

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. 8.11 Date January 10, 2006
 TC/TG/TRG TITLE: Unitary and Room Air Conditioners and Heat Pumps
 DATE OF MEETING: June 27, 2005 LOCATION: Denver, CO

ATTENDANCE

MEMBERS PRESENT	Committee Position	Term End Date
Jason T LeRoy	CHAIRMAN/MBR	06/30/05
Rusty Tharp	SECRETARY	06/30/06
Hugh I Henderson Jr	PROGRAM SUBCOM CHM/MBR	06/30/06
Gregory J Rosenquist	HANDBOOK SUBCOM CHM/MBR	06/30/06
Eckhard Achim Groll	ALI COORDINATOR/MBR	06/30/07
Brian P Dougherty	STANDARDS SUBCOM CHM/MBR	06/30/07
Darin W Nutter	TC WEBMASTER/MEMBER	06/30/07
Piotr A Domanski	CORRESPONDING MEMBER	
Byron F Horak	CORRESPONDING MEMBER	
H Michael Hughes	CORRESPONDING MEMBER	
Van D Baxter	CORRESPONDING MEMBER	
C Keith Rice	CORRESPONDING MEMBER	
Don Schuster	CORRESPONDING MEMBER	
Ramez Afify	CORRESPONDING MEMBER	
Don B Shirey III	CORRESPONDING MEMBER	

EX-OFFICIO MEMBERS & ADDITIONAL ATTENDANCE		
Ron Davis	NON-MEMBER (HANDBOOK LIAISON)	
Don James	NON-MEMBER	
Brian Ferriol	NON-MEMBER	
Reinhard Radermacher	NON-MEMBER	
Vance Payne	NON-MEMBER	
Bo Shen	NON-MEMBER	
Stephen Spletzer	NON-MEMBER	
Vikrant Auk	NON-MEMBER	
Michael Taras	NON-MEMBER	

MEMBERS ABSENT	Committee Position	Term End Date
Sivakumar Gopalnarayanan	VICE CHAIRMAN/MBR	06/30/07
Mark Spatz	MEMBER	06/30/07
Man-Hoe Kim	INTERNATIONAL MEMBER	06/30/07
Sarah Medepalli	MEMBER	06/30/07

DISTRIBUTION
ALL MEMBERS OF TC/TG/TRG

TAC Chairman: Eckhard Achim Groll
TAC Section Head: Bryan Becker
LIAISONS:
RAC Research: Ronald Bailey
Journal: Branislav B Todorovic
Program: Lynn Werman
Standards: Stephen Skalko
Handbook: Ron Davis
MANAGER OF TECHNICAL SERVICES: Michael R Vaughn
MANAGER OF RESEARCH: William Seaton
STANDARDS STAFF LIAISON: Claire Ramspeck
TECH SERVICES STAFF LIAISON: Michael R Vaughn

MINUTES
ASHRAE TECHNICAL COMMITTEE 8.11
UNITARY AND ROOM AIR CONDITIONERS AND HEAT PUMPS

DENVER, CO
MONDAY, JUNE 27, 2005

I. CALL TO ORDER

The Chair called meeting to order at 4:25 pm.

II. INTRODUCTIONS

All present (voting members, corresponding members and guests) introduced themselves.

III. DETERMINATION OF A QUORUM

Seven voting members were initially present establishing a quorum.

IV. ANNOUNCEMENTS

The Chair summarized the highlights from the TC Chair breakfast meeting.

- ASHRAE has issued the following "Management by Objectives":
 - 75% of Technical Committees in Section 8 are requested to nominate Hightower Award candidate. Deadline for nominations are September 30, 2005
 - All Technical Committee web pages should be on ASHRAE's web server.
 - Technical Committee meeting minutes should be distributed within 60 days of meeting.
- Steve Kavanaugh has written a book for ASHRAE entitled *HVAC Simplified*. The book is written for engineers who haven't had formal HVAC training. The book contains 12 chapters. ASHRAE is looking for reviewers. Interested reviewers can review individual chapters (i.e., no need to review entire book).
- ASHRAE's List Service is now operational. This should make communication between ASHRAE Technical Committees easier.
- ASHRAE is willing to issue "thank you" letters for volunteers (i.e., active members participating in ASHRAE activities). The letter would be written for the volunteer's supervisor stating ASHRAE's appreciation for the volunteer's service.

V. ADDITIONS TO THE PUBLISHED AGENDA

Discussion of the Technical Committee's web page was added to the agenda.

VI. LIAISON REPORTS FROM OTHER COMMITTEES

Handbook

- April 12, 2006 is the due date for Chapter 1, Residences. Ramez Afify (acting Handbook Subcommittee Chair) responded by saying that the TC will meet the deadline. Ramez stated that he already has the Chapter reviewed and is addressing the comments.
- TC 8.11 is responsible for two chapters in the 2008 Handbook. The due date for the chapters is one year after the due date for Chapter 1, Residences. The TC should be well on their way to completing the review of the chapters. Ramez Afify responded that he has identified two reviewers and is looking for at least two more volunteers.

VII. MINUTES OF PREVIOUS MEETINGS

Because the minutes from the January 2005 Orlando meeting were not distributed to the TC prior to the meeting, Chair LeRoy stated that he would issue a letter ballot in two weeks to the TC to vote on approval of the Orlando meeting minutes.

VIII. MEMBERSHIP/ROSTER

The TC currently has eleven voting members on the roster. After the June 2005 meeting, the roster will increase to 13 voting members.

IX. SUBCOMMITTEE REPORTS

A. PROGRAM COMMITTEE – HUGH HENDERSON

It was reported that TC 8.11 was sponsoring Forum 21 at the Denver meeting entitled *Unitary A/C's role in meeting ASHRAE 62 ventilation requirements*. Steve Hancock is the forum moderator.

The program subcommittee met on Sunday, June 26. The following programs were proposed to the TC:

- Seminar entitled *Climate Sensitive Air Conditioners*. This seminar is being proposed for the Chicago (January 2006) meeting. Greg Rosenquist would be the Chair. Greg stated that he has already identified four potential speakers including: Keith Rice, Don Shirey, John Proctor, and Roy Crawford.
- Symposium that addresses issues of part-load performance. Hugh Henderson would be the Chair. Hugh is targeting the Quebec City (June 2006) meeting for the symposium.
- Forum that addresses installation and maintenance issues associated with 13 SEER systems. Jason LeRoy would be the Moderator. This forum was already submitted once and rejected by ASHRAE for the Denver meeting. This forum is being proposed for the Chicago (January 2006) meeting.

One other program idea was discussed entitled *After R-22 What?*. If such a program is pursued, TC 2.5 should be contacted for possible collaboration.

A motion was made by Hugh Henderson and seconded by Brian Dougherty to identify the seminar on Climate Sensitive Air Conditioners as the TC's top ranking followed by the forum on 13 SEER systems. The motion passed 7-0-0.

B. RESEARCH COMMITTEE – MARK SPATZ

The TC 6.3 Research Subcommittee Chair (Jim) requested co-sponsorship from TC 8.11 on an RTAR that TC 6.3 is developing. The RTAR topic is the dehumidification of residential and light-commercial buildings in hot and humid climates. Based on both field and laboratory research, the RTAR will develop a range of approaches for dehumidifying buildings. Phase I is a literature search to identify existing dehumidification approaches. ASHRAE RP-1254 (an active research project sponsored by TC 8.11) is identifying dehumidification approaches for commercial buildings. Upon hearing this, the TC 6.3 Research Subcommittee Chair stated that the RTAR could be revised to focus on residential buildings only. There seemed to be consensus of the TC members that revisions will be needed to TC 6.3's RTAR before TC 8.11 will consider co-sponsorship. The primary revision needed is to tailor the RTAR to focus on residential buildings only. It was noted that RTARs need to be submitted by August 1st. Hugh Henderson volunteered to work with TC 6.3 to revise RTAR to meet needs of TC 8.11. The revised RTAR will be submitted to the TC for approval by letter ballot either before August 1st (45 days prior to ASHRAE's tech weekend) or 45 days prior to the Chicago meeting in January 2006.

The following status reports of research projects RP-1254 and RP-1173 were given:

- RP-1254: The final report was provided by GARD Analytics (contractor on the research project) to the project monitoring subcommittee (PMS). Minor revisions to the final report will be needed. The contract with GARD Analytics is scheduled to end in August 2005. Charles Bullock, PMS member, was not in attendance at the research subcommittee's meeting on Sunday, June 26th. Thus, the PMS will have to approve the final report next month. Afterwards, a letter ballot will be sent to the TC requesting approval of the final report. Voting members requested that a final draft be distributed to the TC before a letter ballot is sent out. Hugh Henderson will distribute the final draft of the report to the TC, including both members and corresponding members. Hugh noted that the vote is an "up and down" vote, but editorial revisions will be accepted. The TC also requested the Work Statement for the research project. Hugh agreed to distribute the Work Statement with the final draft report.
- RP-1173: Jason LeRoy reported on the status of the project. The contractor (Purdue University) has made great progress. A draft report has been submitted without the testing of a R-407c unit. The research project is currently in "no cost extension" through September 2005. The TC's approval of the final report will be conducted in the same manner as for RP-1254. That is, the final report will be distributed to the full TC and a letter ballot will be sent out afterwards. Ekhard Groll volunteered to send the draft report to TC members who requested it.

C. HANDBOOK COMMITTEE – GREG ROSENQUIST

Ramez Afify provided the status report instead of Greg Rosenquist as Ramez has been serving as Acting Chair.

Chapter 1 in the Applications Handbook has been revised and reviewed. The following two issues need to be resolved: (1) ultraviolet (UV) light and (2) fuel-fired heat pumps. With regard to the issue of UV light, the TC decided that this issue should be included in Chapter 1. The work of SPC 185 should be cited in whatever is written regarding UV light. With regard to fuel-fired heat pumps, the TC decided to leave the current passage intact but not to write more extensively about it, primarily because the technology has been unable to garner any appreciable market share.

Ramez put out a request for reviewers of Chapters 45 and 46 (fully reviewed chapters due April 2007). Greg Rosenquist mentioned that there is a need for better pictures for Chapter 45. Ekhard Groll announced an ASHRAE policy change that allows the publishing of pictures sourced from specific companies.

D. STANDARDS COMMITTEE – BRIAN DOUGHERTY

Standards Subcommittee Report
ASHRAE TC 8.11
Unitary and Room Air Conditioners & Heat Pumps
2005 Annual Meeting – Denver
Standards Committee Liaison to TC 8.11: Brian Dougherty

Std 16-1983 (RA 99) *MOT for Rating Room Air Conditioners and Packaged Terminal Air Conditioners*

SPC Chair: Mark Paquette
SPC Liaison: James Woods

The SPC, with the endorsement of the Standards Committee liaison, recommends that Standards 16 and 58 be combined into one standard. The second unofficial meeting of the SPC was held in Denver on Tuesday, June 28, 2005 from 8:00 to 11:00 am. SPC 16/58R needs at least one more member in order to meet the requirements of an official committee (i.e., five voting members). Individuals willing to participate should generate/update their on-line biographical information and complete the membership application and conflict of interest forms available at <http://xp20.ashrae.org/bio/>. Some of these forms are also available for download from <http://www.ashrae.org/template/TechnologyLinkLanding/category/1638>. If you have questions, contact the Secretary to the ASHRAE Manager of Standards (404-636-8400, ext. 1136 or standards.section@ashrae.org) or the SPC 16/58R chair.

Std 37-2005 *MOT for Rating Electrically Driven Unitary Air-Conditioning and Heat Pump Equipment*

The new revision of Standard 37 received ANSI approval on March 11, 2005 and is now available for purchase.

Std 58-1986 (RA 99) *MOT for Rating Room Air Conditioner and Packaged Terminal Air Conditioner Heating Capacity*

SPC Chair: Mark Paquette
SPC Liaison: James Woods

See discussion provided above under Std 16-1983 (RA99).

Std 116-1995R *MOT for Rating Seasonal Efficiency of Unitary Air Conditioners and Heat Pumps*

SPC Chair: David Tree
SPC Liaison: Hakim Elmahdy

In Denver, SPC 116R met from 2:15 to 4:15 on Monday, June 27, 2005. The SPC is reviewing and editing the entire document. Because the ANSI accreditation on Standard 116 was to expire on July 24, 2005, actions have been taken to reaffirm the standard. No comments were received as part of the reaffirmation public review. Standards Committee approved publication of the reaffirmed standard on Saturday, June 25. The SPC will not be disbanded but instead will be asked to continue its revision of the document.

Std 137-1995 (RA 2004) *MOT for Efficiency of Space-Conditioning/Water Heating Appliances that Include a Desuperheater Water Heater*

Lead TC: 6.6 (Service Water Heating)
Co-cognizant TC: 8.11

STANDARD 137 WAS REAFFIRMED IN 2004. NO ACTION IS NEEDED AT THIS TIME.

TC 8.11 Standards Subcommittee Report - 2005 Annual Meeting: Denver

CANVASS BALLOTS

At the Orlando meeting, TC 8.11 members agreed to participate in the ASHRAE review of two ARI standards that will be released in the near future for canvass balloting. The two standards are ARI Standard 340/360-2004, *Performance Rating of Commercial and Industrial Unitary Air-Conditioning and Heat Pump Equipment*, and ARI Standard 365-2002, *Commercial and Industrial Unitary Air-Conditioning Condensing Units*. ARI provided ASHRAE an extension in order to participate on the canvass ballot. The ballots are expected to be forwarded to TC 8.11 in the coming weeks by ASHRAE's Doug Tucker.

ISO Technical Committee 86 (Refrigeration and Air Conditioning)

Subcommittee 6 (Air Conditioners and Heat Pumps)

ISO Secretariat: ARI

1. ISO Std 5151R, Non-Ducted Air Conditioners and Heat Pumps – Testing and Rating for Performance

The committee draft of ISO 5151R has been revised based on revisions agreed to at the last meeting of the full working group, which was held from September 14-17, 2004 in Paris. The revised document has been forwarded to ISO Geneva for distribution and balloting at the next stage, as a Draft International Standard (DIS). ASHRAE members are encouraged to review the document and submit comments. If interested in commenting, please contact Brian Dougherty at brian.dougherty@nist.gov. Comments by US members will be compiled by ARI and then forwarded collectively to ISO. The ARI contact is Jim Walters (jwalters@ari.org).

2. ISO Std 13253R, Ducted Air Conditioners and Air-to-Air Heat Pumps – Testing and Rating for Performance

The committee draft of ISO 13253R has been revised based on revisions agreed to at the last meeting of the full working group, which was held from September 14-17, 2004 in Paris. The revised document has been forwarded to ISO Geneva for distribution and balloting at the next stage, as a Draft International Standard (DIS). ASHRAE members are encouraged to review the document and submit comments. If interested in commenting, please contact Brian Dougherty at brian.dougherty@nist.gov. Comments by US members will be compiled by ARI and then forwarded collectively to ISO. The ARI contact is Jim Walters (jwalters@ari.org).

3. ISO Std 15042P, Multi-Split System Air Conditioners and Air-to-Air Heat Pumps – Testing and Rating for Performance

The committee draft of ISO 15042P was revised to be consistent with the FDIS-ballot versions of ISO Standards 5151R and 13253R. The 15042P document has been forwarded to ISO Geneva for distribution and balloting at the next stage, as a Draft International Standard (DIS). ASHRAE members are encouraged to review the document and submit comments. If interested in commenting, please contact Brian Dougherty at brian.dougherty@nist.gov. Comments by US members will be compiled by ARI and then forwarded collectively to ISO. The ARI contact is Jim Walters (jwalters@ari.org).

4. ISO Std 13258R, Air-Conditioning Condensing Units – Testing and Rating for Performance

At the ISO TC 86 / SC 6 meeting held in Anaheim in January 2004, the working group was asked to also consider prEN 13771-2 while revising the document in response to comments received from the CD ballot. As the result of discussions at the February 2005 meeting of SC6, the working group will, in addition, be asked to consider a proposed revision to expand the document's scope to include refrigeration condensing units. Because the elapsed time for completing the overall revision process has expired, a ballot for reinstatement of the program of work is needed.

5. ANSI/ARI/ASHRAE/ISO Std 13256 – 1: 1998, Water-Source Heat Pumps – Testing and Rating for Performance, Part 1: Water-to-Air, Brine-to-Air Heat Pumps

This standard has been co-adopted by ASHRAE and ARI and it now carries ANSI designation. The standard is referenced in ASHRAE Standard 90.1, is used in the ARI certification program, and is available for purchase from ASHRAE. The 1998 standard was reaffirmed by ISO in early 2005. Comments submitted during the ASHRAE/ARI adoption process will be considered by the eventual US delegation when future ISO actions result in a vote to revise the standard.

6. ISO Std 13256 – 2, Water-Source Heat Pumps – Testing and Rating for Performance, Part 2: Water-to-Water, Brine-to-Water Heat Pumps

See discussion under ISO Standard 13256 – 1.

Inquiry for Taking Over Responsibility for the Method of Test portion of:

1. ARI Standard 870-2001, Direct Geexchange Heat Pumps

ARI has identified several ARI standards that contain rating and performance requirements plus include the method of test (MOT). Typically, the two organizations prefer to have ASHRAE maintain the MOT procedures. Thus, TC 8.11 – along with TCs 6.8 (Geothermal Energy Utilization) and 9.4 (Applied Heat Pump/Heat Recovery Systems) – are being asked if they would like to take over the MOT duties for ARI Standard 870. TC 8.11 discussed this inquiry for the first time at its Orlando meeting. After the Orlando meeting, Hugh Henderson contacted ARI members familiar with Standard 870 and learned that they felt that ASHRAE Standard 37 met most of ARI Standard 870's MOT needs. If needed, the ARI members who use Standard 870 may seek to participate or comment on the next revision of Standard 37. At the Denver meeting, TC 8.11 voted to not take over responsibility for the MOT portion of ARI Standard 870. The vote was 6-0-0-2.

Possible opportunity to comment on CEN TC 117 Umbrella Standard for Air Conditioners and Heat Pumps

1. EN Standard 14511

During a recent telephone conference call with members of the US Technical Advisory Group (TAG) on ISO TC 86 activities, a member shared information that CEN was reconsidering revisions to its "umbrella" standard covering HVAC&R, including air conditioners and heat pumps. This standard designates which standards to use for meeting the different EN air conditioner and heat pump related energy efficiency directives. Presently the umbrella standard references EN standards. TAG members are hopeful that consideration will be given to referencing some ISO standards instead. Following the Denver meeting, ARI's Jim Walters followed up with TAG members to let them know that the revision appears to only apply to a select few sections of the EN standard. As more information becomes available, it will be shared with TC 8.11 members.

X. OLD BUSINESS

Web Page – Darin Nutter

TC 8.11 web-page is back up and running, and Darin attended the TC web master training. Darin requested from us citations of research funded by TC 7.6/8.11, or any other links or presentations of interest that he can include on our web-site. He also notified us that there is a "members only" section.

<http://www.tc811.ashraetcs.org/>

XI. NEW BUSINESS

ASHRAE Technical FAQ #74: Where can I find a good air conditioning or heating unit? Was reviewed and approved by our committee.

XII. ADJOURNMENT

The meeting adjourned at 6:00 pm.

ASHRAE TC/TG/TRG ACTIVITIES SHEET

DATE: January 10th, 2006

TC/TG/TRG NO. 8.11 **TC/TG/TRG TITLE:** Unitary and Room Air Conditioners & Heat Pumps

CHAIRMAN Jason LeRoy **VICE CHAIRMAN** S. Gopalnarayanan **SECRETARY** G. Rosenquist

TC/TG/TRG MEETING SCHEDULE				
<p><u>Location – past 12 months</u> Orlando, FL – Feb 2005 Denver, CO – Jun 2005</p> <p><u>Location - next 12 months</u> Chicago, IL – Jan 2006 Quebec City – Jun 2006</p>				
TC/TG/TRG SUBCOMMITTEES				
<u>Function</u>	<u>Chairman</u>			
Standards Handbook Programs Research	Brian Dougherty Ramez Afify Hugh Henderson Mark Spatz			
RESEARCH PROJECTS – Current				
<u>Project Title</u>	<u>Contractor</u>	<u>Reporting Comm. Member.</u>	<u>Report Made At Meeting</u>	
1. RP-1254	GARD		YES	
2. RP-1173	Purdue University		YES	
LONG RANGE RESEARCH PLAN				
<u>Rank</u>	<u>Title</u>	<u>W/S Written</u>	<u>Approved</u>	<u>To R&T</u>
1.	RP-1121: Phase 2	YES	YES	Need to contact ARI for joint funding.
HANDBOOK RESPONSIBILITIES				
<u>Year & Handbook Subcommittee Volume, Chapter & Title</u>				
		<u>Deadline</u>	<u>Liaison</u>	
2007	1 Room Air-Conditioners and & Heat Pumps	Jul 2006	D. Wessel	
STANDARDS ACTIVITIES – List and Describe Subjects				
See Section D) above in minutes.				

TECHNICAL PAPERS from Sponsored Research – Title, when presented	
TC/TG/TRG Sponsored Symposia – Title, when presented (past 3 yrs & planned)	
Refrigerant Issues with Unitary A/C and Heat Pumps	Honolulu 6/2002
Part Load / Cyclic Issues	Chicago 1/2006
TC/TG/TRG Sponsored Seminars – Title, when presented (past 3 yrs & planned)	
Emerging Technologies from ARTI 21-CR	Orlando 2/2005
TC/TG/TRG Sponsored Forums – Title, when presented (past 3 yrs & planned)	
Will the new 13 SEER A/C systems be more or less susceptible to field Installation issues?	Chicago 1/2006
Role of HVAC Equipment in Satisfying 62.2	Denver 6/2005
JOURNAL PUBLICATIONS – Title, when published (past 3 yrs & planned)	
None known.	

Submitted by: Greg Rosenquist and Jason LeRoy