

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.: T.C. 6.7 DATE: January 11, 2010
 TC/TG/TRG TITLE: Solar Energy Utilization
 DATE OF MEETING: June 23, 2009 LOCATION: Louisville, KY

MEMBERS PRESENT	YEAR APPTD*	MEMBERS ABSENT	YEAR APPTD*	EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE
Cenk Yavuzturk (Chair)	06	Robert Aresty	CM	Kevin Brown
Tim Merrigan (VC/Research)	07	Erv Bales	CM	Don Colliver
Andrew Chiasson (Sec)	05	William Bahnfleth	CM	Payn Delgashae
Mark Hertel (Handbook)	05	John Brown	CM	Ram Narayanamurthy
Janice Means (Program)	06	Alan Chalifoux	CM	Gary Phetteplace (Section 6.0 Head)
Costas Balaras (Intl)	07	Brad Collins	CM	Jeb Schreiber
Andy Lowenstein	05	Kevin Cross	CM	Aaron Smith
Gaylen Atkinson	CM	Charlie Cromer	CM	Gary Zyhowski
Henry Healey (ALI)	CM	Robert Davis	CM	
Sanford Klein	CM	Brian Dougherty (Std)	05	
Marija Todorovic	CM	Peter Ellis	CM	
		Robert Foster	CM	
		David Gerlach	CM	
		John Gladstone	CM	
		D.Y. Goswami	CM	
		Cory Hasiak	CM	
		Richard Hayter	CM	
		Hugh Henderson	CM	
		Bion Howard	CM	
		Jim Huggins	CM	
		Pamela Immekus	CM	
		Wilfred Laman	CM	
		Alfred Lutz	CM	
		Fariborz Mahjouri	CM	
		Jeff Mahoney	CM	
		Andrew McNamara	CM	
		Alfi Helmy Malek	CM	
		Svein Morner (Web)	05	
		Stanley Mumma	CM	
		Joseph O'Gallagher	CM	
		Henry. Peebles	CM	
		Andrew Price	CM	
		Talal Rabiah	CM	
		Agami Reddy	CM	
		Harvey Stenger	CM	
		Menalaos Stylianou	CM	
		Ather Syed	CM	
		Gregoris Thoma	CM	
		Dean Tompkins	CM	
		Christian Vachon	05	
		Michael Wassmer	CM	
		Scott Wayland	CM	
		Dean Wiersma	CM	
		Bede Wellford	CM	
		Maurice Wildin	CM	
		Byard Wood	CM	
		Paul Zeigler	CM	

*Starting month as a voting member is July of the year shown.



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DISTRIBUTION

ALL MEMBERS OF TC/TG/TRG

TAC CHAIR: B. Becker

TAC SECTION HEAD: G. Phetteplace

LIAISONS:

Program: L. Jackins ALI: T. McGinn

Handbook: M Modera (Appl); T. Lawrence (S&E) RAC: J. Hogeling

Standards: J. Kohler TEGA:

Special Pubs: J. Keen

MANAGER OF RESEARCH AND TECHNICAL SERVICES: M. R. Vaughn

MANAGER OF STANDARDS: S. Reiniche



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DRAFT MEETING MINUTES ASHRAE TC 6.7 – SOLAR ENERGY UTILIZATION Annual Meeting – June 23, 2009 Louisville, Kentucky

I. CALL TO ORDER, MEETING AGENDA, AND MEETING MINUTES

The meeting was called to order at 1:15 PM by Chair C. Yavuzturk. Quorum was not met at the start of the meeting, with only four voting members present (Chiasson, Lowenstein, Merrigan, and Yavuzturk), and five needed for a quorum. The minutes from the January 2009 Winter Meeting in Chicago were reviewed and it was pointed out that Charlie Cromer was present at the Chicago meeting, but not listed on the cover sheet.

More than five voting members (achieving quorum) were in attendance intermittently throughout the meeting, and the Chicago meeting minutes were approved at 3:00 PM (with the correction that C. Cromer was present). Janice Means moved to accept the minutes as amended, and Andy Lowenstein seconded. The motion carried 5-0-CNV.

II. CHAIR'S REPORT (Cenk Yavuzturk)

C. Yavuzturk attended the TC chairs meeting on Sunday morning. Highlights of the meeting were that ASHRAE is introducing a new category of papers to be called "*Conference Papers*", which will consist of a single blind review with two reviewers. *Transactions Papers* will still be double-blind with three reviewers. Beginning at the 2010 Annual Meeting in Albuquerque, ASHRAE will be accepting suggestions from TCs for the theme of the meeting.

III. SUBCOMMITTEE REPORTS

A. HANDBOOK – MARK HERTEL

M. Hertel gave an update of Handbook revisions. Revisions to the 2011 Applications Handbook are currently being planned. Feedback from other chapter revisions included requests for additional examples. Mark suggested examples for service hot water and perhaps BIPV.

Regarding timing, the first draft is needed by the end of September for subcommittee review. The aim is for full TC review in December, and then discussion at the 2010 Winter Meeting in Orlando. The full TC vote is targeted for March or April 2010.

Long-time subcommittee chairman Mark Hertel still seeks someone to replace him as the handbook chair.

B. RESEARCH – TIM MERRIGAN

Subcommittee chair Tim Merrigan explained that the two RTARs related to solar cooling and regeneration of desiccants were re-submitted to the Research Administration Committee (RAC), and were again rejected. The actual titles of these RTARs were: (i) "The Direct Regeneration of Desiccants with Solar Energy", and (ii) "Optimization and Testing of a Solar Cooling System". At the Research Subcommittee meeting, RAC Liaison Jaap Hogeling explained that the main reason for rejection of the desiccant RTAR was that it looked too commercial. Also, there were RAC concerns over intellectual rights and coordination of DOE co-funding. The RTAR related to solar cooling was rejected on the basis that it was of no benefit to ASHRAE and that the technology was not new. Given the unfavorable history of these RTARs with RAC, the TC discussed new ideas for research topics. One possible topic emerged regarding guidelines for installation of solar absorption cooling systems. Tim Merrigan suggested a topic related to Net Zero Buildings.



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Gary Klein with TC 6.6 (Service Water Heating Systems) proposed a joint RTAR to examine the relationship between solar hot water systems and their backup system(s). The motivation of this project stems from the increased use of tankless water heaters with solar hot water systems, and some control and operational issues that have arisen with tankless backup and other backup systems in general. The deliverable would be some type of guideline.

Marija Todorovic suggested an RTAR related to “temperature boosting” of hot geothermal systems using solar thermal systems. Marija was aware of some applications in Central Europe where this technology was being considered. In short, the concept would be applicable for locations where geothermal water is available, but not quite hot enough for electrical power generation. Solar thermal collectors would provide the additional heat. Marija would solicit other TCs, such as 1.10 and 6.8, for co-sponsorship.

Finally, Tim Merrigan noted that RTARs can now be submitted at any time.

C. PROGRAM – JANICE MEANS

Janice Means proposed ideas for sessions with the following themes for upcoming meetings: “sustainability re-sustained revisited”, “solar decathlon”, “solar – the good, bad, and ugly”, and “LEED case studies with solar”. Janice reported that two Transactions Papers regarding solar combi systems were going through the review process for the Orlando meeting in Winter 2010.

Other session ideas were proposed by Gaylen Atkinson regarding solar controls for Albuquerque. Marija Todorovic proposed a session related to building retrofits with integration of renewables.

After much discussion, a vote was taken to prioritize themes for possible sessions for upcoming meetings: four were in favor of “solar decathlon”; three in favor of “sustainability re-sustained”; two in favor of “global experiences”; one in favor of “LEED case studies”; and none in favor of “solar – the good, bad, and ugly”. Consequently, Gaylen Atkinson offered to chair the “solar decathlon” session, and Janice Means offered to chair the “sustainability re-sustained” session, both to be proposed for the Winter 2010 Meeting in Orlando. The session themes “global experiences” and “LEED case studies” will be deferred to the Albuquerque meeting in June 2010.

D. STANDARDS – BRIAN DOUGHERTY

See attached report submitted by Brian Dougherty. Charlie Cromer added that there is a deadline of July 24, 2009 for public comment on Standard 93.

E. WEBSITE – SVEIN MORNER

No report.

E. MEMBERSHIP – CENK YAVUZTURK

Cenk noted that a number of voting members will be rolling off as of July 1, 2009. These include Andrew Chiasson, Andrew Lowenstein, Janice Means, Svein Morner, and Christian Vachon.

IV. LIAISON REPORTS FROM SOCIETY & OTHER ORGANIZATIONS

ALI (Henry Healey): Henry reported that the solar short course is on the list for the Winter 2010 meeting in Orlando. The course theme will be “successful solar applications”.

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TAC (Gary Phetteplace): Present at TC meeting, but nothing to report.

RAC (Jaap Hogeling): Jaap explained RAC's comments on rejected RTARs and offered comments regarding developing RTARs toward design guidelines.

Handbook (Mark Modera and Tom Lawrence): No report

Other TCs:

LEED Energy and Atmosphere TAG (Bion Howard): No report.

American Solar Energy Society (ASES): No report.

American Society of Mechanical Engineers (ASME): No report.

Standards Liaison: See subcommittee report below.

Solar Decathlon (Mike Wassmer): No report.

Energy Guide (Don Colliver): No report.

V. OLD BUSINESS

Quality control in solar-related ASHRAE publications: Henry Healey began a discussion regarding ASHRAE's showcase project in Salt Lake City and an associated article. Henry described the article as containing basic solar design mistakes, and stated that the article and the project had little to no quality control and poor commissioning. Henry stated that ASHRAE needs to have a commissioning agent. Cenk Yavuzturk suggested writing a letter to ASHRAE to get cognizant TCs to review projects to establish quality control.

VI. NEW BUSINESS

None

VII. ADJOURNMENT

Meeting adjourned approximately 3:25 PM.



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Standards Subcommittee Report
ASHRAE TC 6.7 Solar Energy Utilization
2009 Annual Meeting – Louisville, KY
Standards Committee Liaison to TC 6.7: Jay Kohler

Std 93-2003R *MOT to Determine the Thermal Performance of Solar Collectors*

SPC Chair: Charlie Cromer

SPC Liaison: Nadar Jayaraman

The current standard is a reaffirmation of the 1986 publication and its latest ANSI approval occurred on April 22, 2003. SPC 93R met on Monday, June 22, 2009. Prior to the meeting, SPC chairman Charlie Cromer generated a list of proposed changes that were shared with committee members in advance of the meeting. Anyone wishing to join the SPC (ASHRAE and non-ASHRAE members) are encouraged to do so. Please contact the SPC 93 chairman or the ASHRAE staff member who oversees Project Committee membership at 404-636-8400, ext 1125 or by email at PCMembership@ashrae.net.

Std 95-1987P¹ *MOT to Determine the Thermal Performance of Solar Domestic Water Heating Systems*

SPC Chair: Tim Merrigan

SPC Liaison: Boggarm Setty

Co-cognizant TC: 6.6 (Service Water Heating)

SPC 95P is in the process of recommending that ASHRAE conduct a Modified adoption of ISO Standard 9459-1: 1993, "Solar heating – Domestic water heating systems – Part 1: Performance rating procedures using indoor test methods." The ISO standard will replace ASHRAE Standard 95. A Word version of the ISO standard containing both substantive and non-substantive modifications has been generated. SPC 95 Chair Merrigan will forward all the needed paperwork to ASHRAE staff for a vote on a publication public review. Although ASHRAE staff originally agreed that SPC 95 did not have to be repopulated in order for the modified adoption to move forward, the ASHRAE Standards Committee is now recommending that two members be added immediately. Chairman Merrigan is addressing the membership issue.

Std 96-1980 (RA 89)P¹ *MOT to Determine the Thermal Performance of Unglazed Flat-Plate Liquid-Type Solar Collectors*

SPC Chair: James Huggins

SPC Liaison: Roger Hedrick

SPC 96P plans to pursue an identical or modified adoption of ISO Standard 9806-3: 1995, "Test methods for solar collectors -- Part 3: Thermal performance of unglazed liquid heating collectors (sensible heat transfer only) including pressure drop." SPC 96 Chair Jim Huggins has requested that ASHRAE staff generate a Word version of the ISO standard so that the SPC may use it as a working draft. SPC 96 has been otherwise inactive over the last few years.

Std 125-1992 (RA 06) *MOT Thermal Energy Meters for Liquid Streams in HVAC Systems*

Cognizant (Lead) TC: 6.1, Hydronic and Steam Heating Equipment and Systems

Co-cognizant TC: 6.7

The reaffirmed standard has been published; an errata addressing an error may be downloaded at <http://www.ashrae.org/technology/page/120>. ASHRAE Staff completed a review of the standard on August 14, 2008 and have forwarded its findings to TC 6.1 while also requesting that the TC make a recommendation on whether to revise, reaffirm, or withdraw the standard. TC 6.7 members wishing to comment on the recommendation request are encouraged to contact TC 6.1, ASHRAE Staff, or TC 6.7's Brian Dougherty.

¹ *NOTE: Standards 95 and 96 are designated as "Proposed" rather than as a "Revision" due to exceeding the maximum time frame in which a standard may retain the ANSI designation.



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Canvass Ballots - None

ISO Technical Committee 180 (Solar Energy)
Subcommittee 4 (Systems – Thermal Performance, Reliability, and Durability)
ISO TC 180 Secretariat: Australia
ISO TC180/SC4 Secretariat: USA (ASHRAE)

ASHRAE holds the secretariat for Subcommittee 4 within TC 180, Systems – Thermal Performance, Reliability and Durability. Jim Huggins serves as the SC 4 chair.

As noted below, several ISO solar thermal standards are currently being revised or revisions are planned in the near future. Opportunities therefore exist for US experts to serve on ISO working groups and as members of the US Technical Advisory Group that ultimately formulates the US position on these ISO standards. Anyone who can serve in such a capacity is asked to contact Doug Tucker, Assistant Manager of Standards – International (dtucker@ashrae.org or 404-636-8400, ext. 504).

1. ISO Standard 9459-1: 1993, “Solar heating – Domestic water heating systems – Part 1: Performance rating procedures using indoor test methods”
Cognizant SC: 4
ASHRAE SPC 95 is pursuing a modified adoption of this ISO standard. No activity has been reported on the ISO Standard itself for a few years.
ISO document stage code is 90.93 – international standard confirmed.
2. ISO Standard 9459-2: 1995, “Solar heating – Domestic water heating systems – Part 2: Outdoor test methods for system performance characterization and yearly performance prediction of solar-only systems.”
Cognizant SC: 4
This standard will be revised. A revision project team is currently being formed. Participating member countries are being asked to nominate experts who will assist with the revision.
ISO document stage code is 90.93 – international standard confirmed.
3. ISO Standard 9459-3: 1997, “Solar heating – Domestic water heating systems – Part 3: Performance tests for solar plus supplementary systems”
Cognizant SC: 4
This standard was withdrawn by ISO in 2005. SC4 passed Resolution 150 that calls for reinstating and revising the standard. Australia agreed to prepare the New Work Item Proposal (NWIP) and to generate a new draft that is based on the Australian national standard AS 2984. As of June 2009, no action has been recorded on the NWIP.
4. ISO/CD 9459-4, “Solar heating – Domestic water heating systems – Part 4: System performance characterization by means of component tests and computer simulation”
Cognizant SC: 4
Jim Huggins, the project leader, is working on the latest revision. The next draft is project out for comment within the next few months.
ISO document stage code is 30.20 – CD study/ballot initiated.



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TC 6.7 Standards Subcommittee Report 2009 Annual Conference – Louisville, KY

5. ISO Standard 9459-5: 2007, “Solar heating – Domestic water heating systems – Part 5: System performance characterization by means of whole-system tests and computer simulation”
Cognizant SC: 4
The document was published as an international standard in May 2007.
ISO document stage code is 60.60 – International standard published.
6. ISO/DTS 11924, “Solar heating – Domestic water heating systems – Test methods for the assessment of protection from extreme temperatures and pressures”
Cognizant SC: 4
The current document failed to receive sufficient votes for publication as a Technical Specification. SC4 agreed to add information from Annex C of EN 12976-2, “Thermal solar systems and components – Factory made systems – Part 2: Test methods,” within the draft revision.
7. ISO Standard 9806-1: 1994, “Test methods for solar collectors – Part 1: Thermal performance of glazed liquid heating collectors including pressure drop”
Cognizant SC: 5 (Collectors and other components)
At the Cyprus meeting, TC 180 and CEN TC 312 agreed to have TC 180 initiate New Work Items for revising all three parts of ISO Standard 9806. Working Group 1 under CEN TC 312 will provide draft documents and other resource documents used in the revision of EN 12975 to the ISO working group that is tasked with the revision of ISO Standard 9806.
ISO document stage code is 90.60 – international standard, close of periodic review.
8. ISO Standard 9806-2: 1995, “Test methods for solar collectors – Part 2: Qualification Test Procedures”
Cognizant SC: 5 (Collectors and other components)
See comments given above with ISO Standard 9806-1.
ISO document stage code is 90.60 – international standard, close of periodic review.
9. ISO Standard 9806-3: 1995, “Test methods for solar collectors – Part 3: Thermal performance of unglazed liquid heating collectors (sensible heat transfer only) including pressure drop”
Cognizant SC: 5 (Collectors and other components)
See comments given above with ISO Standard 9806-1.
ISO document stage code is 90.60 – international standard, close of periodic review.

Report Submitted By: Brian Dougherty

TC/TG Activity Feedback Form

Please provide feedback on your TC/TG activities and return this form to your Section Head by email or drop off a printed copy in the Section Head's mailbox folder outside the ASHRAE Headquarters Room by Tuesday night 9:00 pm.

From TC 6.7	Committee Name: <i>SOLAR ENERGY UTILIZATION</i>
	Chair: <i>Cenk Yavuzturk</i>

Meeting was Held	(Day) <i>TUESDAY</i>	(Date) <i>JUN. 23, 2009</i>
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Membership		
	Number Present	Total Number on Committee
Voting Members	7	9
International Members	1	1
Corresponding Members	4	47
Visitors and Guests	8	

Handbook Responsibilities *		Standards Responsibilities *	
Volume and Chapter (number only)	Next Revision Due Date	Standards Number (number only)	Next reaffirmation date
<i>A 33</i>	<i>MARCH 2010</i>	<i>93-2003</i>	
<i>S 36</i>	<i>MARCH 2011</i>	<i>95-1987</i>	
		<i>96-1980</i>	
		<i>109-1986</i>	
		<i>125-2002</i>	

Program Activities * at this Meeting		
Transactions	Seminar	Forum
	<i>No. 16</i>	

Current Research Activities *		FAQs Responsibilities *	
Research Project (number only)	PMS meeting held (yes/no)	FAQ number (number only)	Last time reviewed
		<i>79</i>	

Does Committee have Web Site on ASHRAE Server? YES .

If so, is Web Site up to date? YES .

Any requests of the Technical Activities Committee ?