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

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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 June 26, 2007

TC/TG/TRG TITLE: Geothermal Energy Utilization

DATE OF MEETING: June 26, 2007 LOCATION: Long Beach, California

Members Present	Year APPTD	MEMBERS ABSENT	Year APPTD	EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE
John Shonder (Chair)	05	Michel Bernier (<u>France</u>)	06	Carl Huber
David Dinse(Membership)	06	Andrew Chiasson	06	Greg Tinkler
Steve Kavanaugh (Handbook)	06	James MacMillan	06	Steven Carlson
Lisa Meline (Program)	05	Chris Sharpe	06	Cenk Yavuzturk
Robert Brown	04	Doug Cane (Standards)	04	Ersin Gercek
J. B. Singh (Vice Chair)	05			Jeff Spidler
Kay Thrasher	04			Curt Klagssen
Pat Kempf	06			Don Brundage
Cary Smith	06			Bill Rittelmann
				Kevin Rafferty
				Harvey Sachs
				Arthur Hunt (Secretary)
				Xiaobing Liu
				Gary Phetteplace

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DISTRIBUTION

ALL MEMBERS OF TC/TG/TRG

TAC Chairman: _____ Patricia Grael

TAC Section Head: _____ Don Brundage

LIAISONS

RAC Research: _____ Lawrence Markel

Chapter Technology Transfer Committee: _____ Chris Pelton

Journal: _____ Fred Turner

Special Publications: _____ Micki Geshwiler

Program: _____ Lane Jackins

Standards: _____ Jay Kohler

Handbook: _____ Renison Tisdale

MANAGER OF RESEARCH/TECHNICAL SERVICES: _____ Michael Vaughn

MANAGER OF STANDARDS: _____ Claire Ramspeck



Meeting of
TC 6.8 GEOTHERMAL ENERGY UTILIZATION
Renaissance Hotel, Long Beach, CA
Tuesday, 26 June, 2007

MINUTES

Pursuant to an announcement sent to all members, ASHRAE Technical Committee TC 6.8, *Geothermal Energy Utilization*, met on Tuesday, 26 June 2007 in the Renaissance Hotel, Long Beach, California. The meeting was held in conjunction with the ASHRAE 2007 Summer Meeting.

I. CALL TO ORDER, WELCOME, INTRODUCTIONS

Chairman John Shonder called the meeting to order at 3:38pm. The chairman welcomed everyone. Members, guests, and ASHRAE Committee liaisons then introduced themselves.

II. QUORUM CHECK

Fifty percent of the voting members of the technical committee, present in person, constitutes a quorum for the transaction of business. A roll call revealed that nine of the fourteen members were present, establishing that a quorum was available to conduct committee business.

III. APPROVAL OF MINUTES

The chairman distributed copies of the minutes of the January 30, 2007 meeting and asked members to review them. Lisa Meline offered the following corrections: Page 2 - under 6.0 Subcommittee Reports (paragraph 2) replace "Lisa Meline" with "Kirk Mescher." And Page 2 - under 6.0 Subcommittee Reports (paragraph 3) change sentence to read, "Michel Bernier offered to chair a seminar on Radiant Cooling." Kay Thrasher moved to approve the minutes as corrected, and Pat Kent seconded. The motion was carried (9,0,1).

IV. ANNOUNCEMENTS

Chairman John Shonder reported that the level of RTARs and Work Statements is unusually low, possibly due to present rules regarding conflict of interest. The Research Subcommittee is considering partially relaxing the rules. There is plenty of funding available for research projects.

A number of member biographies have been lost by ASHRAE. They are reentering them, so members should recheck their biographies for accuracy.

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Each TC is to prepare a short (25 words) summary of activities for distribution to the Membership.

V. SUBCOMMITTEE REPORTS:

A. HANDBOOK COMMITTEE – Kevin Rafferty

Steve Kavanaugh reported that the chapter proofs look good and asked those present to review it and make early recommendations for the next set of revisions. He would like to get started now so we don't have a last minute rush job.

There is no certification program for water-to-water heat pumps, although a method of test, ASHRAE 37, is available. 90.1 wants to develop a Standard of Performance so a certification program can be established.

B. MEMBERSHIP COMMITTEE - DAVID DINSE

Mr. Dave Dinse reported that JB Singh, the incoming chair, has the new roster. Mr. Singh listed the following new voting members effective 7/01/07:

JB Singh, (extended for two years) Xiaobing Liu, Cenk Yavuzturk, Gary Phetteplace, Kirk Mescher, and Kevin Rafferty.

C. PROGRAMS COMMITTEE – LISA MELINE

Ms. Meline asked for suggestions for future programs from the Committee. Carl Huber suggested one on high temperature applications in industrial and large commercial applications and another on contemporary issues with WSHP. Ms Meline presented the following program status report:

TC6.8 Programs for New York City

TRANSACTION SESSION (tentative)

"Influence of Natural Convection in Water-filled Boreholes for GCHP", Gehlin and Gustafsson

Carl Orio – trying to get through review before August 8 to pair with paper above

SEMINARS (Prioritized per TC6.8 6/26)

(1) International Experience on Geothermal Energy Technology, Signhild Gehlin, Chair

Aquifer storage with and without heat pumps (Aart Snijder, Netherlands)



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Borehole storage with or without heat pumps (Göran Hellström, Sweden)
Confirmed
Pit storage with water or snow (Jouko Ritola, Finland)
Chinese mega-storage (Xiaobing Liu, Climatemaster) "Half" confirmed
Solar combined ground storage (Jean-Christophe Hadorn, Switzerland)

(2) GSHP Systems in Urban Settings, James G. MacMillan, Chair

25 years of Geothermal Heat Pumps in Manhattan and boroughs (Carl Orio)
Central Plant Geothermal: It's not just Unitary anymore (Steve Hamstra)
Presentation title TBD (Jack DiEnna)

(3) The Benefits of Properly Commissioned GSHP Systems, JB Singh, Chair

Suburban Philadelphia High School

Arthur Hunt
Raymond Berkebile
Brad Lowe

Cary Smith moved to accept the above priorities, seconded by Dave Dinse 8,0,1

PDH Offerings

Jim's Seminar (above) is one that is already being planned and will be prepared in advance to try to meet the requirements for offering. The Seminar Number is 6973 and it is ranked as the #1 priority from TC6.8.

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J. B.'s Seminar is the one that we did in Dallas and I am told that previous, well-received Seminars may be re-packaged and offered. That is what I have done. The two speakers will be Art Hunt and Lisa Meline. There is nothing "new" here other than the documents required by the NYC PIE. The Seminar Number is 5974 and it is ranked as the #2 priority from TC6.8.

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TC6.8 Programs for Salt Lake City – Benchmarking the current standard of Care

TRANSACTION SESSIONS (planned)

(1) "Ground Source Heat Pump Design: An Overview of Methods and Resources"

Scott Schillereff
Kevin Rafferty
Steve Kavanaugh



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(2) **“Update on TRP-1384 Hybrid Research Project”** - if we cannot find a second paper this paper will likely go into a Poster Session (may also be preparing an article so this could go into a Seminar)

SEMINARS (planned)

(1) **Green Schools using GSHPs** – Lisa Meline

Indian River Intermediate School in New York (John Shonder) - all electric
School in Illinois (Kirk Mescher)
Weaverville Schools (Keith Ritter)

(2) **Retrocommissioning with GSHPs** – J. B. Singh

Hewlett High School in Woodmere , NY - Art Hunt

(3) **GSHP Sustainability in the West** – Cary Smith

Something about green school, data from hybrid projects in Salt Lake City (sewer and water systems);
water conservation. This might also integrate into Seminar 1.
School in Salt Lake City (Cary Smith) – Jordan School District

(4) **GSHP Installation Cost Data - Kavanaugh**

Operating Cost Data – Energy Star Rating System
From owner and maintenance data.

At the end of the report of the Program Committee, Don Brundage made a presentation to Chairman John Shonder, thanking him for his services as Chair of the TC.

D. RESEARCH COMMITTEE – CENK YAVUZTURK

Mr. Cenk Yavuzturk reported that we have two active **RTARS**: one on an investigation of means to prevent scaling. A Work Statement on this one is required by 8/15 or it will be dropped. Kevin Rafferty will expedite completion of this Work Statement. The second is on surface water heat pump systems. The Work Statement, needed by 2008, was revised, and neither the original draft nor the revisions were agreed on. The revisions have since been lost. John Shonder will search for the revisions and try to revive the Work Statement. Cenk Yavuzturk and Steve Kavanaugh will assist in redrafting it.

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We have been asked by TC 9.4 to cosponsor an RTAR on design guidelines for outdoor air ventilation of water loop heat pump systems. Motion to cosponsor by Kay Thrasher, seconded by Dave Dinse, 8,0,1



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Research Project 1384: Dave Dinse moved to approve a six months extension. Seconded by Lisa Meline 8,0,1. Dave Dinse reported that the Subcommittee has concerns about the methodology and assumptions. The numbers are not making sense yet and they don't have enough information to feel comfortable about the project.

Xiaobing Liu suggested two new research projects: Modeling of the Ground Heat Exchanger in Foundation Systems and Effective Dehumidification Strategies with Geothermal Systems.

Dave Dinse suggested we obtain cost data on the GSHP system at the new headquarters building. This will help in our efforts to reduce the cost of GS systems.

Kirk Mescher suggested we offer the help of our Committee with the design of the geothermal system at the [ASHRAE Headquarters](#) building.

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F. JOURNAL – J.B. SINGH

No report.

G. WEBMASTER – DARIN NUTTER

No report

VI. LIAISON REPORTS

A. TC 9.4 - STEVE KAVANAUGH

Covered in earlier report

B. TC 8.11 - DARIN NUTTER

No report

B. TC 7.8 - JOHN SHONDER

TC 7.8 in interested in participating in the Headquarters Building

D. FEMP - JOHN SHONDER

[FEMP is rebidding its Super ESPC Contracts.](#)

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E. IGSHPA – PHIL RAWLINGS

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No report

Harvey Sachs reported that TC 6.8 will be successful at presenting short courses at meetings. This will be a good opportunity to get a lot of useful information out to the membership. Also, the Society has launched an e-learning program. Harvey will set up the contacts if there is interest.

VII. OLD BUSINESS

Steve Kavanaugh reported that he has not heard from those who objected to the draft Method of Test for GSDX systems.

VIII. NEW BUSINESS

There was no new business

IX. ADJOURN

A motion to adjourn was brought by Dave Dinse and seconded by Pat Kempf. 9,0,0 The meeting adjourned at approximately 6:20 p.m.