

FINAL MINUTES January 21, 2014

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

1791 Tullie Circle NE
Atlanta, GA 30329
404-636-8400

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 2014

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

DATE OF MEETING: January 21, 2014 LOCATION: New York, NY: NY Hilton Midtown

Members Present	Year APPTD	MEMBERS ABSENT	Year APPTD	EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE
(Donald) Cary Smith (Chair)	12-16	Ed Lohrenz (MNQ-V)	11-15	Lisa Meline (Standards)
Chris Gray (VC,S,WM,H-9)	13-17	Charles Remund	12-16	John Shonder (Research)
Steve Kavanaugh	13-17	JB Singh	10-14	Carl Huber (CM)
Gary Phetteplace	12-16			Michel Bernier (CM)
Michael Kuk (Programs)	12-14	(2 Voting, 1 Voting-NQ)		Signhild Gehlin (CM)
Roxanne Scott (Education)	11-15			Xiaobing Liu (CM)
Dave Dinse (MNQ-V)	12-16			Howard Newton (CM)
David Pleasants (ALI)	10-14			Piljae Im (CM)
Jeremy Fauber	12-16			Bill Murphy (CM)
Scott Hackel (Hndbk-34)	11-15			Steve Carlson (CM)
Stephen Hamstra	13-17			Keith Swilley (CM)
Robert Koschka	10-14			Mike Filler (CM)
Jeff Spitler	12-16			Chris Paraskevacos (CM)
Kay Thrasher	10-14			Shaojie Wang (CM)
(13 Voting; 1 Voting-NQ)				(14)
				<u>GUESTS</u>
				Drew Frye
				Don Bivens (RAC)
				Bahman Habibzadeh
				Martin Orio
				Chuck High
				Rupert Alfilaz
				Yogesh Magar
				Rachel Spitler
				Trey Austin
				Bruce Baccei
				Jay Madden
				Marijo Todorovic
				(12)

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: _____ Maggi 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, 21 January 2014 at 3:30 PM in the Gramercy West meeting room of the New York Hilton Midtown, New York, NY. The meeting was held in conjunction with the ASHRAE 2014 Winter Meeting.

I. CALL TO ORDER, WELCOME, INTRODUCTIONS

Chair Cary Smith called the meeting to order at 3:30 PM. The Chair welcomed everyone. Members, guests, and ASHRAE Committee liaisons were requested that they introduce themselves. The Chair requested that the sign-in sheet be filled out completely, and that attendees check their information on the roster sheet and make any changes through ASHRAE's website.

II. QUORUM CHECK

Fifty percent of the voting members of the technical committee, present in person, constitute a quorum for the transaction of business. The Chairman read the list of voting members to confirm that the roster was correct. The roll call revealed that ten (10) of fourteen (14) Quorum members of the technical committee were present and one (1) member voting, Non-Quorum present, establishing that a quorum was available to conduct committee business. Two (2) voting members arrived to the meeting after the determination of quorum.

III. APPROVAL OF MINUTES

The Secretary distributed copies of the minutes of the June 25, 2013 Annual meeting in Denver, CO, and the Chair requested that members review them.

MOTION: Stephen Hamstra moved that the Minutes of the TC 6.08 meeting in June 2013 be accepted as presented, and the motion was seconded by Jeremy Fauber. The Motion carried and the minutes were approved (10-0-0-CNV).

IV. ANNOUNCEMENTS FROM ASHRAE

None were presented

V. ANNOUNCEMENTS FROM THE CHAIR

- A.** Cary Smith recognized committee member Dr. Jeff Spitler, P.E. for his winning of the E.K. Campbell Award of Merit, an award presented by the Life Members' Club for outstanding service and achievement in teaching.
- B.** Cary Smith reported on the Chairs' breakfast.
 - 1. The ASHRAE Code of Ethics was read and chair requested that all attendees familiarize themselves with the Code as available on the ASHRAE website.
 - 2. An "Employment Discipline" field has been added to the Member Bio area, chair encouraged all members to update their Bio. ASHRAE will use this information to ensure balance on committees; 25% of members have currently completed the field.
 - 3. The new Provisional Corresponding Member (PCM) position was reviewed. A PCM can be added by Staff for a 2-year term and must be approved by Chair to become a CM.
 - 4. Members were encouraged to volunteer with CEC to review technical papers



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5. Chair reviewed the possibility of TCs to host web meetings at Annual and Winter conferences as a way to increase participation and eliminate quorum issues.
6. The newly developed Outstanding TC Award was reviewed. One award will be awarded by TAC in each Section.
7. Reviewed the new layout of new Workshop sessions during the technical program and requested input on potential Workshop sessions the TC could host. Will be 1hr interactive sessions.
8. Chair reviewed the availability of a new Google calendar which will serve as the TC Master Calendar. Listed under (techservices1791@google.com)
9. A new MTG was formed – MTG.HCDG: Hot Climate Design Guide Development.

VI. ACTIVITY (EXTRAORDINARY)
No Activity

VII. SUBCOMMITTEE REPORTS

A. RESEARCH – John Shonder

1. Due to John’s new involvement in TAC, he will no longer be able to serve as the committee’s Research Chair; therefore, Xiaobing Liu will be taking over.
2. Two Active projects:
 - a. RP-1385 Surface Water Heat Pumps: Final report submitted to PMS for review
 - b. RP-1674 Blue Book Revision: Submitted for Review to PMS
3. WS-1498 Optimized Design of Outdoor Air for GSHP: Dropped
4. RTAR 1680 Environmental Effects: was sent back by RAC, revised by John Shonder, will be reviewed by Lisa Meline and resubmitted.
5. Xiaobing Liu brought up a discussion of a possible RTAR related to characterizing and quantifying the renewable energy portion of GSHPs; no direct action at this point.

B. HANDBOOK COMMITTEES – Scott Hackel/Chris Gray

1. A-34 – Scott Hackel – The subcommittee met on Sunday, January 19th.
 - A. Discuss Chapter 34 revisions:**
 1. A comment was raised regarding mentioning strainers in the open loop surface water section. It was pointed out that this was already in the handbook.
 2. A comment was raised regarding the mention of 15% PG solutions in loops. The subcommittee agreed to add a qualifier there.
 3. Some discussion was had regarding the examples for vertical loop sizing between sizing Method 1 and Method 2. The examples currently use different inputs. We agreed that this was acceptable for now.
 - B. Vote on Chapter 34 revisions.**
 1. The subcommittee voted in favor of passing on this version of the chapter revisions on to the TC for a vote. (vote was 7 in favor, 0 opposed)
 - C. Discuss renewability of geothermal.**
 1. A lengthy discussion was then introduced regarding whether a clause should be added to the chapter discussing how geothermal is at least partially renewable. In the end the topic was tabled for a higher level discussion at the full TC meeting.



D. MOTION (by Hackel, 2nd Hamstra): Hackel moved that the TC accept the proposed changes to the chapter as submitted by the subcommittee via email on January 2nd with the minor changes of the cautionary changes regarding ethylene concentration below 20%. The motion carried (10-0-0-CNV)

2. S-09 – Chris Gray – The subcommittee met on Saturday, January 18th to review a developed outline of revisions to the chapter for the 2016 version. Authorship responsibilities were distributed to subcommittee members. It is anticipated that the final committee vote on the additions can be made at the Chicago 2015 Winter meeting: any edits required after this meeting will have to be absolutely complete by submission of the chapter on March 28th, 2015.

C. MEMBERSHIP COMMITTEE – Gary Phetteplace

1. Gary reviewed emergency roster changes resulting from the resignation of Chair Jeff Smith due to work obligations: this resulted in the change of Cary Smith to Chair, Chris Gray to VC, and Scott Hackel will take over as Secretary after June.
2. Changes in voting members after June were announced.
 - a) Kuk, Koschka, Singh, Pleasants, Thrasher roll OFF
 - b) Meline, Gray, Benier, Lie, Newton roll ON
3. 114 TC Members: members made aware of potential to expansion of voting membership due to large roster; members will be kept up aware of any changes.

D. PROGRAMS COMMITTEE – Michael Kuk

1. TC 6.8 hosted Seminar 58: Using System COP/EER to Reasonably Model GSHP System Performance. The Seminar was chaired by Cary Smith. The Presenters were Steve Kavanaugh, Scott Hackel, and Keith Swilley.
2. TC Member Kirk Mescher taught a half-day short course on Commercial GSHP design.
3. Michael discussed ASHRAE's Seattle and Chicago program tracks. The following dates are important regarding program and technical paper submittals for the Seattle conference:
 - a) Feb. 13th – Seminar, Forum, Technical Paper and Conference Paper program proposals due.
 - b) Feb. 21st – Conference Paper Accept/Reject Notifications
 - c) September 20-Seminar and Forum Accept/Reject are distributed
 - d) Feb. 25th – Technical Paper Final Review
 - e) March 25th – Seminar Accept/Reject Notification
 - f) May 6th – Upload PPTs Begins
 - g) June 2nd All PPTs Due
 - h) June 28th – Speaker's Lounge Opens
4. Seattle Meeting (June 28-July 2, 2014) Tracks:
 - Track 1: Environmental Health/IEQ
 - Track 2: Research Summit
 - Track 3: **Ground Source Heat Pumps: State of the Art Design, Performance, and Research**
 - Track 4: HVAC&R Systems and Equipment
 - Track 5: HVAC&R Fundamentals and Applications
 - Track 6: Standards, Guidelines, and Codes
 - Track 7: Refrigeration
 - Track 8: Installation, Commissioning, Operation, Maintenance of Existing Buildings



Track 9: Professional Skills

E. WEBMASTER – Chris Gray

The webpage was up to date in preparation for the 2014 Winter meeting including updated draft minutes from the 2013 Annual meeting in Denver, the meeting times and locations, and the full committee meeting agenda.

F. STANDARDS – Lisa Meline

A previous vote by TC 6.8 gave Lisa Meline permission to prepare and submit a proposal to ASHRAE for the Development of a Standard for Borehole Construction. Since CSA C448 is already working to upgrade their standard, ASHRAE agreed that it was best to collaborate on a North American Standard, focusing on the Annexes specifically, to coordinate the ground heat exchanger portion of the Standard. ASHRAE already has standards for energy efficiency, etc. The proposed stakeholder committee for the previously proposed standard to ASHRAE (which did not move forward) is: Lisa Meline, Kirk Mescher, Cary Smith and Bob Brown. There are also three representatives from NGWA and Allan Skouby, Co-Chair of the IGSHPA Standards Committee.

CSA C448 currently has a representative from NGWA, a representative from ASHRAE (Lisa Meline) and a representative from GEO (Bob Brown). Kirk Mescher has agreed to serve as Vice-Chair of the CSA C448 Committee. It is requested that Cary Smith and others interested in this project continue to serve on the TC6.8 Standards Subcommittee to provide input and feedback to the standard development through Lisa Meline.

G. EDUCATION and SPECIAL PUBLICATIONS/JOURNAL – Roxanne Scott

No Report

VIII. LIAISON REPORTS

A. ALI COORDINATOR – David Pleasants

TC Member Kirk Mescher delivered an ASHRAE Short Course for ALI on Commercial GSHP Design with approximately 50 people in attendance.

B. IGSHPA – Lisa Meline

Jim Bose has retired and the new Director is Bob Ingersoll. At the IGSHPA annual meeting in Las Vegas, Allan Skouby and Lisa Meline, Co-Chairs of the IGSHPA Standards, created a list of topics with the Standards Committee that require review, upgrade or development. The three areas currently being worked on in subcommittee are: pressure testing, anti-freeze, and water quality. The work product developed will be shared with the CSA C448 work mentioned previously to support the development of a single Standard for reference and use by all organizations (ASHRAE, IGSHPA, CSA, NGWA, GEO and States). If the group is successful, there will no longer be need for an IGSHPA Standard. Although the IGSHPA Standard is the current industry standard, it does not follow the ANSI process. The CSA C448 Standard will be developed according to ANSI.

C. CEC – Jeff Spittler

1. Jeff gave an update on the progress of the tracks for the Seattle technical track
2. Reiterated the need to submit sessions completely and on time



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3. Mentioned that the conference DVD would be a good introduction to an engineer new to GSHPs
- D. RAC – John Shonder:** Dr. Spitler’s final draft report was submitted to the TC for approval. The TC must review the draft and submit a final vote.
- E. TC 6.7**
 1. Update on solar HVAC in Europe
 2. Discussion of potential cosponsoring of seminars related to solar incorporate GSHPs
- F. PMS 1674 - Bill Murphy**
 1. Bill discussed the technical transfer requirement of all research projects and the unique method which will be used for this project: instead of a conference paper, the “blue book” will be presented in a seminar in Seattle.
 2. **MOTION (by Spitler, 2nd Kuk): Moved that the TC support the recommendation of the PMS that the contractor for RP 1674 replace the technical paper associated with the technical transfer of the project with a technical seminar. The motion carried (8-0-2-CNV).**
- G. YEA – Chris Gray**
 1. Chris discussed the desire of TAC to involve more YEA members with TCs to ensure the long-term success of TCs and technical portions of ASHRAE
 2. Chris represented the TC at the YEA/TAC mixer held on Sunday, January 19th to increase the communication among TCs and prospective YEA/TC members.
- IX. OLD BUSINESS**
 - A.** Report – Borehole Standard Committee (see above).
 - B.** Appeal for Transparent Unitary Equipment Ratings: Struck by Kavanaugh
 - C.** National Certification Standard for GSHP Professionals
 - 1) Xiaobing Liu gave an update on the drafted standard put together by the subcommittee
 - 2) Drafted proposed standard is complete and was submitted to DOE by John Kelly with GEO
- X. NEW BUSINESS**
 - A.** Discussion of GSHPs as Renewable Energy: Kirk Mescher
 1. The case was presented by Kirk Mescher that GSHPs could be viewed as Renewable since the recycled energy from the cooling heat rejection is stored in the ground and recovered from the ground in heating operation via an amplifying heat pump process.
 2. **MOTION (By Kavanaugh, 2nd Hackel): It was moved that the TC 6.8 Handbook Subcommittee for the GSHP chapter investigate how to include a statement about GSHPs and their potential renewable energy applicability and include the findings in the handbook. The motion carried (11-0-1-CV).**
 - B.** Recognition of Steve Hamstra: The chair once again recognized Steve Hamstra since Steve joined the group late.



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XI. ADJOURN

- 1. MOTION (by Spitler, 2nd Phetteplace): To adjourn the TC 6.8 meeting at 5:16PM. Motion carried (11-0-1-CNV).**

Eight pages of attachments follow:

1. Committee Assignments as of January 21, 2014
2. Programs Subcommittee Report
3. Handbook Subcommittee Report
4. ASHRAE Meeting Report



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Committee Assignments (2013-2014)

Programs: (Kuk)

L. Meline
C. Smith
D. Pleasants
B. Koschka
K. Thrasher
S. Hackel

Research (Shonder)

G. Phetteplace
D. Dinse
S. Hackel
B. Koschka
C. Remund
X. Liu

Handbook - 9: (Gray)

X. Liu
J. Smith
D. Pleasants
E. Lohrenz
M. Filler
F. Pucciano
G. Phetteplace
C. Smith
C. Paraskevakos

Handbook 34 (Hackel)

M. Kuk
J. Fauber
M. Bernier
A. Chiasson
M. Green
X. Liu
L. Meline
K. Rafferty
K. Mescher
C. Smith



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TC 6.8 PROGRAMS MEETING AGENDA

TC 6.8 Geothermal Heat Pump and Energy Recovery

NYC, NY

**Programs Subcommittee: Sunday 6:20-7pm:
Hilton Rendezvous Ballroom 3rd Floor**

Note: The following meetings other subcommittee meetings are before our meeting, so please feel free to arrive earlier and listen in on them if you are so inclined...

- Chapter 34 Geothermal Heat Pumps Subcommittee: Sunday, 5-5:40pm: Hilton Rendezvous Ballroom 3rd Floor
- Research Subcommittee: Sunday, 5:40-6:20pm: Hilton Rendezvous Ballroom 3rd Floor

Programs Committee

Michael Kuk (Chair)	mkuk@cerxsolutions.com	630-631-9483 (cell)
Cary Smith	dcsmith@soundgroup.com	801-942-6100
Lisa Meline	lisa@meline.com	916-366-3458
Kay Thrasher	kay@townsend-engineering.com	423-855-1184
Robert Koscka	rkoschka@aol.com	317-283-6766
Frank Pucciano	Frank.pucciano@satbot6.net	404-216-5191
Jeff Spitler	spitler@okstate.edu	405-744-5900

1) TC 6.08 Programs being presented this meeting

- Seminar 58: Using System EER/COP to Reasonably Model GSHP System Performance

Wednesday, January 22nd, 2014; 11am-12:30pm;
Trianon Room

2) Next Meeting Location(s)

Annual: 2014 Summer Conference
June 28-July 2, 2014
Seattle, Washington
<https://www.ashrae.org/membership--conferences/conferences/2014-ashrae-annual-conference>

Call for Papers:

<http://ashraem.confex.com/ashraem/s14/cfp.cgi>

3) Meeting Tracks:

New York Tracks

- Track 1: Systems and Equipment
- Track 2: Fundamentals and Applications
- Track 3: Indoor Environmental Health / IEQ
- Track 4: Building Information Systems Integrating Technology for control, Management Optimization and Efficiency
- Track 5: International Design
- Track 6: Building Performance and Commissioning for Operation and Management
- Track 7: Hydronic System Design for Large Buildings
- Track 8: Tall Buildings: Performance Meets Policy

Seattle Tracks

- Track 1: Indoor Environment – Health, Comfort and Productivity
- Track 2: Research Summit
- Track 3: Ground Source Heat Pumps: State of the Art Design, Performance and Research
- Track 4: HVAC&R Systems & Equipment
- Track 5: HVAC&R Fundamentals and Applications
- Track 6: Standards, Guidelines and Codes
- Track 7: Refrigeration
- Track 8: Installation, Commissioning, Operation, Maintenance of Existing Buildings
- Track 9: Professional Skills

Chicago Tracks

- Track 1: Systems and Equipment
- Track 2: Fundamentals and Applications
- Track 3: Industrial Facilities
- Track 4: Large Buildings: Mission Critical Facilities and Applications
- Track 5: Energy Efficiency
- Track 6: Life Safety
- Track 7: Design of Energy and Water efficient Systems
- Track 8: Hospital Design and Codes

4) Key Program Dates

This is (was) the overall publication schedule for the ASHRAE 2014 Annual Conference, Seattle. For specific details and questions regarding these dates, please contact the appropriate Track Chair.



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Sept. 23, 2013	Conference Paper abstracts due
Sept. 23, 2013	Technical Papers due
Oct. 7, 2013	Conference Abstract accept/reject notifications
Jan. 6, 2014	Web Site Opens for Seminar and Forum Proposals
Jan. 9, 2014	Final Conference Papers Submitted for Review (Includes Bio, Learning Objectives and Methods of Assessment)
Feb. 13	Seminar and Forum Program Proposals Due
Feb. 21	Conference Paper accept/reject notifications
Feb. 25	Technical Papers Final Review
March 25	Notifications of Seminar and Forum Accept/Reject Distributed
May 6	Upload of PPTs Begin
June 2	All PPTs Due Online
June 28	Speaker's Lounge Opens

CHICAGO WINTER MEETING January 24-28

<u>June 1:</u>	<u>Web Site Opens for Seminar and Forum Proposals</u>
<u>July 9:</u>	<u>Final Conference Papers Submitted for Review</u>
<u>Aug. 13:</u>	<u>Seminar and Forum Program Proposals Due</u>
<u>Sept. 14:</u>	<u>Conference Papers Accept/Reject Notifications and Notifications of Seminar and Forum Accept/Reject Distributed</u>
<u>Dec. 7:</u>	<u>Upload of PPTs Begin</u>
<u>January 7, 2015:</u>	<u>All PPTs Due Online</u>
<u>Jan. 26:</u>	<u>Speaker's Lounge Opens</u>

Papers and Programs

Call for Chairs, Presenters, Authors (Reduced conference registration of \$95)

Programs

Seminars (2-3 presenters in Power Point Format)

Forums (Moderator or Panel led discussion)

Technical Papers

Technical papers are presented by authors at ASHRAE Winter and Annual conference and then published in ASHRAE Transactions. Technical papers can be up to 30 pages.

Conference Papers

Conference papers are shorter than technical papers, undergo a less stringent review and can be prepared closer to the conferences. Conference papers can be a maximum of 8 pages

- 5) Sub-committee reviewed status of conference papers. (See annex)
- 6) Conference paper Chair volunteers
 1. Mike Filler
 - a. 2. Steve Hamstra
 - b. 3. Bill Murphy
 - c. 4. David Pleasants
 - d. 5. Michel Bernier (if you need more people, he is already putting together a seminar)
- 7) SEATTLE TRACK
 - a. Activities Since last meeting
 - i. Seminar Chairs have been putting together speaker topics
 - ii. Conference papers submitted and in process of being reviewed
 - b. Next Steps / Actions
 - i. Work on closing up speakers and uploading Seminar and form proposals by February 13.
 - ii. Manage conference paper reviews (by Jan 30)
 - iii. "racking and stacking" of seminars and conference papers



ANNEX 1: SEATTLE TRACK PLANS and STATUS

- **Track 3: Ground Source Heat Pumps: State of the Art Design, Performance and Research**

Track Chair: Jeffrey Spitzer / Michael Kuk / Carol E. Marriott

Email: spitzer@okstate.edu / Michael.p.kuk@gmail.com

Ground-source heat pump (GSHP) systems are known to be one of the most energy-efficient, cost effective, and environmentally benign HVAC options available. This has been proven over and over again through energy efficient buildings which are the highest performers in EnergyStar and LEED performance ratings. However this performance only comes with proper design and application of the technology. This track will take the engineer through aspects of site development, design, construction, commissioning and system turn-over that lead to optimally performing systems and satisfied building owners. It will also help the engineer avoid common pitfalls that lead to poorly performing systems. Research into innovative systems, heat exchanger performance, design and simulation methods, and optimal operation will also be covered. Papers/presentations are invited for all types of GSHP systems– including closed loop, open loop, vertical, horizontal, standing column wells, thermal piles, and surface water heat pump systems.

Seattle GSHP Track
Proposed List of Programs and associated Chairs

1. Overview (Could include a historical perspective and current status + moderator could introduce the track; possible speakers Steve Smith, Gary Phetteplace, maybe someone from Sweden, Doug Dougherty, Jim Bose – how did it get restarted in the 1970s?; establishing single point responsibility)

Chair 1: Gary Phetteplace

The Road Well Traveled – Steve Smith (EnerTech) (Has agreed to speak)
The Current State of the Industry – Doug Daugherty (GEO) (Agreed, can come on Sunday)
Overview of track (Gary will discuss)

Current Status: Speakers agreed. Will upload abstracts and bios.

2. Site development (site assessment/permitting, why are some states more strict than others?, summary of state-by-state requirements, what has gone wrong in the past, thermal property characterization, drilling conditions, vertical/direction drilling, horizontal, groundwater, system selection – closed loop, open loop, SWHP; possible speakers: NGWA, Prof. from Cal. State Fullerton)

Chair 2: Lisa Meline

Site Assessment John Reimer (sponsored by NGWA)
Drilling 101 – Dominique Durbin (NGWA/IGSHPA)
Trey Austin?

Current Status: Lisa Meline took over for Harvey. Has speakers, will upload abstracts and bios.



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3. Design: **Outside** the building (start with 12-step; innovative ground heat exchangers; vertical borehole design procedures; horizontal design procedures; water treatment plants, sewer water plants; SWHP; thermal piles; possibly divide this into two sessions: conventional vertical borehole systems and alternatives.)

Chair 3-1: Chris Gray

Open Loop Design – Kevin Rafferty

Surface Water – Jeff Spitler

Design effects on installation- Russell Buras-Loop Tech

Current Status: Chris has uploaded his documentation to Comfex

4. Design: **Inside** the building (system configuration: central vs. distributed heat pumps, hybrid vs. non-hybrid, water-to-air vs water-to-water, EER vs. SEER, heat pump ratings, pumping and piping strategies: one pipe, primary-secondary pumps; building modeling; loop modeling; how many LEED points can you get?)

Chair 4-1: Dave Dinse

BLUE BOOK OVERVIEW

Dr. Steve Kavanaugh

Kevin Rafferty

Current Status: Dave is actively working on. Has created an abstract and is uploading documentation.

Chair 4-2: Michel Bernier

Central Stations

Current Status: Has lined up some speakers, putting together abstract and bio

5. Construction and construction documents (IGSHPA standards, guidelines in the ASHRAE Handbook, flushing and purging, pressure testing, missing items from typical specs: trenching, backfilling, antifreeze requirements, coordination of flushing, tracer wire, metallic tape, points of responsibility, construction coordination)

Chair 5 – Ed Lorenz

Construction documents and coordination documents: Terry Proffer: Major Geo- Denver

Trey Austin (topic ?)

IGSHPA Design and Installation Guidelines - Ryan Carda ? (IGSHPA)

Current Status: Have rec'd confirmation that I'll be getting an abstract from Terry Proffer and Trey Austin for my session. Also talked to Ryan Carda...he thinks he will be available. Also have another possible speaker, but not confirmed.

6. Commissioning and Project Closeouts (commissioning, design phase, construction phase, close-out, ASHRAE book, case studies of things gone bad, stuff not to do: Kirk, Lisa, Mike have examples)

Chair 6– Cary Smith

What not to do – Lisa Meline

Commissioning/Close-out Tips for GHPs – Mike Kuk

Current Status: Actively working on.



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7. Operation and Maintenance (Case Studies) (Potential Co-sponsor with TC 7.3 O&M, if O&M focus)

- Don Penn, Image Engineering Group (Success Stories at K-12 Geo Schools)
- Greg Tinkler: CDG-Redding, Linden, Burr Engineers (Metering results of a fast food Chain Restaurant with Geo HVAC)
- Chuck Hammock-Andrews Hammock and Powell Consulting, "The next generation of GHP Systems "Borehole and Aquifer Thermal Energy Storage with GHP to reduce installation and Energy Costs

(To include optimal control for HGSH, optimizing the operation, maintenance needs, future retrofits? Sequence of operations? Training. Any historical data – Oklahoma state capitol; ORNL – operation cost studies? ASHRAE Std. 180 Monitoring could go here also, especially if maintenance was covered. Perhaps we could get an owner to speak on this. Testimonials.)

Chair 7- Keith Swilley
Marco Alvarez – PAE Engineers
Steve's EPRI Study
Any other Case Studies (Florida McDonalds)

Current Status: Actively working on, lining up final speakers.



TC 6.8 Subcommittee Report: Handbook (A-34)

Subcommittee Chair: Scott Hackel

Date: Sunday, January 19, 2014

- Discuss Chapter 34 revisions:
 - A comment was raised regarding mentioning strainers in the open loop surface water section. It was pointed out that this was already in the handbook.
 - A comment was raised regarding the mention of 15% PG solutions in loops. The subcommittee agreed to add a qualifier there.
 - Some discussion was had regarding the examples for vertical loop sizing between sizing Method 1 and Method 2. The examples currently use different inputs. We agreed that this was acceptable for now.
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- Discuss renewability of geothermal.
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TC/TG/TRG Activity Feedback Form											
Please provide feedback on your TC/TG/TRG activities and return this form by Tuesday night 9:00 pm to your Section Head by email or drop off a printed copy in the Section Head's mailbox folder outside the ASHRAE Headquarters Room.											
Include activities performed since the last TC meeting (e.g. any letter ballots, submissions to RAC, award nominations, etc.)											
PLEASE DO NOT LEAVE NUMERIC CELLS EMPTY. ENTER 0 IN CELLS IF THERE IS NO COUNT.											
TC#	6.08		Committee Name:			Geothermal Heat Pump and Energy Recovery Applications					
			Chair:			Cary Smith					
Meeting was Held (City)	New York, NY			(Day)	Tuesday			(Date)	1/21/2014		
Membership				Quorum Established (Yes/No)				YES			
				Number Present		Remote Participants		Total on Committee Roster			
Voting Members (excluding Non-Quorum Members)				11		0		15			
Non-Quorum Members				1		0		2			
Corresponding Members				14		0		85			
Provisional Members				0		0		4			
Visitors/Guests				13		0		n/a			
All members/guests who are ALSO YEA members				4		0		8			
Handbook Responsibilities						Standards Responsibilities					
Total Number of Chapters			2			Total Number of Standards			0		
# Chapters voted out this meeting			1			# Standards recommended			0		
Special Publications (last six months)			0			Title:					
Program Activities (For This Meeting)											
Total # of Forums			Total # of Seminars			Total # of Paper Sessions			Other Presentations		
Submitted*	Sponsor	Co-sponsor	Submitted*	Sponsor	Co-Sponsor	Submitted*	Sponsor	Co-Sponsor	TC Research Results	Other Papers**	
0	0	0	1	1	0	0	0	0	0	0	0
Current Research Activities (active)						TC Management					
# of new/revised RTARs submitted			0			Minutes completed on time?			YES		
# of other active RTARs			1			Agenda distributed on time?			YES		
# of Work Statements submitted			0			Did Chair attend training?			YES		
# of other active Work Statements			1			Did Vice Chair attend?			NO		
# of active TRPs			2			Did Program Chair attend training?			YES		
# of active RPs			2			Did Handbook Chair attend training?			YES		
Problems getting RTAR/WS approved?			NO			Did Research Chair attend breakfast?			NO		
Other Technical Activities						Award Nominations (last six months)					
# FAQs updated this meeting			0			# of Distinguished Service Nominations			0		
# New members added to roster			4			# of Exceptional Service Nominations			0		
						# of Other Nominations: Hightower, Research, Fellow, etc			0		
						Specify Award :					
Any Concerns or requests for the Technical Activities Committee? (Please type in Space Below)											
Extended effort is being given to developing the geothermal track for Seattle. Please work to accommodate these sessions and their requested order of scheduling.											