



TC/TG/TRG No. TC 4.2 DATE: Jan. 17th, 2015

TC/TG/TRG TITLE: Climatic Information

DATE OF MEETING: July 1st, 2014 LOCATION: Seattle, WA

MEMBERS PRESENT	MEMBERS ABSENT		EX/OFFICIO MEMBERS AND ADDITIONAL ATTENDEES
Dru Crawley (Chair, Stnds ,VM) Juan-Carlos Baltazar (Vice Chair,CM) Joe Huang (Sec,Prog,VM) Steve Cornick (Res, VM) Didier Thevenard (Web,VM) Neal Lott (Hdbk,CM) Norm Bourassa (VM) Chip Barnaby (VM) Larry Degelman (VM) Dave Westberg (VM) Philip Jarrett (VM) Don Colliver (CM) Michael Roth (CM)	John Kennedy (VM) Chuck Khuen (VM) Joshua New (CM) Evyatar Erell (VNQ) Geoffrey Levermore (VNQ)	Michelle Contri (PCM) Xin Qiu (PCM) Paulo Velasco (PCM) Anthony Arguez (CM) William Bahnfleth (CM) Constantinos Balaras (CM) Bryan Becker (CM) Mahabir Bandari (CM) J Patrick Carpenter (CM) Jui-Chen Roger (CM) Reda Djebbar (CM) Brian Fricke (CM) Chris Gueymard (CM) Kenneth Hubbard (CM) Achilles Karagiozis (CM) John Keller (CM) Clayton Lampman (CM) Linda Lawrie (CM) Robert Lucas (CM) Stuart Malkin (CM) Robert Morris (CM) Ulrike Passe (CM) Richard Perez (CM) Ronald Petersen (CM) Thomas Stoffel (CM) Charles Whitlock (CM)	Michael R Bilderbeck (TAC SH) Jibo Sanyal (guest) Jim Pegues (guest) Serpil Yilmaz (guest) Charlie Curcija (guest)

TAC CHAIR	Walter Grondzik	PROF DEV COMM (ALI)	Hugh McMillan
TAC SECTION HEAD	Michael Bilderbeck	STANDARDS LIAISON	James Aswegan
RAC RESEARCH LIAISON	Xudong Yang	STAFF LIAISON (RESEARCH/TECH)	Mike Vaughn
HANDBOOK LIAISON	Larry Akers		

Abbreviations: VM = Voting Member, CM = Corresponding Member, NQ= Member Non-quorum

ASHRAE TC/TG/TRG ACTIVITIES SHEET**DATE:** Current as of 1st July 2014**TC/TG/TRG NO.:** TC 4.2**TC/TG/TRG TITLE:** Climatic Information**CHAIR:** Dru Crawley**VICE CHAIR:** Juan-Carlos Baltazar**SECRETARY:** Joe Huang**TC/TG/TRG MEETING SCHEDULE**

Location-Past 12 Months	Date	Location-Planned Next 12 Months	Date
Seattle, WA	2014-07-01	Chicago, IL	2015-01-27
New York, NY	2014-01-21	Atlanta, GA	2015-06-30
Denver, CO	2013-06-25	Orlando, FL	2016-01-26

TC/TG/TRG SUBCOMMITTEES

Function	Chairman
Handbook	Neal Lott
Research	Steve Cornick
Standards	Drury Crawley
Program	Joe Huang
Honours	Joe Huang

RESEARCH PROJECTS-CURRENT

Project Title	Contractor	Monitoring Comm.	Report Made At Meeting
1561-RP Procedures to Adjust Observed Climatic Data for Regional or Microclimatic Variations	Novus Environmental Inc.	Steve Cornick (Chair), Robert Morris, Anthony Arguez, Dru Crawley, Hartwig Kunzel	No cost extension granted until October 2014 so that contractor is forced to finish final report.
1699-WS Update Climatic Design Data in Chapter 14 of the 2017 Handbook of Fundamentals	Klimaat	Neal Lott (Chair), Philip Jarrett, Steve Cornick, Larry Degelman, Dru Crawley, Anthony Arguez, Steve Bruning (TC 4.1)	Contract was awarded for period June 1, 2014 through May 31, 2016. First PMS meeting held in Seattle June 29, 2014.

LONG RANGE RESEARCH PLAN

Rank Title	RTAR			Work Statement			RAC Approval for bidding
	Writ-ten	TC Approved	Subm'd to RAC	Writ-ten	TC Approved	Subm'd to RAC	
1700-RTAR Moisture Design Reference Years for	Yes	Yes	Yes	Yes	No	Yes	WS conditionally approved by RAC in 2014 and needs

Hygrothermal Analysis and Design of Buildings (1325-RP Update)							only RL approval to proceed , but placed on hold until SSPC 160 give some indication as to the disposition of previous 1325-RP.
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HANDBOOK RESPONSIBILITIES

Year	Volume	Chapter Title	No.	Deadline	Handbook Sub. Liaison
2016	HOF	Climatic Design Information	14	Feb. 2016	James Aswegan

STANDARDS ACTIVITIES – List and Describe Subjects

TC 4.2 is the cognizant TC for Std. 169 *Weather Data for ASHRAE Building Standards*. The TC 4.2 HOF data has been incorporated into this proposed standard. Other coordination will be undertaken as needed such as with SSPC 169.

TECHNICAL PAPERS from Sponsored Research-Title, when presented (past 3 yrs. present & planned)

- Temperature Trends for Locations Listed in the Tables of Climatic Design Conditions in the 2013 Handbook of Fundamentals (RP-1613) (SE-14-011, Jun 2014)
- Development of 3012 IWEC2 Weather Files for International Locations (RP-1477) (NY-14-029, Jan 2014)
- Revising ASHRAE Climatic Data for Design and Standards, Part 1: Overview and Data (RP-1613) (DE-13-016, June 2013)
- Revising ASHRAE Climatic Data for Design and Standards, Part 2: Clear-Sky Solar Radiation Model (RP-1613) (DE-13-017, June 2013)

TC/TG Sponsored Transactions-Title, when presented (past 3 yrs. present & planned)

Technical Paper Session 5: Improvements to Climatic Data for ASHRAE Calculations – Denver CO, June 2013.

TC/TG Sponsored Seminars-Title when presented (past 3 yrs. present & planned)

- Seminar 65 - Impacts of Environmental Change on Building Design and Their HVAC Systems – San Antonio, TX, June 2012
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TC/TG Sponsored Forums-Title, when presented (past 3 yrs. present & planned)**JOURNAL PUBLICATIONS, when published (past 3 yrs. present & planned)****Attachments:**

Schedule and Agenda

Minutes

Action Items

TC/TG Activity Feedback Form

Research Subcommittee Agenda

Program Subcommittee Minutes

1699-RP PMS/Handbook Subcommittee Minutes

**2014 Annual Meeting Schedule and Agenda, Seattle, Washington
TC 4.2 (Climatic Information) and Related Activities**

Time/Date	Meeting/Event	Room (Floor, Hotel)
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Saturday, 28 June 2014

No activities planned

Sunday, 29 June 2014

1:00 p.m. - 2:30 p.m.	1699-RP PES, <i>“Update Climatic Design Data in Chapter 14 of the 2017 Handbook of Fundamentals”</i>	Kirkland (3rd, Sheraton)
2:30 p.m. - 3:30 p.m.	TC 4.2 Program subcommittee	Kirkland (3rd, Sheraton)
3:30 p.m. - 5:00 p.m.	1561-RP PMS, <i>“Procedures to Adjust Observed Climatic Data for Regional or Mesoscale Climatic Variations”</i>	Kirkland (3rd, Sheraton)

Monday, 30 June 2014

10:00 a.m. - 12:00 p.m.	Weather Data SSPC 169, <i>Climatic Data for Building Design Standards</i>	Diamond A (1st, Sheraton)
4:15 p.m. - 6:00 p.m.	TC 4.2 Research Subcommittee Meeting	Willow A (2nd, Sheraton)

Tuesday, 1 July 2014

1:00 p.m. to 3:30 p.m.	TC 4.2, Climatic Information, Full Committee Meeting	Juniper (2nd, Sheraton)
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Wednesday, 2 July 2014

11:00 a.m. to 12:30 p.m.	Conference Paper Session18 Fundamentally Important Design Issues Sponsor: 04.02 Climatic Information, 04.03 Ventilation Requirements and Infiltration	608 (6th, WSCC)
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AGENDA, ASHRAE TC 4.2 Climatic Information

1:00 – 3:30 PM, Tuesday, 1 July 2014

Juniper, 2nd Floor, Sheraton, Seattle, Washington

Scope: TC 4.2 is concerned with identification, analysis and tabulation of climatic data for use in analysis and design of heating, refrigeration, ventilation and air-conditioning systems. Promotion of effective use of weather information in these applications is also included.

1:00 PM	<ul style="list-style-type: none"> Call to order Roll call Introductions Approval of agenda Approval of minutes of New York meeting (January 2014) Report from the Chair/Announcements Introduction of liaisons (liaison announcements/requests) 	<p>Crawley Huang</p>
1:15 PM	Membership Roster Rollovers (for July 2014)	Crawley
1:20 PM	Review of Action Items and Status	Baltazar
1:35 PM	<ul style="list-style-type: none"> Research Reports on status of current, future and completed research projects: <ul style="list-style-type: none"> ● 1561-RP (Mesoscale modeling of climatic data) ● 1699-RP, Update Climatic Design Data in Chapter 14 of the 2017 Handbook - Fundamentals ● 1610-WS Clear sky transposition model ● 1700-WS A Global Database of Moisture Design Reference Years for Hygrothermal Analysis and Design of Buildings: 1325-RP Update (Steve Cornick) ● Long-term research plan ● Other potential research projects 	Cornick
2:15 PM	<ul style="list-style-type: none"> Handbook <ul style="list-style-type: none"> ● 1699-RP Update of Climatic Data for 2017 Handbook - Fundamentals ● Revisions and errata 	Lott
2:30 PM	<ul style="list-style-type: none"> Program <ul style="list-style-type: none"> ● Seattle, June 28-July 2, 2014 ● Chicago, January 24-28, 2015 ● Atlanta, June 27-July 1, 2015 ● Future conferences 	Huang
2:45 PM	<ul style="list-style-type: none"> Standards Report SSPC 169 Climatic Data for Building Design Standards 	Crawley
3:00 PM	Old business	Crawley
3:10 PM	New business	
3:30 PM	Adjournment	

Next Meeting: Chicago, Illinois, Tuesday 27 January 2015

Minutes of ASHRAE TC 4.2 Climatic Information meeting

1:00 – 3:30 PM, Tuesday, 21 January 2014

- 1:05 PM **Call to order** **Crawley**
Chair Crawley opened the meeting
- Roll call** **Crawley**
Introductions
A voting quorum (8 of 11 voting members) was present at start of meeting, with a 9th member arriving late.
- Approval of agenda
Voting: Unanimous (9-0-0)
- Approval of minutes of New York meeting (January 2014)
Voting: Unanimous (9-0-0). However, Didier pointed out there were still some unanswered questions and missing items. Chair Crawley decided that the minutes will need to be revised before being accepted by letter ballot.
- Report from the Chair/Announcements**
- Introduction of liaisons (liaison announcements/requests)
No liaison was present so agenda was moved to new item pending later arrival of any liaison.
- Membership Roster Rollovers (for July 2014) **Crawley**
Chair Crawley went through the roster, and announced that Juan-Carlos will be rolling on, Larry Degelman will be rolling on, and Joshua New will be rolling on.
- Review of Action Items and Status **Crawley**
Chair Crawley reviewed information that was presented at the Chair's breakfast which he was unable to attend. Dru summarized the contents of the 40-page handout, and read through the announcements and findings.
- 1:10 PM **Research** **Cornick**
- Reports on status of current, future and completed research projects:
- 1561-RP (Mesoscale modeling of climatic data)
PMS meeting was held on Sunday Jun. 29th . Cornick said he was very pleased with the results. PMS proposed a NCX, which the contractor wanted only until October so that they would be forced to finish the final report.
- Action Item :** *Cornick moved that Novus be granted a NCX through October 2014. Motion was approved 7-0-0 CNV.*
- 1699-WS (Update Climatic Design Data in Chapter 14 of the 2017 Handbook - Fundamentals) *PMS Chair Neal Lott summarized the status of this project that had their first PMS meeting on Sunday. It is very early in the project, and the first order of business was to identify all the new variables for addition to the tables, such as all sky radiation, etc., although no decisions have been made so far. Degree days will*

also be added, which would make the work of Standard 169 easier. (please see combined 1699-PMS and HOF SC meeting minutes in Appendix A for details).

- 1610 WS (Development of a Transposition Model for Clear-Sky Solar Irradiance)
It was already decided at the previous meeting in New York that this Work Statement should be dropped as unnecessary
- 1700-WS (A Global Database of Moisture Design Reference Years for Hygrothermal Analysis and Design of Buildings)
The WS has been placed on hold since Jan. 2014 until it has been determined how the hygrothermal data developed in the previous 1325-RP, i.e., the MDRY's, have actually been incorporated into Standard 160 if at all.

Action item: *Cornick will continue to act as the liaison between the TC and SSPC 160 and get more indication of their use of what was produced in 1325-RP.*

- **Long-Term Research Plan**
The Long-Term Research Plan will be continuously updated as required
- **Other Potential Research Projects**
 - a) *Barnaby said that neither he nor Gueymard have done any work on developing an RTAR on sky temperatures*
 - b) *Huang summarized the status of a RTAR on the evaluation of climate reanalysis data which was first circulated in January about which he received subsequently a number of comments and suggestions. Huang then presented a revised draft and described how the comments have been incorporated.*

Action Item: *Huang moved that the TC approve the draft RTAR for submittal to RAC. Motion was approved 7-0-0 CNV.*

1:40 PM

Handbook

Lott

The Handbook SC meeting was combined with the 1699-RP PMS meeting, which was already reported earlier at this meeting (please see earlier in minutes or combined 1699-PMS and HOF SC meeting minutes in Appendix A for details).

1:45 PM

Program

Huang

Huang gave a brief summary of the program at this conference, and the plans for the next conference in Chicago (see Appendix B for more detailed minutes from SC meeting). There were two program ideas submitted for Seattle, a seminar on “Applications of Weather Statistics”, with presentations on Standard 169, online weather data, and weather data trending, and . Unfortunately, both program ideas were rejected by CEC. Consequently, the only TC 4.2 presence in Seattle consisted of a technical paper by Thevenard on temperature trends for locations in the HOF tables and a conference paper by Huang on an evaluation of ASHRAE’s climatic design conditions.

The program subcommittee met brief on Sunday afternoon, and came up with two program ideas for Chicago:

- a) “New Weather Data Source and Applications, Just What the Doctor Ordered”, with presentations by Crawley on Standard 169, ORNL on web-based weather data,

Jarrett on Environment Canada's Climate Data and Products, and possibly Khuen from Weather Analytics (this is actually a repackaging of a program item rejected for the previous two conferences)

- b) "Standard procedures for filling missing climatic data gaps for use in building performance monitoring and analysis", with three papers by Prof. Li Song and students from 1413-RP.

1:45 PM Standards **Crawley**

Chair Crawley wanted Cornick to give a report of Standard 169, but since Cornick was temporarily out of the room, this item was tabled until Cornick returns (see later under New Business).

1:45 PM Old business **from floor**

None

2:00 PM Standards **Cornick**

Cornick, having returned to the meeting, gave an update on Standard 169, which was published and made available at the New York conference. The Standards committee met again in Seattle. Westberg has provided more degree day data, and Cornick is working on the Climate Zone boundaries. The work is on track, and since 1699-RP will now be generating the degree-day values, this will make it easier for future updates of Standard 169. By merging stations into counties, the tables will be shortened by 8 pages, which John Hogan of Standard 90.1 thought was a good idea. The data will be electronic and appear on the ASHRAE web site.

Cornick said he wanted to change the definition of the Climate Zones. It's currently using degree days and precipitation, but Cornick would like to move away from Koeppen to something like wet-bulb temperature. It's also not clear why precipitation is being used at all to define climate regions.

2:10 PM New Business **from floor**

Guest Jibo Sanyal gave a presentation of work being done by ORNL on analyzing bioclimatic zones and how they may shift with climate change combining GCMs and GIS.

2:36 PM **Liaison Announcements** **from floor**

Section 4 Research Liaison Mike Bilberbeck arrived and asked the TC if there are any problems. Crawley mentioned that the roster has to be changed because there are two voting members from the same organization (Larry Degelman and Juan Carlos Baltazar). Mike mentioned that a program item slipped through at this conference that was a commercial sales pitch, which was a mistake. Mike also asked what the TC feels about extending the non-commercialism policy to the TC level. Everyone who expressed an opinion said they do not think there's such a need.

2:40 PM Adjournment

Meeting was adjourned.
Voting: Unanimous (9-0-0)

Minutes prepared by Joe Huang, TC 4.2 Secretary

ASHRAE TC 4.2 Climatic Information TC 4.2 Action Item Summary

Seattle (June 2015)

<i>Item</i>	<i>Who</i>	<i>Status</i>
Cornick moved that contractor for RP-1561 be granted a NCX through October 2014.	Cornick	Motion was approved 7-0-0 CNV
Cornick will continue to act as the liaison between the TC and SSPC 160 and get more indication of their use of what was produced in 1325-RP.	Cornick	N/A
Huang moved that the TC approve the draft RTAR on evaluation of reanalysis data for submittal to RAC.	Huang	Motion was approved 7-0-0 CNV.

TC/TG/TRG Activity Feedback Form

Please provide feedback on your TC/TG/TRG 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.

PLEASE DO NOT LEAVE NUMERIC CELLS EMPTY. ENTER 0 IN CELLS IF THERE IS NO COUNT.

TC#			Committee Name:									
			Chair:	Dru Crawley								
Meeting was Held (City)	Seattle, WA		(Day)	Tuesday	(Date)	7/1/2014						
Membership				Quorum Established (Yes/No)								
				Number Present	Remote Participants	Total on Committee						
Voting Members (excluding Non-Quorum Members)				9	0	11						
Non-Quorum Members				0	0	2						
Corresponding Members				4	0	28						
Provisional Members				0	0	3						
Visitors/Guests				0	0	4						
# members/guests who are also YEA members				0	0	0						
Handbook Responsibilities				Standards Responsibilities								
Volume and Chapter (i.e. A17 Printing Plants)				Standards Number (i.e. SPC 178, Std 90.1, Gdl 2)								
F14				SPC 169								
Total Number of Chapters				1	Total Number of Standards		1					
# Chapters voted out this meeting				0	# Standards recommended		0					
Special Publications (last six months)				0	Title:							
Program Activities (For This Meeting)												
Total # of Forums			Total # of Technical Paper Sessions			Total # of Conference Paper Sessions			Total # of Seminars			
Submitted*	Sponsor	Co-sponsor	Submitted*	Sponsor	Co-Sponsor	Submitted*	Sponsor	Co-Sponsor	Submitted*	Sponsor	Co-Sponsor	
0	0	0	1	0	0	0	0	0	1	0	0	
Current Research Activities (active)				FAQ Responsibilities								
# of active RTARs				1				Total # of FAQ's		4		
# of active Workstatements				1				# FAQs updated this meeting		0		
# of active TRPs				0				FAQ IDs				
# of active RPs				0								
Total # of Active Projects				0				TC Website				
Problems getting RTAR/WS approved?								TC has a website (yes/no)		YES		
								Website Up-to-date? (Yes/No)		YES		
TC Management				(Yes/No)				Website is on the ASHRAE Server (Yes or No)		YES		
Minutes completed on Time?				NO				Link to website from www.ashrae.org/standards-research-technology/technical-committees is functional? (yes/No)		YES		
Agenda distributed on time?				YES								
Members asked to Reconfirm participation (winter)?				NO				Award Nominations (last six months)				
Roster Workbooks Completed (Winter)				YES				Distinguished Service Award		0		
Did Chair and Vchair attend Training?				NO				Exceptional Service Award		0		
Did Handbook Chair attend Training?				NO				Other: Hightower, Research, etc (specify below)		0		
Did Program Chair attend Training?				NO				Award :				
Any Concerns or requests for the Technical Activities Committee? (Please type in Space Below)												

* For submitted sessions, include only sessions which your TC initiated and submitted FOR this meeting.

Appendix A. Research Subcommittee Agenda



AGENDA

ASHRAE TC 4.2 Research Subcommittee

4:15-6:00 pm, Monday, June 30th, 2014
Willow A 1, Seattle Sheraton Second Floor
Seattle, Washington

- 4:15 Call to order / introductions / changes to the agenda Cornick
- 4:20 **Active Research Projects**
- **1561-RP** Procedures to Adjust Observed Climatic Data for Regional or Microclimatic Variations
Cornick
 - **1699-WS** Update Climatic Design Data in Chapter 14 of the 2017 Handbook of Fundamentals
Lott
- 4:50 **Draft Work Statements (on Research Plan or submitted)**
- **1610-WS** Development of a Transposition Model for Clear-Sky Solar Irradiance Thevenard
(submitted/returned with comments, revise/submit by Feb 2014)
 - **1700-WS** A Global Database of Moisture Design Reference Years for Hygrothermal Analysis and Design of Buildings
Cornick
- 5:05 **New Research Topics/Research Plan**
- XX-RTAR Models for Generating Sky Temperatures for Building Modeling Barnaby/Gueymard
 - XX-RTAR Evaluation of CSFR Data Applicability for Climatic Data and Simulation Bourassa/Huang
 - XX-RTAR Delivering Design Data in New Ways Cornick/Bourassa
 - XX-RTAR Urban Climatology Gueymard
 - New Research Topics (RTARs and WSs can be submitted 4 times a year—six weeks before Winter and Annual meetings and 1 March/1 August.)
 -
- 5:10 **Old Business**
- Progress by the NASA Power Team to Generate ASHRAE Climatic Design Conditions and Global Climate Zone Maps using MERRA Data Westberg
- 5:15 **New Business**
- 5:20 **1477-RP Solar calculations revisited** Huang
- 6:00 **Adjourn**

Next Meeting: January 26, 2014 Chicago, Illinois

Appendix B. Minutes of Program Subcommittee Meeting



ASHRAE TC 4.2 Program Subcommittee
 2:30-3:30 pm, Sunday, June 29th, 2014
 Kirkland, Seattle Sheraton Third Floor
 Seattle, Washington

- 2:40 Call to order / introductions / changes to the agenda Huang
- 2:45 **Attendees:**
 Li Song, University of Oklahoma, LSong@OU.edu
 Neal Lott, NOAA/NCDC
 David Westberg, SSAI/NASA LARC
 Norm Bourassa, LBNL
 Serpil Yilmaz, Marmara University, Turkey
 Dru Crawley, Bentley Systems
 Joe Huang, Whitebox Technologies
 Steve Cornick, NRC/IRC
 Philip Jarrett, Environment Canada
 Larry Degelman, Texas A&M University
- 2:50 **Discussions of Program Items for this meeting:**
 None of the two program items proposed at the NYC meeting were accepted by ASHRAE.
 Two individual presentations were here in Seattle:
- Didier Thevenard presented a technical paper, Temperature trends for locations listed in the tables of Climatic Design Conditions in the 2013 Handbook of Fundamentals. Included in Tech Paper Session 3 on Super Insulated Retrofit Strategies, Climatic Design Conditions and Convection Enhancements, Sunday, 29 June.
 - Joe Huang presented a conference paper, An evaluation of ASHRAE's climatic design conditions against actual long-term recorded weather data. Included in Conference Paper Session 18 on Fundamentally Important Design Issues, Wednesday, 2 July.
- 3:00 **Previous proposed program item:**
- Session on SPC 169, Climatic Data Standard (Dru Crawley) was not accepted.
 - Program on ORNL data and LBNL online weather data were not accepted.
- 3:10 **New program items for Chicago, January 2015:**
- Li Song from Oklahoma proposed two seminar presentations based on recent research work at O.U.
 - A third seminar presentation was proposed that could be results of the RP1561 meso-scale modeling project results.
 - Additional proposals were:
 - to revive the idea of applications of weather data based on the Standard 169 – Dru Crawley.
 - ORNL data by Norm.
 - Actual weather updates, gridded data etc, by Chuck Khuen
- Future program ideas:**
- Dru Crawley suggested for January 2016 to talk about anticipated products from the RP 1699 work. (Handbook Data.)
 - Possibly a Forum on whether the membership needs weather data for ASHRAE Design Days
- Next Meeting: January 26, 2014 Chicago, IL**

Appendix C. Minute of 1699-RP and HOF Subcommittee Meeting

ASHRAE, June 29-July 1, 2014 meetings

1699-RP and HOF subcommittee (Jun 29 1699-RP meeting, Jun 30 Research meeting, Jul 1 TC 4.2 meeting)

- Present for Jun 29 meeting:

Didier Thevenard (have requested that he be added to PMS)	Steve Bruning (PMS)
Neal Lott (PMS)	Chip Barnaby
Philip Jarrett (PMS)	Norm Bourassa
Steve Cornick (PMS)	Mike Vaughn
Larry Degelman (PMS)	Michael Roth (Klimaat)
Dave Westberg	Serpil Yilmaz
Dru Crawley (PMS)	Not present – Anthony Arguez (PMS)

- Klimaat Consulting & Innovations Inc. was awarded the 1699-RP contract by ASHRAE, with a period of performance from June 1, 2014 through May 31, 2016.
- Michael Roth (Klimaat) reported on the project plan and status with these key points, along with discussion by those attending:
 - Key team members are Michael Roth, Xin Qui, and Chris Gueymard.
 - 3 main areas for the effort: Update meteorological data, solar update, develop toolkit.
 - The met data will be for 1990-2014 (25-year period).
 - May include web app and/or smart phone app with the toolkit.
 - Have obtained data and code from Didier to replicate 2013 results on Klimaat hardware (baseline test).
 - New elements to evaluate for 2017: Extreme wet bulb temps, outdoor thermal comfort, all-sky solar, Weibull wind distribution, highest and lowest temps of record, possibly others.
 - Rather strong consensus toward including wet bulb extremes (eg, return periods such as 10 and 20 years) and lowest/highest dry bulb temps (full period of record for each station) in the updated tables. Other parameters will be evaluated. **Action:** PMS to let Klimaat know by the January 2015 meeting which new elements to include.
 - Trend analysis will be done as before (1613-RP) – trends in mean and in variability. For the 2017 update, we will include trends for each location in the design tables – probably shown as degrees per decade.
 - Clear sky model refinement – Chris G. will be looking into 2 areas of the model to refine if needed.
 - All-sky radiation could be added – various options using satellite data + models. Consensus - will be put on hold for now. Due to level of effort, this could be a separate, rather small research project.
 - The toolkit could be embedded in WDVView, a web app, and/or mobile app. **Action:** Get permission if required from ASHRAE to provide a web app in addition to WDVView. WDVView will simply import the new data. Consensus is to develop the web app in a way to make it mobile friendly.
 - Climate zone maps – will provide data to Std 169 committee, along with the maps, which may be modified by 169 as needed. This will lessen the workload for the Std 169 committee as they incorporate the 2017 updated data.