonya Pouncy, pursuant to seminar topic proposed by Mina Agarabi, but inadequate time to discuss this as a potential research topic/RTAR. Research might be around what operators know about comfort conditions, sources of information, and uses in building control.
- Michael Bobker to attend a meeting of TC 7.5 to discuss research agenda for Smart Buildings to explore possible TC collaborations. Others invited to attend if interested.

Motion was made and seconded to approve the sub-committee report. Motion was approved by unanimous voice vote 8-0-0-0 (CNV).

Handbook Sub-Committee – Chair: Sonya Pouncy

The following are minutes submitted from the Handbook Sub-Committee:

1. The new subcommittee chair called meeting to order, welcomed members and guests and invited everyone to introduce her/himself.
2. There was no previous meeting minutes to approve
3. Current chapter status was discussed
4. Additional chapter reviewers were selected
 - a. Design: Hutson (new), Day (new)
 - b. Operations: Danks, Norvell, Trueman
 - c. Trade: Simonsen, Brueckner, Gallagher
 - d. Other: Agarabi, Ellis
5. Checklist and time line were reviewed
6. MS Word version of chapter will provided to reviewers who will submit comments and suggestions for discussion at next meeting (Las Vegas).

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2019 Handbook Revision Schedule

		2015			2016			2017			2018			2019		
		Apr	Jul	Oct	Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct	Jan	Apr	Jul	
Review	Current HB published (June 1)			Jun 1												
	TC selects HB subcom, chair															
	Review current HB for changes															
Revise	Outline revisions															
	Revise chapter(s)															
Approve	Revised chap. to TC for review															
	TC approves chapter															
	Chapter to HB Com liaison															
Edit & Produce	HQ sends proof to TC contact															
	HB sent to printer															
	HB mailed															

Motion was made and seconded to approve the sub-committee report. Motion was approved by unanimous voice vote 8-0-0-0 (CNV).

Education & Training Sub-Committee – Chair: Mina Agarabi

The following are minutes submitted from the Education and Training Sub-Committee:

1. Call to order 6:05pm

2. Roll call

John Constantine, Julia Day, Locke Hutson, Robyn Ellis, Bob Sibilski, Rob Falke, Dawen Lu, Mina Agarabi

3. Approval of the St. Louis Agenda

4. Approval of Orlando Minutes

5. Announcements - None

6. Title Purpose and Scope for 7.3 E&T.

- Group discussed the TPS. No concerns raised. No requests for changes. Julia asked for clarification on the “broad audience” as she is an architect who educates residents and clients on O&M impact on comfort.
- Mina to strengthen connections with IFMA, BOMA, APPA

7. Changes/Updates to FAQ 56 & 57

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Feedback from the subcommittee:

- Need to tighten it up, perhaps have a summary/intro
- John to provide contact from ASHRAE to help with content in FAQs.
- **Have it direct the audience to the handbook chapter**
- **Sonya to help revise #57**
- **Rob suggested to submit more FAQ questions to educate people on O&M**

8. Creation of O&M page on Bookstore. See Controls sample <https://www.ashrae.org/resources--publications/bookstore/building-controls#pubs>

- Wiki or a Blog with ASHRAEExchange need to research- John's suggestion
- Connect with ALI and professional development to see about to start O&M page- John
- ASHRAE joined with IAQ, AFE and see about collaborations

9. New Business

1. Follow up with TC 9.7 educational facilities- Dawen Lu to learn more about collaboration between TCs
2. Education workshops- certification doesn't replace Hands on experience
3. MOUs—look into what touches on education/training

Motion was made and seconded to approve the sub-committee report. Motion was approved by unanimous voice vote 8-0-0-0 (CNV).

Program Sub-Committee – Chair: Robyn Ellis

The following are minutes submitted from the Program Sub-Committee:

1. Call to order –approximately 3:40 p.m.

2. Approval of the St. Louis Agenda –carried

3. Approval of Orlando Minutes –carried

4. St. Louis Program: TC 7.3 sponsored:

A) Sunday 8 a.m. SEMINAR 1: A Better Writer is a Better Engineer - was well-attended, well-received:

Management Perspective on Good Communication, *Track: Professional Skills Beyond Engineering, Room: 224*

Sponsor: 07.03 Operation and Maintenance Management

Chair: Mina Agarabi, P.E., CPMP, Member, Agarabi Engineering PLLC, New York, NY

Successful engineers require many communication skills. This seminar focuses on the value and importance of good writing skills for both experienced engineers and YEA, the requirement as engineers to communicate technical ideas and data to non-technical people, ASHRAE O&M Management perspective on good communication and how to achieve improved communication.

1. Effective Communication Skills for Success as an Engineer

Tom Sahagian, Retired, New York, NY

2. ASHRAE Operations & Maintenance Management Perspective

Mina Agarabi, P.E., CPMP, Member, Agarabi Engineering PLLC, New York, NY

B) Monday 9:45 a.m. SEMINAR 27: Energy Savings via ASHRAE Level III Auditing, Retrofit and Recommissioning: A Case Study at Hameetman Science Center, Occidental College, Part I - was well-attended, well-received:

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Track: Fundamentals and Applications

Room: 222

Sponsor: 07.03 Operation and Maintenance Management

Chair: Robyn Ellis, Associate Member, City of Hamilton - Public Works, Hamilton, ON, Canada

1. Mel Johnson, Associate Director, Los Angeles, CA

2. Rob Falke, Member, National Comfort Institute, Avon Lake, OH

C) Upcoming Wednesday at 9:45 a.m. SEMINAR 57: Energy Savings via ASHRAE Level III Auditing, Retrofit and Recommissioning: A Case Study at Hameetman Science Center, Occidental College, Part II

Track: Fundamentals and Applications, Room: 223

Sponsor: 07.03 Operation and Maintenance Management

Chair: Robyn Ellis, Associate Member, City of Hamilton - Public Works, Hamilton, ON, Canada

1. Rob Falke, Member, National Comfort Institute, Avon Lake, OH

2. Ben Lipscomb, P.E., Associate Member, NCI, Sheffield Lake, OH

5. Announcements -None

6. Upcoming 2017 conferences, tracks and due dates: Last Vegas, CA & Long Beach, CA – Available in handout passed out at the meeting, ASHRAE website:

LV: <http://ashraem.confex.com/ashraem/w17/cfp.cgi>

LB: <http://ashraem.confex.com/ashraem/s17/cfp.cgi>

7. Program Planning and Idea Backlog – Idea Log will be updated from meeting feedback and sent separately and posted to TC site. 7 new/revised ideas were raised for seminars as follows:

- i) **Energy Management & O&M (Chair: John Constantinide)**
- ii) **Co-Sponsor with TC7.6: Energy Nexus (Contact: John Constantinide)**
- iii) **Application of ASHRAE 55 (interactive workshop to gather data) – applying thermal comfort at ASHRAE conferences (Contact: Mina Agarabi)**
- iv) **Building Chiefs' Perspective on Operating High Performance Buildings –e.g. flagship buildings in New York and Charlotte (Contact: Locke Hudson) –target Long Beach (need more lead time)**
- v) **Co-Sponsor with TC7.8: Net Zero Building Operating Costs –corresponding to item on idea log (Contact: Matthew Mullen)**
- vi) **Co-Sponsor with TC 1.5: challenges using tuning data for feedback to energy modeling (Contact: Michael Bobker and Michael Brambley)**
- vii) **Challenges establishing a commissioning benchmark (Contact: Rob Falke)**

8. New Business –N/A

9. Adjourn – Approximately 4:30 p.m.

Motion was made and seconded to approve the sub-committee report. Motion was approved by unanimous voice vote 8-0-0-0 (CNV).

Standards Sub-Committee – Chair: Richard Danks

The following are minutes submitted from the Standards Sub-Committee:

Meeting attendees:

Name	Name
David Handwork	Michael Bobker
Rob Falke	Cedric Trueman
Kris Kinney	Wayne Webster

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Bob Sibliski	Robyn Ellis
Mike Gallagher	Locke Hutson
Thurston Simonsen	Mina Agarabi
Sonya Pouncy	Michael Brambley
Hao Luo Hilton	Richard Danks
John Constantinide	

1. Meeting called to order at approximately 2:15
2. Status update of on-going standards activities
 - a. Guideline 4 - J. Constantinide reported on committee activities including teleconferences. Updates posted to Basecamp. Adding appendices is being considered.
 - b. Guideline 32 – Mike Gallagher reported that a revised draft is close to release for public comment.
 - c. Standard 180 – SPC met Friday June 24. J. Constantinide reported the committee chair decided to have the members develop maintenance plans based on Standard 180 for four types of buildings
 - d. New activity is the APPA Leadership in Educational Facilities - Standard 1000 Total Cost of Ownership. David Handwork, liaison from APPA provided a history of APPA and how the standard evolved from research work.
3. Discussion on status of proposed standard for a method of field testing performance of air handling units lead by J. Constantinide.
 - a. TPS was submitted to Standards. The approval process with Standards subcommittees, PPIS and SPLS, was related.
 - b. Feedback from standards included format changes and revisions to the text. Issues with the terms rating and score were resolved.
 - c. Term of the TPS was increased from one to two (2) years.
 - d. There was extensive discussion on multizone versus single zone units and unit capacity. A motion was made by J. Constantinide, seconded by M. Bobker to revise the TPS to read “to include single zone, constant volume HVAC systems of any capacity.” Motion was approved. A second motion was made to present the revised TPS to the full committee for approval to resubmit the TPS. R. Danks will revise the TPS for presentation and projection at the full committee meeting.
 - e. Other discussion included validating the test method. M. Gallagher advised that the method is currently proprietary and is being adapted to the public sector. This appears to resolve the validation issue.
4. Meeting adjourned at 3:40

Motion was made and seconded to approve the sub-committee report. Motion was approved by unanimous voice vote 8-0-0-0 (CNV).

Liaison Reports

The following are minutes submitted from Liaison Locke (Henry) Hutson:

This was the first meeting of the group and started with introductions

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Annex66 – Annex66 is a group affiliated with the IEA that is focused on how occupant behavior affects building performance. One of their current goals is to see what can be developed to better aid energy modeling to use real-world behavioral examples when modeling building performance. Several members of the MTG are also members of Annex66. There are roughly 150 Annex66 members representing 20 countries.

Handbook – it was discussed whether existing chapters should be evaluated or a new chapter should be added focused on occupant behavior. Tom Lawrence noted that his experience from working on the handbook is that a very strong justification would need to be made for adding additional chapters as the society is reluctant to add. Its requested that each of the liaisons look over their TC's chapter of the handbook and see what opportunities exist to incorporate occupant behavior into their chapter or provide cross references to other chapters with occupant behavior information.

Programs were discussed and attendees were asked to brainstorm on potential programs focused on occupant behavior for the Las Vegas and/or Long Beach Conferences

Research – The group wants to be able to use MTG to co-sponsor research any TC is pushing for related to occupancy.

1. TC 1.5 interested in social media mining to derive input on occupant patterns
2. We could use the MTG to help identify potential sites/buildings to research
3. MTG.BIM is interested in how occupant behavior can potentially be incorporated into the BIM model
4. Annex66 is currently evaluating all different types of occupancy sensors
5. Proposed topic of how thermal comfort and glare affect occupant behavior

Other: -

It was discussed that the MTG should add corresponding members to its roster.

It was suggested that different groups view occupancy in different manners and a white paper or other such document might be useful exploring the topic of occupancy from different viewpoints.

Old Business

Website has been updated. Looking for any ideas to improve it.

New Business

1. Announcement Cindy Moreno is CEC Track 8 Chair. Deadlines for upcoming conference are: papers due July 8th; seminars/ forums due Aug 8th. She can be contacted at 858-481-6176.
2. M. Bobker announced that TC 7.5 has submitted an RTAR that has been accepted by RAC. TC7.5 requests that TC 7.3 cosponsor the RTAR.
 - a. Topic is fault detection, AFD and cutting edge technologies. It is similar to SPC 207P but whereas that is focused on method of test for verifying claims of AFFD for packaged equipment, this one is focused on method of test for AHU's.
 - b. It was recommended that it be entitled Method of Test to See How Well AFDD Systems Actually Perform to more accurately reflect focus.
 - c. M. Bobker will be the TC7.3 liaison to the PMS
3. Research project brought forth by PES:
 - a. Moved to closed session for discussion and vote
 - b. 8 voting members in closed session

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4. Announcement of vote for proposed Standard Test Method to Measure & Score the Operating Performance of Installed Constant Volume Unitary HVAC Systems
 - a. Committee chair identified Robert Falke as recommended chair
 - b. Moved and seconded to accept recommendations with changes.
 - c. Vote is 7-0-0-0 CNV

Next Meeting

The Las Vegas, NV meeting will be January 28, 2017 – Feb 1, 2017. The Committee meeting will be Tuesday, January 31st from 1:00 PM -3:30PM. Sub-committee meetings will be held on Monday afternoon January 30th. (All rooms to be announced.)

Adjournment

A Motion was made was seconded to adjourn the meeting. Approved 8-0-0-0. The chair adjourned the meeting.