

Final Approved- MINUTES June 27, 2017
AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING
ENGINEERS, INC.

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Atlanta, GA 30329
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TC/TG/TRG MINUTES COVER SHEET

(Minutes of all meetings are to be distributed to all persons listed below within 60 days following the meeting.)

TC/TG/TRG No. 6.8 Date 2017

TC/TG/TRG TITLE: Geothermal Heat Pump and Energy Recovery Applications

DATE OF MEETING: June 27, 2017 LOCATION: Long Beach, CA

Full Name	Present	Status	Special Position	Term End	YEA
Dr Chris M Gray	Yes	VM	Chair	06/30/2018	YEA
Mr Scott P Hackel	Yes	VM	Vice Chair	06/30/2020	
Mr Michael P Kuk	No	VM	Sect., Programs Chair	06/30/2019	
Mr John M Filler, Jr, PE	Yes	VM		06/30/2019	
Ms Lisa M. Meline, PE	Yes	VM	Standards Chair	06/30/2018	
Dr Xiaobing Liu	Yes	VM	Research Chair	06/30/2018	
Mr Bruce C Baccei	Yes	VM	Member non quorum	06/30/2020	
Mr Ed P Lohrenz	No	VM	Member non quorum	06/30/2020	
Ms Karen C Thrasher	Yes	VM	Ali Coordinator	06/30/2020	
Mr Warren A Austin, III, PE	Yes	VM		06/30/2018	
Mr Michel Bernier	No	VM		06/30/2018	
Dr William E Murphy, PE PhD	Yes	VM		06/30/2020	
Mr Howard W Newton	No	VM		06/30/2018	
Dr Shaojie Wang, PE	No	VM		06/30/2020	
Mr Stephen A Hamstra, PE	no	VM		06/30/2017	
Dr Stephen P Kavanaugh	no	VM		06/30/2017	
Dr Jeffrey D Spitler	Yes	VM		06/30/2017	
Dr Harrison M Skye, PhD	Yes	CM	HandbookCo-Subc Ch		YEA
Mr Cary Smith	Yes	CM	MTG.ASEC Ch/Membership Subc Ch		
Mr Dennis J. Koop	Yes	CM	WEB MASTER		
Mr Derek Birdsall	Yes	CM			YEA

Full Name	Present	Status	Special Position	Term End	YEA
Prof Ryozo Ooka, PhD	Yes	CM			
Mr Arthur G Sutherland	Yes	CM			
Mr Steven W Carlson	Yes	CM			
Mr Jeremy P Fauber, PE	Yes	CM			
Mr David K Haller	Yes	CM			
Mr Hugh I Henderson, Jr	Yes	CM			
Mr Carl F Huber, PE	Yes	CM			
Dr Piljae Im	Yes	CM			
Mr Keith Swilley	Yes	CM			
Mr Greg Tinkler	Yes	CM			
Mr Mehdi Zeyghami	Yes	CM			
Parham Eslminejad	Yes	Guest			
Luca Pitera	Yes	Guest			
Stephen Wage	Yes	Guest			
Jeremy Smith	Yes	Guest			
Michael Taras	Yes	Guest			
Chris Stone	Yes	Guest			

DISTRIBUTION - ALL MEMBERS OF TC/TG/TRG

TAC Chairman: _____ Walter Grondzik
TAC Section Head: _____ Mark Hegberg
ALI/PDC: _____ Hugh McMillan, III

LIAISONS

RAC Research: _____ Stephen Hancock
Chapter Technology Transfer Committee: _____ Maggie Moninski
Special Publications: _____ Francis Mills
Standards: _____ Cyrus Nasser
Handbook: _____ Patrick Marks

MANAGER OF RESEARCH/TECHNICAL SERVICES: _____ Michael Vaughn
MANAGER OF STANDARDS: _____ Stephanie Reiniche



MINUTES

Pursuant to an announcement sent to all members, ASHRAE Technical Committee TC 6.8, *Geothermal Heat Pump and Energy Recovery Applications*, met on Tuesday, June 27th, 2017 at 3:30 PM in Long Beach. The meeting was held in conjunction with the ASHRAE 2017 Annual Meeting.

I. CALL TO ORDER 3:35, WELCOME, INTRODUCTIONS

- Welcome, Introductions, and Sign-In
- Visitor Welcome: 1st timers and YEA
- 3 YEA members (verify on sign-in)
- Review Voting Members & Determination of Quorum
- 8 voting members present

II. QUORUM CHECK

More than fifty percent of the voting members of the technical committee, present in person, constitute a quorum for the transaction of business. A quorum was available to conduct committee business. One non-quorum member not in attendance.

III. SPECIAL ANNOUNCEMENT

No special announcements

IV. APPROVAL OF MINUTES

The Secretary distributed copies of the minutes of the Winter Meeting in Las Vegas. Thrasher moved, Meline Seconded, Unanimous Vote the Motion carried, and the minutes were approved.

V. ANNOUNCEMENTS FROM ASHRAE

- Section Head - Hegberg
- Liaisons
 - Standards – Cyrus Nasseri
 - Research – Harvey Sachs
 - Already reported to the research subcommittee
 - Anything to report to the full committee 'hell no'
 - Handbook – Dhamshala (S)/Werman (A)
 - TAC – Bilderbeck
 - ALI/PDC – Thrasher
 - Re-branding
 - TC 6.8 should look at self-directed learning courses (SDLC)
 - Looking to break courses up into smaller pieces
 - Cx and O&M are hot topics
 - Interested in program ideas
 - Codes: Steve Ferguson
 - Wants us to be aware of ASHRAE assistance that exists to interface with codes
 - Wants us to interact with other standards, like 90.1, establish formal liaisons, etc.
 - Chris is interested in 90.1 mech subcommittee interaction with Ch 9
 - Consider international interaction (ISO)
 - Cary is going to work on coordination with ICC to make it more consistent with ASHRAE and other standards



VI. ANNOUNCEMENTS FROM THE CHAIR

- Topics from Chair's Breakfast
 - If Chris receives 2 email returns he'll delete from list
 - We can approve technical bulletins (white paper) and post
 - Members should consider presenting about TC at their local chapter
 - RAC has decided to prioritize residential research
 - Need reviewers for technical papers
- Recognitions

VII. SUBCOMMITTEE REPORTS

- KTM Award – Lisa Meline
 - The award was given to Mehdi Zeyghami
 - This award goes to those who emulate the same characteristics that Kirk Mescher did
- Handbook -
 - Geothermal – Harrison Skye
 - Chapter is moving along. Would like to have revisions by August. TC review after that. Hope for a vote in January in Chicago.
 - Reviewed the major elements that have been changed and added
 - Needs reviewers for some sections
 - Jeff will review the standing column well section. Cary: John Reiner is also an expert who might help.
 - Lisa will review cost data
 - There is interest from TC7.8 in geo operating and maintenance costs; Chris will send out a note to members
 - Ted Reinhart email on term 'geothermal'. We will crisp up our terminology, but not make the major division that he suggests. Chris and Harrison will make a reply to Ted.
 - Report Heat Recovery – Mike Filler
 - Mike has gotten volunteers to help with reviewing the current chapter. He will try to set up a conference call to take next steps.
- Standards – Lisa Meline
 - IAPMO: Cary and Lisa have been engaged in the task group and submitted a review report.
Lisa moves that ASHRAE support these as formal comments from ASHRAE, Kay seconds
 - A few comments discussed around static pressure, testing, and scope of the standard
 - Assume these comments are addressed
 - **Motion revised to include clarification on static pressure and testing, seconded by Kay**
 - **Unanimous vote**
- Programs - Michael Kuk : **Long Beach, Chicago, Houston**
 - Michel may carry forward his BTES submittal, others mothballed. Not sure which meeting Michel will submit to.
 - Chicago programs; 3 seminars in the works
 - Equipment testing standards (Gary; putting out to all ASHRAE)
 - Advanced TC testing methods (Cary)
 - Solar thermal, geothermal, and active chilled beams (Cary)
 - Houston
 - District GSHP systems; 1-2 seminars (Gary)
 - Kay has a system in Florida that she could provide info on
 - Cary has some examples he'd like to present
 - We should consider conference paper submissions for future meetings because the chances of success are higher



- Research - Xiaobing Liu : **Work statements and RTARs**
 - Updates from research breakfast
 - Forms have changed for submittal
 - RAC is looking for nominations for research awards
 - PMS needs to watch and react to milestones
 - Tech transfer topics are eligible for research dollars (blue book is an example)
 - RP 1385 was completed
 - WS 1817 – long term temperature change is underway
 - Co-sponsor with TC 7.5: WS 1812 – leak detection in hydronic systems
 - Concern of cost effectiveness of this
 - No interest in helping with the work statement
 - **Xiaobing moves that we co-sponsor WS, Bill seconded**
 - Is leakage an issue?
 - Doesn't look like we have support
 - **Fails 0-6, chair not vote**
 - WS 1804 – avoided source energy
 - RAC did not approve
 - MTG has decided to withdraw the topic
 - New research projects
 - Investigate impact of heterogeneity on TC tests (timespan, etc.)
 - Develop software tool to model multi-building interaction / heat recovery
 - Bill: Let's approach the district heating/cooling TC
 - Evaluate the performance of new/advanced GHX designs (previous idea)
 - Looking for vendor help to develop an RTAR
- Membership - Cary Smith: **Roll-on / Roll-off Members**
 - Rolling on: Harrison, Cary
 - Rolling off: Steve Kavanaugh, Stephen Hamstra
- Education and Special Publications/Journal - Vacant:
- Webmaster - Dennis Koop: **Website Status and Needs**
 - Needs: ASHRAE has a new technology portal; Dennis will add a link

ASHRAE Society website is being completely redrafted; go live January 2018

VIII. LIAISON REPORTS

- IGSHPA – Cary Smith
 - Developing more training: pumping, heat recovery with BTES, multiple pipe(?)
 - The CSA standard has been approved as an ANSI Standard
- IAPMO – Cary Smith
 - See Lisa's statements on this in the Standards report
- NGWA – Cary Smith
 - They have a drilling group putting together best practices documentation
- MTG-ASEC – Cary Smith
 - See the comments in Xiaobing's research report above
- GEO – Keith Swilley
 - Still possibility of tax credits being extended; currently 100 co-sponsors
 - Work to be done

IX. OLD BUSINESS

X. NEW BUSINESS

- Bruce Bacci: retiring



- Hugh Henderson: NYSERDA has just come out with a big rebate for geothermal heat pumps
- Cary: MA has just done the same thing

XI. ADJOURN 5:25 PM

A. MOTION to adjourn the meeting. Meline moved, unanimous vote approved

New Member Presentation: Art Sutherland: Integrating Refrigeration Systems with Geothermal Systems

Committee Assignments (2017)

Programs:

M. Kuk (chair)

L. Meline

C. Smith

K. Thrasher

F. Pucciano

J. Spitler

Handbook Ch. 9: Heat Recovery

M. Filler (chair)

C. Paraskevagos

E. Lohrenz

F. Pucciano

G. Phetteplace

C. Haynes

Research

X. Liu (chair)

G. Phetteplace

D. Dinse

S. Hackel

B. Koschka

C. Remund

Stephen Hamstra

Mike Filler

Handbook Ch. 34: Geothermal

H. Skye (Chair)

J. Fauber

M. Bernier

A. Chiasson

M. Green

M. Kuk

X. Liu

C. Smith

Membership

Smith (chair)

Harrison (rolling on)

Kavanaugh (rolling off)

Hamstra (rolling off)

Awards: Lisa Meline (Chair)