

TC/TG/TRG MINUTES COVER SHEET

(Minutes of all TC/TG/TRG Meetings are to be distributed to all persons listed below within 60 days following the meeting.)

TC/TG/TRG NO.: TC 4.1 DATE: June 13, 2015

TC/TG/TRG TITLE: LOAD CALCULATION DATA AND PROCEDURES

DATE OF MEETING: January 26, 2015 LOCATION: Chicago, IL

MEMBERS PRESENT	YEAR APPTD	MEMBERS ABSENT	YEAR APPTD	EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE
Voting Steve Bruning Bob Doeffinger Dan Fisher Suzanne LeViseur Jim Pegues Som Shrestha Larry Sun Chris Wilkins Non-Voting Chip Barnaby Glenn Friedman Stephen Roth Jeff Spitler Branko Todorovic Russell Taylor Justin Wong	2009 2009 2010 2008 2007 2009 2007 2010 2007 2008	Voting Doug Hittle Non Voting Rolando Legarreta Sonia Brown Philip Farese Dove Feng Nirupama Lakshminarasimhan Bryan Morris Ghani Ramdani Lucy Armankwah David Ariyo Fred Bauman Alireza Behfar Andrew Braum Jui-Chen Roger Chang Charlie Curcija Christopher Delgado Joe Ferdleman Stephen Kavanaugh Ken-Ichi Kimura Elyse Malherek Gabrielle Powell Brian Rock Ahmed Sleiti Kevin Wood		Visitors Daniel Bacellar Kay Clark Krishnan Gowri Varun Kulkourni Oluwaseyi Oginsola Alejandro Rivas

DISTRIBUTION:

All Members of TC/TG/TRG

ADDITIONAL DISTRIBUTION:

TAC Chairman: Eric Adams, PhD
 TAC Section Head: Michael Bilderbeck
 Research Liaison: Prof. Xudong Yang
 ALI/PDC: Darin W. Nutter, P.E.
 2017 HB Fundamentals: David P. Yuill, P.E.
 Standard Liaison: James Aswegan
 Manager of Standards: Stephanie C. Reinche
 Staff Liaison: Michael R. Vaughn

January 26, 2015
Committee Meeting Minutes
TC 4.1 Load Calculations Data and Procedures
Chicago, IL

1. Meeting called to order by Jim Pegues.
2. Roll Call – Secretary Sun
 - a. 8 of 9 voting members present.
 - b. Quorum present.
3. Introductions
James Dale Aswegan – Standards Liaison
 - a. Std. 183 was reaffirmed in October 2013
 - b. Std. 203 is approved
4. Liaison Reports
 - a. David P. Yuill, Handbook Liaison
 - i. We are doing well as a TC
 - ii. Question: Is it easy to get people to help with handbook?
 - iii. How can we help? With recognition, free publications, any ideas?
 - b. Mike Bilderbeck, Section Head
 - i. Orlando meeting will be near convention center.
 - ii. RAC reviews are inconsistent and may need to go to RAC meeting
 - iii. CEC report: Submitted vs. Accepted are as follows:
 - 117 vs. 64 seminars; 17 vs. 8 workshops; 11vs. 5 forums;
105 vs. 88 conference paper; 56 vs. 48 tech papers
 - iv. Committee raised concern to Mike about CEC
 - v. Wilkins urged TC oversight, for example the LCM was introduced at this meeting but no TC-4.1 programs were accepted. Historically this has been important to ASHRAE for marketing publications.
 - vi. Mike indicated that 72% of programs are from sponsoring TC's, but is this accurate figure or is "sponsorship" only a result of authors "selecting" relevant TC's?
 - Bruning suggested fewer and better tracks with more general topics. One to two "topic specific" tracks seems better
5. Seattle Meeting Minutes Action
 - a. Motion to approve Seattle minutes as submitted: Suzanne LeViseur
 - i. Second: Steve Bruning.
 - ii. Vote 7-0-0, 1 absent
6. Research Subcommittee – Chris Wilkins
 - a. RP-1616 LCM Update
 - i. Project is ready for close out
 - ii. Jim can waive request for paper if voted on by committee

- b. RP-1681 – Low Energy Lighting
 - i. PMS met at this meeting
 - ii. Project is on schedule
 - iii. Technical discussions surrounded the test set ups, which were ultimately ok'd
 - iv. Bob D. Report
 - v. Starting tests in March with report in Atlanta with final tests by Orlando
 - vi. Completing a table for the next HOF should be ok
- c. RTAR 1729 – Non-uniform surface cooling loads.
 - i. Work statement was returned by RAC with comments and we will need to revise and resubmit
 - ii. There was a clerical issue with deliverable section
 - iii. Email ballot in 2-3 months
- d. WS 1742
 - i. Approved with noted comments.
 - ii. Chris Wilkins is working on comments and will move forward for funding
- e. RP-1631 – Countertop Commercial Appliance Emissions
 - i. Rolando Legarreta is TC 4.1 liaison
 - ii. 50% of equipment is tested, and complete testing will be done by summer 2015
 - iii. Deadline of 2016 is no problem
- f. RP-1699 - Update Weather Data
 - i. Sponsored by TC 4.2, Steve Bruning is TC 4.1's liaison.
 - ii. Contractor from Canada is Klimaat, Michael Roth.
 - iii. P.I. was not able to attend this meeting, but presented to PMS remotely. Project is still getting started with setup and data gathering
- g. New Research
 - i. RTAR for vending machine heat load data; some investigation should go into data currently available.
 - ii. RTAR for tall spaces, Bruning will check with TC-4.7. Justin will help out
- h. Research Breakfast meeting:
 - i. RAC wants a "go or no go" time in the Research Plan so there is an understanding of when plug could be pulled on a project
 - ii. PMS responsibilities were emphasized per Section 9.1 of Research Handbook
 - Membership
 - Room Requests
 - Keeping the TC informed
 - Review reports
 - Verify deliverables

7. Programs/Standards Subcommittee Report – Glenn Friedman
 - a. See attached handout for Programs/Standards Subcommittee Meeting. Programs.
 - i. No programs at this meeting.
 - ii. Glenn suggested trying to contact track chairs.
 - b. Other Programs:
 - i. Mobile Apps: Roth to contact other speakers. Chip will not be able to participate but can suggest other manufacturers relative to mobile apps.
 - ii. Workshop on Design Day: Joe Huang has been contacted and is interested.
 - iii. Load Calc Back to Basics. Delay for Orlando
 - iv. BIM and Loads: Hold for St. Louis
 - v. Bronco has dual facades presenter
 - Phase change materials, presenters is also possible
 - International members as presenters is a challenge due to schedule
 - Conference Paper Session may be an issue
 - 2 papers available. Orlando abstract by 3/23/15. Paper by 7/6/15
 - c. New business:
 - Wilkins stated Jeff Haberl is putting together a session on history of load calcs.
A lot of student info. Chris is concerned with technical content.
 - d. Motion for Atlanta Workshop: “Design Day”: Bob Doeffinger
 - i. Discussion: Future Programs
 - Mobile Apps (ATL)
 - Dual Face Design (ORL)
 - Jeff Haberl (ATL)
 - Second: Suzanne LeViseur
 - Vote 7-0-0, 1 absent, CNV.
8. Standards
 - a. Standards SPC-203 Method of Test for Determining Heat Gain of Office Equipment went to public review without comments and unanimous approval by committee will be published in February.
 - i. Glen will push for inclusion into other standards
 - ii. Chip will reach out to SPLS committee
 - iii. Glenn will comment to 90.4.90.1 with T.6.7.3
 - iv. Bruning stated manufacturers have to latch on to requirements (EPA & DOE also)
 - v. Reach out to our standards liaison at ASHRAE
 - b. Standard 183-2007 was reaffirmed to be RA-2014.
9. Handbook Subcommittee – Steve Bruning
 - a. See attached Minutes of the Handbook Subcommittee Meeting with reviewer comments and tables that need updating for 2017.
 - b. Updating tables is most critical and useful to members. Minutes reflect those who will do updates and schedule, some tables are very out of date
 - c. Chapter 17: Chip Burnaby is reviewing some comments
 - d. General improvements list shows assignees for updates
 - e. Andrew Braum to check for lab load info

- f. Glenn Friedman shared High Performance Building Data. Roth will review data
10. TC 4.1 Web Site
- a. Jim Pegues stated the web site is up-to-date.
 - b. Jim asked for suggestions for improvements
11. Old Business – Email Ballots
- a. E-mail Ballot: 8/8/2014. Motion: Approve work statement for research project to update office equipment heat gains data. Vote: 7-0-0-1-CNV (for/against/abstain/absent)
 - b. Email Ballot: 8/8/2014. Motion: Approve for publication the Load Calculation Applications Manual, 2014 edition. Vote: 7-0-0-2-CV (for/against/abstain/absent)
 - c. E-mail Ballot: 12/3/2014. Motion: Approve 1729-WS revised work statement for re-submission to RAC. Vote: 6-0-0-2-CNV (for/against/abstain/absent)
 - d. E-mail Ballot: 12/3/2014. Motion: Approve 1742-WS revised work statement for re-submission to RAC. Vote: 6-0-0-2-CNV (for/against/abstain/absent)
12. New Business
- a. Dan Fisher, Doug Hittle and Suzanne LeViseur will rotate off TC-4.1 in July. Jeff Spitler, Glenn Friedman and Rolando Legarreta will come on in July.
 - b. FAQ's
 - i. We have 5 to review on an annual cycle
 - ii. Jim has reviewed and didn't have any suggested changes, except some updates to referenced documents.
 - iii. Wilkins moved to approve as updated by Pegues
 - Second: Suzanne LeViseur
 - Vote: 7-0-0, 1 absent, CNV
 - c. Stephen Roth: "Usage Case Development", member of SGPC 20 and wants to kick off effort
 - i. Asked if some young engineers in our offices could participate?
 - ii. Sun asked if simpler explanation is available?
 - Per Roth, there is an article explaining things in more layman's terms
 - Wilkins asked if anything came from Denver forum? No one seemed to know.
13. Motion to Adjourn: Wilkins honorary for Hittle
- Second: Suzanne LeViseur
 - Vote: 8-0-0, 1 absent, CV

Attachments:

1. PMS Report RP-1681
2. Handbook Subcommittee Report
3. Program/Standards Subcommittee Report
4. Chicago Agenda
5. Sign-In Sheet

**Minutes TC4.1 – RP-1681 PMS Meeting
January 25, 2015
Chicago
Low Energy LED Lighting
Heat Gain Distribution in Buildings**

PMS

Robert Doeffinger, Chair
Glenn Friedman
Som Shrestha
Elyse Mulherek

Ran Liu, Ph.D, Iowa Energy Center principal investigator.
Joined by Joe Zhou, Ph.D of the Iowa Energy Center.

Dr. Liu described the guarded space, air flow measuring device, net radiometer, and other equipment.

- Dr. Liu presented the 14 LED fixture types to be tested: 2 high bay, 6 troffers, 2 pendants, 1 downlight, 2 high efficiency fixtures, 1 retrofit troffer.
- The Committee accepted the PI's selection of light fixtures.
- Schedule: Testing will start in March 2015 with preliminary findings for summer Atlanta meeting, with full testing results by St. Louis meeting.

Attached: Sign-In Sheet

RP. 1681

Sign in Sheet
Chicago

1/25/2015

2:00 PM

Bob Doeffinger	ZMM, Inc	acd@zmm.com
Chris Wilkins	CRB Engineers	chris.wilkins@crbusa.com
Rachel Spitzer	Oklahoma State University	rachel.spitzer@okstate.edu
JIM FEGUES	CARRISE CORPORATION	james.fegues@carriose.com
Glenn Friedman	Taylor Engineering	gfriedman@taylor-engineering.com
Ran Liu	Iowa Energy Center	rliu@iastate.edu
Jingjuan Dove Feng	Taylor Engineering	dfeng@taylor-engineering.com
Elyse Malheirek	Widt Group	elysem@wtgi.com

Xiaohui "Joe" Zhou	Iowa Energy Center	xhzhou@iastate.edu
Steve Bruning	Newcomb Boyd	sbruning@newcomb- boyd.com

Fred Bauman	UC Berkeley	Fbauman@berkeley.edu
Sam Shrestha	ORNL	shresthas@ornl.gov



® E American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc.

TC4.1 Load Calculation Data & Procedures

Chicago, Illinois

January 24-28, 2015

Handbook Subcommittee Report

Sunday, January 25, 3:00 PM to 4:00 PM

Palmer House Hilton, Medinah Room

1. **Handbook Committee Liaison Comments:** David Yuill, Liaison to TC4.1.

2. **Schedule for 2017 HoF Chapters:**
 - 2015 January – Confirm Improvements targeted – assign revisers
 - 2015 June – Rough draft overall chapters
 - 2016 January – Full draft overall chapters reviewed by Handbook subcommittee
 - 2016 April – Deadline for new research results to be incorporated in chapters
 - 2016 June – Final chapters approved by full TC**
 - 2016 July 12 – Chapter 17 submitted to Yuill/ASHRAE
 - 2016 July 19 – Chapter 18 submitted to Yuill/ASHRAE
 - 2017 June – HoF Published

3. **Chapter 17 Residential Loads:**
 - a. Review from Jaya Mukhopadhyay – Chip Barnaby will evaluate.

4. **Chapter 18 Non-Residential Loads:**
 - a. See attached list of Tables to be revised

 - b. See attached list of revisions planned and assignments

 - c. Many planned revisions to Tables require completion of research projects so those should be monitored closely.

 - d. Revisions not pending research results should be sent to Steve Bruning prior to the June meeting to assemble 1st draft.

 - e. Fred Bauman will check with LBL on availability of measured lab equipment loads and point of contact. Chris Wilkins will follow up with them.

- f. Glen Friedman forwarded info on the ASHRAE High Performance Buildings conference which included data on plug load and occupancy diversity factors. Steve Bruning will follow up with ASHRAE to obtain copy of presentations.
- g. Vending machine loads should be investigated and addressed in the Miscellaneous Office Equipment Table. Chip Barnaby will identify chair of SPC-32 preparing vending machine standards for contact.
- h. Steve Bruning will forward compilation of chapter variables compiled by Stephen Roth to Jim Pegues.

HOF 2013 CHAPTER 18 TABLES NEEDING UPDATES FOR 2017					
Table		<u>1/26/2015</u>		Update By:	Who
1	2013	Representative Rates at Which Heat and Moisture Are Given Off by Human Beings in Different States of Activity	from Table 4 in Chapter 9	Chapter 9	Bruning
2	2010	Lighting Power Densities Using Space-by-Space Method	from 90.1-2010	90.1-2013	Bruning
3	2006	<u>Lighting Heat Gain Parameters for Typical Operating Conditions - ADD LED</u>	from RP 1282	<u>RP-1681</u>	<u>Doeffinger</u>
4	2010	Minimum Nominal Full-Load Efficiency for 60 HZ NEMA General Purpose Electric Motors (Subtype I) Rated 600 Volts or Less (Random Wound)*	from 90.1-2010	90.1-2013	Bruning
5A	2009	<u>Recommended Rates of Radiant and Convective Heat Gain from Unhooded Electric Appliances During Idle (Ready-to-Cook) Conditions</u>	from RP 1362	<u>RP-1631</u>	<u>Legaretta</u>
5B	2009	Recommended Rates of Radiant Heat Gain from Hooded Electric Appliances During Idle (Ready-to-Cook) Conditions	from RP 1362	none	
5C	2009	Recommended Rates of Radiant Heat Gain from Hooded Gas Appliances During Idle (Ready-to-Cook) Conditions	from RP 1362	none	
5D	2009	Recommended Rates of Radiant Heat Gain from Hooded Solid Fuel Appliances During Idle (Ready-to-Cook) Conditions	from RP 1362	none	
5E	2009	Recommended Rates of Radiant and Convective Heat Gain from Warewashing Equipment During Idle (Standby) or Washing Conditions	from RP 1362	none	
6	1999	<u>Recommended Heat Gain from Typical Medical Equipment</u>	from RP 1055	<u>TC9.6</u>	<u>Doeffinger</u>
7	1999	<u>Recommended Heat Gain from Typical Laboratory Equipment</u>	from RP 1055	<u>TC9.11</u>	<u>Wilkins</u>
8	2008	<u>Recommended Heat Gain from Typical Computer Equipment</u>	from RP 1482	<u>RP-1742</u>	<u>Wilkins</u>
9	2008	<u>Recommended Heat Gain from Typical Laser Printers and Copiers</u>	from RP 1482	<u>RP-1742</u>	<u>Wilkins</u>
10	?	<u>Recommended Heat Gain from Miscellaneous Office Equipment</u>	?		<u>Bruning</u>
11	2011	<u>Recommended Load Factors for Various Types of Offices</u>	Wilkins/Hosni Journal article	<u>Kaiser paper?</u>	<u>Sun</u>
12	2011	<u>Recommended Diversity Factors for Office Equipment</u>	Wilkins/Hosni Journal article	<u>Kaiser paper?</u>	<u>Sun</u>
13	2003	Single-Layer Glazing Data Produced by WINDOW 5.2	Window 5.2	current ver.	Bruning
14	2007	Recommended Radiative/Convective Splits for Internal Heat Gains	Nigusse 2007	none	
15	2000	<u>Solar Absorptance Values of Various Surfaces</u>		TC4.4	Bruning
16	1999	<u>Wall Conduction Time Series (CTS)</u>	from RP 875, using Hbfort	<u>use LCM</u>	<u>Bruning</u>
17	1999	<u>Roof Conduction Time Series (CTS)</u>	from RP 875, using Hbfort	<u>use LCM</u>	<u>Bruning</u>
18	1999	<u>Thermal Properties and Code Numbers of Layers Used in Wall and Roof Descriptions for Tables 16 and 17</u>	from RP 875, using Hbfort	<u>use LCM</u>	<u>Bruning</u>
19	1999	<u>Representative Nonsolar RTS Values for Light to Heavy Construction</u>	from RP 875, using Hbfort	<u>use LCM</u>	<u>Bruning</u>
20	1999	<u>Representative Solar RTS Values for Light to Heavy Construction</u>	from RP 875, using Hbfort	<u>use LCM</u>	<u>Bruning</u>
21	1999	<u>RTS Representative Zone Construction for Tables 19 and 20</u>	from RP 875, using Hbfort	<u>use LCM</u>	<u>Bruning</u>
22	1969	<u>Average U-Factor for Basement Walls with Uniform Insulation</u>		?	<u>Spitler/Fisher</u>
23	1969	<u>Average U-Factor for Basement Floors</u>		?	<u>Spitler/Fisher</u>
24	1969	<u>Heat Loss Coefficient F_p of Slab Floor Construction</u>		?	<u>Spitler/Fisher</u>
25	2013	Common Sizing Calculations in Other Chapters	references other Handbook chapters equations		Bruning check
26	2013	Summary of RTS Load Calculation Procedures		none	
27	2013	<u>Monthly/Hourly Design Temperatures (5% Conditions) for Atlanta, GA</u>	<u>part of updated Example</u>	<u>RP-1699</u>	<u>Bruning</u>
28	2013	<u>Cooling Load Component: Lighting</u>	<u>part of updated Example</u>	<u>update to include LEDs</u>	<u>Bruning</u>
29A	2013	<u>Wall Component of Solar Irradiance</u>	<u>part of updated Example</u>	<u>RP-1699</u>	<u>Bruning</u>
29B	2013	Wall Component of Sol-Air Temperatures, Heat Input, Heat Gain, Cooling Load	part of updated	as required	Bruning
30	2013	Window Component of Heat Gain (No Blinds or Overhang)	part of updated Example	as required	Bruning
31	2013	Window Component of Cooling Load (No Blinds or Overhang)	part of updated Example	as required	Bruning
32	2013	Window Component of Cooling Load (With Blinds, No Overhang)	part of updated Example	as required	Bruning

33	2013	Window Component of Cooling Load (With Blinds and Overhang)	part of updated Example	as required	Bruning
34	2013	Single-Room Example Cooling Load (July 3:00 pm) for ASHRAE Example Office Building, Atlanta, GA	part of updated Example	as required	Bruning
35	2013	Single-Room Example Peak Cooling Load (Sept. 5:00 pm) for ASHRAE Example Office Building, Atlanta, GA	part of updated Example	as required	Bruning
36	2013	Block Load Example: Envelope Area Summary	part of updated Example	as required	Bruning
37	2013	Block Load Example—First Floor Loads for ASHRAE Example Office Building, Atlanta, GA	part of updated Example	as required	Bruning
38	2013	Block Load Example—Second Floor Loads for ASHRAE Example Office Building, Atlanta, GA	part of updated Example	as required	Bruning
39	2013	Block Load Example—Overall Building Loads for ASHRAE Example Office Building, Atlanta, GA	part of updated Example	as required	Bruning

		TC4.1 Handbook Subcommittee 2013 HOF Chapter 18
		Nonresidential Cooling and Heating Load Calculations
<u>Reviser:</u>		<u>Possible Improvements List</u>
		January 26, 2015
Doeffinger	G-1	Improve quality of existing Figures.
Pegues	G-2	Add more Figures – “picture is worth 1000 words”
Pegues	G-3	Add complete list of variables with definitions at end of chapter.
Pegues	G-4	Incorporate text clarifications from Pegues and Hollman reviews
Doeffinger	I-1	Add LED data
Doeffinger	I-2	Table on Medical Equipment – may be updated by RP-1343 (TC 9.6).
Wilkins Bauman	I-3	Table on Laboratory Equipment – TC 9.10 had research project on plan to obtain heat gain data. Need to determine if work statement written and offer to participate in PMS to obtain data for load calculations.
Wilkins	I-4	Update Plug Load data
Sun	I-5	Update Tables on Load Densities for Office
Bruning	P-1	Provide better data on appropriate absorptivity and emissivity values for common construction materials, along with illustration of sensitivity of result to those inputs. Check with TC4.4 on data they plan to publish. Reference accordingly.
Fisher Bruning	P-2	Address impact inside convection coefficient assumptions has on load calculations. Use research results from 1416-RP.
Bruning	P-3	Identify additional walls and roofs commonly used beyond those in chapter
Bruning	P-4	Revise CTS tables using LCM spreadsheets
Bruning	P-5	Revise RTS tables using LCM spreadsheets
Bruning	E-1	Include both perimeter and interior spaces as single room examples.
Bruning	E-2	Update based on new data
Bruning	E-3	Add example of impact of parameter change on load illustrating sustainability

TC 4.1 Programs/Standards Subcommittee Meeting Minutes
Chicago, Sunday, January 25, 2015

Glenn Friedman, Program Chair, Salon 3 (3) Headquarters Office

PROGRAMS

1. Current Programs
 - a. Chicago
 - i. None
 1. Jim Pegues: We might contact the track chair(s) and work with them on our programs.
Track 2: HVAC&R Fundamentals and Applications
Track Chair: Ann Peratt / Cynthia Moreno
Email: agregg.ksu@gmail.com / cindym@tmmechanical.com
Fundamental information and applications of fundamentals related to all aspects of HVAC&R are welcome. This can range from fundamental psychrometrics to combustion, system and envelope fundamentals and beyond.
2. Future Programs
 - a. Seminar and Forum Proposals Due Date February 9, 2015, [delay for Orlando]
 - i. #1 - Mobile apps for loads and more. Stephen and ~~Chip~~[Nick Long, Enrel. Talk to 7.3 to co-sponsor.](#) Loads and energy audits and maintenance.
 - ii. #2 – Workshop – Joe Huang and Steve Bruning, Design day reanalysis. Joe feels we have enough data to analyze a better way to figure out design days. Co-sponsored with 4.2. Data gathering. 4.2 has chosen not to run with this. Joe Huang, White Box Technologies.
 - iii. Back to Basics: The Science, Application and Art of Load Calculations. Applicable to young engineers. Track 2: Fundamentals and Applications, Track Chair: Dan Fisher – Hold for Chicago.
 1. Science: New ASHRAE Load Calculations User's Manual and the current overview of load calculations, by Jeff Spittle
 2. Application: Zoning and load calculation basics, what do you do early in design when you don't have all the answers, by Larry Sun
 3. Art: Case studies, horror stories, what to watch for, and odd-ball cases, by Steve Bruning
 - iv. BIM and Load Calculations Seminar Update [delay for St Louis], *Roth, Bruning, Wilkins*. This will take time and work so maybe for beyond Atlanta. Work with MTG- BIM (MTG=Multidisciplinary Task Group). John Kennedy alleges there are improvements. Discuss what value it has in BIM to Load. Is it working? Should this "BIM in Practice" be an MTG BIM seminar rather than a TC4.1 seminar (Chris Wilkins)
 - v. Dual facades by Branco is a possibility. Branco has a PhD dissertation on this. He is ready to come. Branco has other papers and people. Berkeley professor on the influence of furniture on cooling loads. Plan for this for papers in St. Louis or seminar in Orlando.
 - vi. Jeff Haberl is doing a session on the history of load calculations. Glenn to coordinate with him. He may want another speaker for Atlanta. Justin volunteered to help.
 - ~~vii.~~ Motion to proceed i, ii, v and vi with 7-0-0 CNV
 - b. Atlanta, June 27-July 1, 2015
 - c. Orlando, Jan 23-27, 2016

TC 4.1 Programs/Standards Subcommittee Meeting Minutes
Chicago, Sunday, January 25, 2015

- d. St. Louis, Jun 25-29, 2016
- 3. Future Program Ideas
 - a. Future Seminar Session Proposals
 - i. Atrium and large space load calculations, empirical case studies
 - ii. Ventilation and infiltration
 - iii. How Load Calculations Interact with Other ASHRAE Chapters
 - Weather
 - Infiltration
 - Building skin color
 - Ventilation
 - Fenestration, dynamic windows

STANDARDS

- 1. Standard SPC-203 Method of Test for Determining Heat Gain of Office Equipment Used In Buildings
 - a. SPLS granted a waiver of membership balance so we do not need Producers.
 - b. Advisory Public Review ended August 6, 2013 and there were no comments.
 - c. Completed public review draft with minor edits required for accuracy of test equipment. Voted for submission to SPLS for Public Review.
 - d. Public review complete with no comments.
 - e. SPLS submission complete.
 - f. Due for publication in February 2015. Need to add to Handbook Load Calculation chapters.
 - g. Standards, Glenn to talk to Chip about who go to for these committees and their standards liaisons.
 - i. 90.1
 - ii. 90.2
 - iii. 90.4
 - iv. 189.1
 - v. 100
 - vi. 209
 - vii. ASHRAE DC office liaison from to get in into Energy Star
 - f.viii.

Formatted

TR 4.1

Sign in sheet

1/26/2015

Xea

m/c/c			
VM	Bob Doeffinger	ZMM, Inc	rcd@zmm.com
NVM	Chip Barnaby		chipbarnaby@gmail.com
NVM	Glenn Friedman		gfriedman@taylor-engineering.com
VM	Steve Bruning		sbruning@newcomb-boyd.com
NVM	BRAVKO TODOROVIC		todorob@eunet.rs
VM	DAN FISHER		dfisher@okstate.edu
CM	Justin Wong		justin@teammatalyst.com.au
NVM	Stephen Roth	Carmel	sroth@carmelsoft.com
VM	JIM PEGUES	CARMEL	James.F.Pegues@Carmel.UT.com
VM	SUZANNE LEVISGUR	HADDAD ENG.	steviseu@haddadeng.com
VM	Chris Wilkins	CRB Engineers	chris.wilkins@crbusa.com
	Oluwaseyi Ogunsoola		oogunsola@ou.edu
	Kay Clark		ccclark@bpa.gov
	Varun Kulkarni	ADVANTIX	VARUN@advantixsystems.com
CM	Russell Taylor	United Technologies	taylorrd@utrc.utz.com
	DANIEL BACELLAR	UNIVERSITY OF MARYLAND	dfbace@umd.edu
VM	Som Shrestha	ORNL	shresthas@ornl.gov
VM	Larry Sun	Halse	
CM	JEFF SPITLER	OSU	spitler@okstate.edu
Visitor	KRISHNANI GOWRI	Autodesk	krishnan.gowri@autodesk.com
Guest	Alejandro Rivas	OU	alejandro.rivas@ou.edu

