

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

**1791 Tullie Circle, NE, Atlanta, Georgia 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. TC 4.2 DATE: February 2, 2013

TC/TG/TRG TITLE: Climatic Information

DATE OF MEETING: January 24th, 2011 LOCATION: Chicago, IL

MEMBERS PRESENT	MEMBERS ABSENT	EX/OFFICIO MEMBERS AND ADDITIONAL ATTENDEES
Didier Thevenard (Chair, Web, VM) Dru Crawley (VC, Res, Stds, CM) Juan-Carlos Baltazar (Sec, VM) Neal Lott (VM) Philip Jarret (VM) Steve Cornick (VM) Norm Bourassa (VM) Larry Degelman (CM) Chris Gueymard (CM) Joe Huang (CM) Chip Barnaby (CM) Bob Morris (CM) Evyatar Erell (NQ)	J Patrick Carpenter (VM) Geoffrey Levermore (NQ) Stuart Malkin (VM) Ronald Petersen (VM) Anthony Arguez (CM) Bill Bahnfleth (CM) Constantinos A Balaras (CM) Bryan Becker (CM) Jui-Chen R. Chang (CM) Don Colliver (CM) Reda Djebbar (CM) Brian Fricke (CM) Kenneth Hubbard (CM) Achilles Karagiozis (CM) Linda Lawrie (CM) Robert Lucas (CM) Richard Perez (CM) Michael Roth (CM) Tom Stoffell (CM) Charlie Whitlock (CM) Clayton Lampman (CM)	James Cullin Dave Westberg Chuck Khuen Shannon Rabideau Ulrike Passe

TAC CHAIR	Charles Wilkin
TAC SECTION HEAD	Walter Grondzik
RAC RESEARCH LIAISON	T Agami Reddy
SPECIAL PUBS LIAISON	John Clark
HANDBOOK LIAISON	James Dale Aswegan
CHAP TECH TRANS LIAISON	Andrew Cochrane
PROGRAM LIAISON	Bill Dietrich
PROF DEV COMM (ALI)	Filza Walters
STANDARDS LIAISON	James Tauby
STAFF LIAISON (RESEARCH/TECH)	Mike Vaughn

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

ASHRAE TC/TG/TRG ACTIVITIES SHEET

DATE: Current as of 1st February 2012

TC/TG/TRG NO.: TC 4.2

TC/TG/TRG TITLE: Climatic Information

CHAIR: Steve Cornick **VICE CHAIR:** Didier Thevenard **SECRETARY:** Dru Crawley

TC/TG/TRG MEETING SCHEDULE			
Location-Past 12 Months	Date	Location-Planned Next 12 Months	Date
Chicago, IL	2012-01-24	San Antonio, TX	2012-06-26
Montreal, QC, Canada	2011-06-28	Dallas, TX	2013-01-29
Las Vegas, NV	2011-02-01	Denver, CO	2013-06-25

TC/TG/TRG SUBCOMMITTEES	
Function	Chairman
Handbook	Bob Morris
Research & Standards	Drury Crawley
Program	Joe Huang
Honours	Joe Huang

RESEARCH PROJECTS-CURRENT			
Project Title	Contractor	Monitoring Comm.	Report Made At Meeting
1413-TRP Developing Standard Procedures for Filling Weather Data-Gaps During Analysis of Measured Building Energy Use	University of Oklahoma	Didier Thevenard (Chair), Chip Barnaby, Steve Cornick, Neal Lott	PMS Chair Thevenard reported that the PMS met with Contractor on Sunday (first meeting). The contractor presented their work since they started in September. This included results of filling short gaps of up to 10 hours with various methods. Project is on track.
1613-RP Update Climatic Design Data in Chapter 14 of the 2013 Handbook of Fundamentals	Numerical Logics	Robert Morris (Chair), Neal Lott, Steve Cornick, Steve Bruning, Dru Crawley	PMS Chair Morris reported that the PMS met with the contractor on Sunday. The updated content for the design conditions tables was discussed and has now been approved. Project is on schedule to complete the data required for the Handbook by the end of March 2012. The remaining deliverables will be completed by the end of September.

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	
1561-WS, Procedures to Adjust Observed Climatic Data for Regional or Microclimatic Variations	Yes	Yes	Yes	Yes.	Yes.	Yes.	Morris made a few corrections to the WS requested by RAC. Crawley will send to MORTS
1610-WS, Development of a Transposition Model for Clear-Sky Solar Irradiance	Yes	Yes	Yes	Yes	Yes	Yes	Sent back with comments
1654-URP Assessing the Potential of Climate Forecast System Reanalysis Data to Provide Local Climate and Weather Profiles in Areas not Currently Covered by Ground Station Data	Yes	Not					The PES met via teleconference before the Winter meeting. PES Chair Cornick reported that the PES will make a recommendation at the end of the session.
Xx-RTAR Moisture Design Reference Years for Hygrothermal Analysis and Design of Buildings (1325-RP Update)	Yes						Cornick put a draft RTAR on the TC Google site after the Montreal meeting (see attached). TC requested to provide comments back by March 15, 2012.

HANDBOOK RESPONSIBILITIES					
Year	Volume	Chapter Title	No.	Deadline	Handbook Sub. Liaison
2013	HOF	Climatic Design Information	14	2013-02	James Dale Aswegan
STANDARDS ACTIVITIES – List and Describe Subjects					
TC 4.2 is the cognizant TC for Std.169 <i>Weather Data for ASHRAE Building Standards</i> . 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)

- Poster Session, Methods for estimating heating and cooling degree-days to any base temperature (1453-RP) (LV-11-021)
- Updating the ASHRAE Climatic Data for Design and Standards (1453-RP) (AB-10-012)
- Impact of Typical Weather Selection Approaches on Energy Analysis of Buildings (RP-1477) (OR-10-042)
- Influence of Long-term Trends and Period of Record Selection on the Calculation of Climatic Design Conditions and Degree-Days (OR-10-045)
- Evaluation of Typical Weather Year Selection Approaches for Energy Analysis of Buildings (1477-RP) (Louisville, June 2009) (LO-09-072)
- Development of Models for Hourly Solar Radiation Prediction (1309-RP), (New York, January 2008) (NY-08-045)
- Impact of Solar Models on Building Energy Analysis for Tropical Sites (1309-RP), (Dallas, January 2007)(DA-07-058)
- Comparative Analysis of Four Solar Models for Tropical Sites (RP-1309), (Dallas, January 2007) (DA-07-058)

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

None currently planned.

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

- Seminar 18: New High Quality Solar Data Sources and Analysis Methods for High Resolution Weather Applications: Part 1 – Montreal, June 2011
- Seminar 48: New High Quality Solar Data Sources and Analysis Methods for High Resolution Weather Applications: Part 2 – Montreal, June 2011
- Seminar 16: Climate Change: It's Happening, So Who's Responding? TC 2.5 and TC 4.2 Co-sponsor – Las Vegas, January 2011
- Seminar 11: Background on Load Calculations Methodologies (Past and Present); Current ASHRAE Information (Handbook and Publications), TC 4.1 (TC 4.2 co-sponsor) – Orlando, January 2010
- Seminar 45, Climate Change Update (TC-2.5, Global Climate Change, cosponsor)
- Seminar 50, ASHRAE Handbook: Fundamentals Volume, Load Calculation Improvements (co-organized with TC 4.1 and TC 4.5) – Louisville 2009
- Seminar 42, The Tables Re-loaded: Handbook Rollout, Chapter 28 – Chicago 2009
- Seminar 4, Meso-scale weather modeling for building applications – Chicago 2009
- Seminar 78, Weather Data for Computer Simulation - More accurate tools for a climate change world. – New York January 2008.
- Seminar 48, Climate Change: Modelling the Weather and Its Potential Impacts on Building Performance – Long Beach, June 2007.

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

- Climatic design information in the 2013 Handbook – Montreal, June 2011

JOURNAL PUBLICATIONS, when published (past 3 yrs. present & planned)

Monthly average clear-sky broadband irradiance database for worldwide solar heat gain and building cooling load calculations, by Christian Gueymard & Didier Thevenard. I, Volume 83, Issue 11, November 2009, Pages 1998-2018.

Attachments:

Schedule and Agenda

Minutes

Action Items

Report from the Chair

TC/TG Activity Feedback Form

Research Subcommittee Agenda

**2012 Winter Meeting Schedule and Agenda, Chicago
TC 4.2 (Climatic Information) and Related Activities**

Time/Date	Meeting/Event	Hotel, Room, Floor
Saturday, 21 January 2012		
<i>No activities planned</i>		
Sunday, 22 January 2012		
9:30 a.m. - 10:00 a.m.	1654-URP, " <i>Assessing the Potential of Climate Forecast System Reanalysis Data to Provide Local Climate and Weather Profiles in Areas not Currently Covered by Ground Station Data</i> "	Sandburg 6 (floor 7)
10 a.m. - 11:30 a.m.	1413-RP, " <i>Developing Standard Procedures for Filling Climatic Data Gaps for use in Building Performance Monitoring and Analysis</i> "	Sandburg 6
12:00 a.m. - 1:30 p.m.	1613-RP, " <i>Update Climatic Design Data in Chapter 14 of the 2013 Handbook of Fundamentals</i> " and TC 4.2 Handbook Subcommittee Meeting	Sandburg 6
1:30 p.m. - 2:30 p.m.	TC 4.2 Program subcommittee	Sandburg 6
Monday, 23 January 2012		
10:00 a.m. - 12:00 p.m.	Weather Data SSPC 169, <i>Weather Data for Building Design Standards</i>	Burnham 2 (floor 7)
4:15 p.m. - 6:00 p.m.	TC 4.2 Research Subcommittee Meeting	Sandburg 6 (floor 7)
	4:30 p.m. - 4:45 p.m.: Presentation on " <i>Developments in the 'CAT' model for urbanized weather data</i> " by Evyatar Erell	
Tuesday, 24 January 2012		
1:00 p.m. to 3:30 p.m.	TC 4.2, Climatic Information, Full Committee Meeting	Burnham 1 (floor 7)
Wednesday, 25 January 2012		
<i>No activities planned</i>		

AGENDA, ASHRAE TC 4.2 Climatic Information

**1:00 – 3:30 PM, Tuesday, 24 January 2012
Palmer House Hilton, Burnham 1 (floor 7), Chicago**

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	Call to order Roll call Introductions Approval of agenda Approval of minutes of Montreal meeting (June 2011) Announcements Introduction of liaisons (liaison announcements/requests)	Thevenard Baltazar
1:15 PM	Membership Update	Thevenard
1:20 PM	Review of Action Items and Status	Crawley
1:25 PM	Status of publications: Design Weather Sequence Viewer CD (1998) Extremes: Weather Sequence Generator CD (1998) WYEC2 Data and Toolkit CD (1998)	
1:30 PM	Research Reports on status of current, future and completed research projects: <ul style="list-style-type: none">▪ 1477-RP (Development of Typical-year Weather Files from the ISH Data Base of Historical Weather Data for 2,500 International Locations)▪ 1413-RP (Filling of data gaps in climatic records)▪ 1613-RP (Update Climatic Design Data in Chapter 14 of the 2013 Handbook of Fundamentals)▪ 1561-WS (Meso-scale modeling of climatic data)▪ 1654-URP (Assessing the Potential of Climate Forecast System Reanalysis Data to Provide Local Climate and Weather Profiles in Areas not Currently Covered by Ground Station Data)▪ Other potential research projects	Crawley
1:50 PM	Use of remote sensing for climatic design conditions Presentation on “Report on the Usability of MERRA Half-Degree Hourly Data to Supplement ASHRAE Data in the Calculation of % Dry-Bulb Temperatures”	Westberg
2:15 PM	Handbook and 1613-RP discussions Deadlines for 2013 Handbook Availability of data in XML format	Morris / Thevenard
2:35 PM	Standards Report SSPC 169 Weather Data for Building Design Standards	Crawley
2:50 PM	Program <ul style="list-style-type: none">◦ San Antonio, 23-27 June 2012◦ Dallas, 26-30 January 2013◦ Denver, 22-26 June 2013◦ New York, 18-22 Jan 2014	Huang

3:10 PM	Old business / new business	From floor
3:20 PM	Adjournment	
3:20 PM	Executive session: 1654-URP (Assessing the Potential of Climate Forecast System Reanalysis Data to Provide Local Climate and Weather Profiles in Areas not Currently Covered by Ground Station Data)	Cornick

Next meeting: San Antonio, TX, 26 June 2012

2012 Winter Meeting Minutes
ASHRAE Technical Committee 4.2, Climatic Information
1:00 – 3:30 PM, Tuesday, 24 January 2012
Palmer House Hilton, Burnham 1 (floor 7), Chicago

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 **Call to order:** **Thevenard**
Chair Didier Thevenard opened the meeting.

Roll call **Baltazar**
Roll call and introductions. A voting quorum (7 of 11 voting members) was present

Approval of agenda: Thevenard move the agenda approval and the motion was second by Cornick. Agenda approved. (Agenda attached).

Approval of minutes of Montreal (28 June 2011). Bourassa moved and Phil seconded to approve the minutes (6-0-0, CNV)

Announcements: The new CEC CTZ files have been completed (as reported at the last meeting) but the files are not yet publicly available. CEC is making it available upon request. Huang will follow up on when it will be publicly available
General information: Deadline for conference papers in San Antonio Annual Meeting is March 19th and for seminar February 13th.

Liaison: No liaison member was present yet

1:15 PM **Membership:** effective July 1, 2012: **Thevenard**

Roster Rollovers

Rolls off as voting members –
Rolls on as voting members – Neil Lott
Rolls on as corresponding member – Joshua R. New

Executive:

Robert Morris Stops being Handbook Subcommittee Chair, neil Lott will take his place
The Chair thanked them for volunteering their services to the committee and the great job that has been done.

1:20 pm **Review of action items and status** **Crawley**

See action items attached.

1:25 PM **Status of publications: Design Weather Sequence Viewer CD (1998) Extremes: Weather Sequence Generator CD (1998) WYEC2 Data and Toolkit CD (1998)**
Crawley moved to remove the publications, Huang seconded, Motion approved (6-0-0)

1:40 pm **Research** **Crawley**

- 1654-URP (Assessing the Potential of Climate Forecast System Reanalysis Data to Provide Local Climate and Weather Profiles in Areas not Currently Covered by Ground Station Data)
- Other potential research projects

1477-RP *Development of 2,500 TMY weather files for international locations* – Project was finished

The DVD for the IWEC2 is now available in the ASHRAE Bookstore. Huang made a presentation suggesting some possible future improvement to the IWEC2 (presentation is attached):

1. Calibrate the solar against satellite-derived solar data
2. Filling the holes in coverage
3. Redoing the historical weather files
4. Reanalyze the rainfall data using the original ISD data

1413-TRP *Developing Standard Procedures for Filling Climatic Data Gaps for use in Building Performance Monitoring and Analysis* – PMS Chair Thevenard reported that the PMS met with Contractor (Oklahoma University) on Sunday (first meeting). The contractor presented their work since they started in September. This included results of filling short gaps of up to 10 hours with various methods. Project is on track.

1613-WS *Update Climatic Design Data in Chapter 14 of the 2013 Handbook of Fundamentals* – PMS Chair Morris reported that the PMS met with the contractor (Numerical Logics) on Sunday. The updated content for the design conditions tables was discussed and has now been approved. Project is on schedule to complete the data required for the Handbook by the end of March 2012. The remaining deliverables will be completed by the end of September.

1561-WS *Procedures to Adjust Observed Climatic Data for Regional or Microclimatic Variations* – Morris made a few corrections to the WS requested by RAC. Crawley will send to MORTS.

1654-URP *Assessing the Potential of Climate Forecast System Reanalysis Data to Provide Local Climate and Weather Profiles in Areas not Currently Covered by Ground Station Data* – The PES met via teleconference before the Winter meeting. PES Chair Cornick reported that the PES will make a recommendation in the Executive Session at the end of this meeting.

Other potential research projects:

1610-WS *Development of a Transposition Model for Clear-Sky Solar Irradiance* –Thevenard reminded the TAC that RAC had returned the 1610-WS to the TC with comments. No work since last meeting. Barnaby and Thevenard will review new research presented at Building Simulation 2011 in November:

http://www.bounceinteractive.com/bs2011/bs2011/pdf/P_1321.pdf

Xx-RTAR Moisture Design Reference Years for Hygrothermal Analysis and Design of Buildings (1325-RP Update)

Cornick put a draft RTAR on the TC Google site after the Montreal meeting (see attached). TC requested to provide comments back by March 15, 2012.

- 1:50 PM Use of remote sensing for climatic design conditions Westberg
 Presentation on “*Report on the Usability of MERRA Half-Degree Hourly Data to Supplement ASHRAE Data in the Calculation of % Dry-Bulb Temperatures*”
 Presentation could be found at <https://sites.google.com/site/ashraetc42/home/action-items/presentationofdry-bulbdesignconditiontemperaturesusingmerradata>
- 2:15 PM Handbook and 1613-RP discussions **Morris / Thevenard**
 Deadlines for 2013 Handbook: Project is on schedule to complete the data required for the Handbook by the end of March 2012
 Availability of data in XML format: Thevenard reported that the draft climatic data XML schema is available on the TC Google site page:
<https://sites.google.com/site/ashraetc42/home/xml/xmlforashraeclimaticdesignconditions-draftdocumentsforreview>. TC is invited to review and provide feedback.
- 2:35 PM Standards Report **Crawley**
 SSPC 169 Weather Data for Building Design Standards
 The current work is based on all the data in Standard with the data in the 2009 Handbook – Fundamentals, It has been consolidated the current three sections into one comprehensive data set, and annual and monthly long-term precipitation data have been added to the station data as well as climate zone information for all stations. A draft of precipitation data is ready (see <https://sites.google.com/site/ashraetc42/sspc-169/uscountymaps/Calculationofprecipitationdatav3.doc>) and first committee draft of the climate zone maps and tables were made (<https://sites.google.com/site/ashraetc42/sspc-169/uscountymaps/AbrieflookmoisturefortheLower48ofUnitedStates.pdf>). Included maps in the last document are contour maps for continents and large countries except for the US. The US is zoned by county boundaries as in the previous map.
- 2:50 PM Program **Huang**
 ◦ San Antonio, 23-27 June 2012
 Possible early papers from 1613-RP.
 Title: *Impact of Environmental Change on Building Design and Their HVAC Systems* – Chair Cornick
 Possible speakers:
 Crawley and Passe (Effects of Future Climatic Data), Errell (Urban Microclimate)
 ◦ Dallas, 26-30 January 2013
 ◦ Denver, 22-26 June 2013
 ◦ New York, 18-22 Jan 2014
- 3:10 PM Old business / new business **From floor**
 None

3:20 PM Adjournment
Morris moved and Barnaby seconded to adjourn the meeting. Meeting adjourned at 3:20 PM

3:20 PM Executive session: 1654-URP (Assessing the Potential of Climate Forecast System Reanalysis Data to Provide Local Climate and Weather Profiles in Areas not Currently Covered by Ground Station Data) **Cornick**

The PES met via teleconference before the Winter meeting. PES Chair Cornick reported that the decision of the PES was not supporting the project.
Motion was voted and approved (unanimity)

Next meeting: San Antonio, TX, 26 June 2012

Minutes prepared by Juan-Carlos Baltazar, TC 4.2 Secretary

ASHRAE TC 4.2 Climatic Information TC 4.2 Action Item Summary

Chicago, IL (January 2012)

<i>Item</i>	<i>Who</i>	<i>Status</i>
TC 4.2 members to review Long-term research plan and provide comments back to Cornick	TC 4.2 Members	Pending
Inform ASHRAE Publications that TC 4.2 agrees to remove WYEC2 CD from the bookstore.	Cornick	Pending
Request information from ASHRAE Publications on the sales of the Design Weather Sequence Viewer and Extreme Weather Sequence Generator CDs.	Cornick	Pending
Work with NASA to link remote sensed data with station data for Standard 169 updates in progress	Cornick	Complete
Submit seminar: <i>Impacts of Climate Changes</i> . Chair: Steve Cornick for San Antonio	Cornick	Pending
Submit seminar: <i>TDB</i> . Chair: Phil Jarrett for San Antonio.	Huang/Jarrett	Pending

Montreal (June 2011)

<i>Item</i>	<i>Who</i>	<i>Status</i>
TC 4.2 members to review Long-term research plan and provide comments back to Cornick	TC 4.2 Members	Pending
Inform ASHRAE Publications that TC 4.2 agrees to remove WYEC2 CD from the bookstore.	Cornick	Pending
Request information from ASHRAE Publications on the sales of the Design Weather Sequence Viewer and Extreme Weather Sequence Generator CDs.	Cornick	Pending
Work with NASA to link remote sensed data with station data for Standard 169 updates in progress	Cornick	Complete

Report from the Chair
1:00 – 3:30 PM, Tuesday, 24 January 2012
Palmer House Hilton, Burnham 1 (floor 7), Chicago
Didier Thevenard

Rebranding of ASHRAE

The ASHRAE has changed its name to “ASHRAE” from “American Society of Heating, Refrigerating and Air-Conditioning Engineers”. There is also a new logo, characterized by:

- The hexagonal shape, which is consistent with the past logo and maintains our past staple mark;
- “ASHRAE Blue” is the dominant color of the word mark;
- The gradation from “ASHRAE Blue” to lighter shades of blue help transition the eye toward “ASHRAE Green;”
- The “ASHRAE Green” increases towards the end of the mark, thus our nod toward a greener future and sustainability.

Announcements/Reminders:

1. CEC announcements
 - There is a new process to verify that TC’s have truly voted to sponsor a submitted program
 - We need to submit list of volunteers (reviewers or session chairs) for sessions related to the TC’s scope
 - The low number of conference papers submitted for San Antonio means a greater number of slots available for seminars and forums. Submission deadline for seminar and forums proposals is February 13, 2012
 - Starting with Dallas meeting, entire sessions can now be proposed. Submission deadline for proposals is March 19, 2012. CEC strongly encourages TCs to consider proposing an entire session.
2. Status of publications:

Publication	Date published	Cost	LTD Sales	Sales last 12 months
Design Weather Sequence Viewer CD	1998	\$99	146	1
Extremes: Weather Sequence Generator CD	1998	\$99	115	1
WYEC2 Data and Toolkit CD	1998	\$222	366	3
IWEC 1 CD	2001	N/A	176	11
Weather Data Viewer 3.0 CD	2005	N/A	263	-
Weather Data Viewer 4.0 CD	2009	\$119	229	111
IWEC 2 DVD	2012	\$229	-	-

3. Montreal seminar evaluations:

Question	Rating – Seminar 18	Ratings – Seminar 46
Good Technical Content (/5)	3.78	4.45
Well Organized (/5)	4.33	4.55
Meets Expectations (/5)	4.44	4.45
Current Interest (% yes)	89%	82%

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.

TC#	4.2	Committee Name:	Climatic Information
		Chair:	Dr. Didier Thevenard

Meeting was Held (City)	Chicago, IL 2012	(Day)	Tuesday	1/24/2012	
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Membership	Quorum Established (Yes/No)	YES
	Number Present	Total on Committee
Voting Members (excluding Non-Quorum Members)	7	11
Non-Quorum Members	1	2
Corresponding Members	7	21
Provisional Members	1	4
Visitors and Guests	2	0

Handbook Responsibilities		Standards Responsibilities	
Volume and Chapter (i.e. A17 Printing Plants)		Standards Number (i.e. SPC 178, Std 90.1, Gld 2)	
HOF, Chapter 14		SPC 169	
Total Number of Chapters	1	Total Number of Standards	1

Program Activities (This Meeting)									
Total # of Poster Sessions		Total # of Forums		Total # of Technical Sessions		Total # of Transactions		Total # of Seminars	
Sponsored	Co-Sponsored	Sponsored	Co-Sponsored	Sponsored	Co-Sponsored	Sponsored	Co-Sponsored	Sponsored	Co-Sponsored
0	0	0	0	0	0	0	0	0	0

Current Research Activities (active)		FAQ Responsibilities	
# of active RTARS	1	Total # of FAQ's	0
# of active Workstatements	1	Have FAQ's been updated on a 5 yr cycle?	YES
# of active TRPs	1		
# of active RPs	2	TC Website	
Total # of Active Projects	2	TC has a website (yes/no)	YES
		Website Up-to-date? (Yes/No)	YES
TC Management		Website is on the ASHRAE Server (Yes or No)	YES

	(Yes/No)		
Minutes Completed on Time?	YES	Link to website from www.ashrae.org/technology/page/104 is functional? (yes/No)	YES
Agenda distributed on time?	YES		
Members asked to Reconfirm participation (winter)?	YES		
Roster Workbooks Completed (Winter)	YES		
Did Chair and Vchair attend Training?	YES		
Did Handbook Chair attend Training?	YES		

<p>Any Concerns or requests for the Technical Activities Committee? (Please type in Space Below)</p> <p>It was great to have web access during our meetings – this is a significant improvement which should be continued in future meetings</p>
WFM 1/2011

AGENDA
 Research Subcommittee
 ASHRAE TC 4.2 Climatic Information
 4:15-6:00 pm, Monday, January 23rd, 2012
 Sandburg 6, 7th Floor, Palmer House Hilton
 Chicago, Illinois

- 4:15 Call to order / introductions / changes to the agenda Crawley
- 4:20 **Active Research Projects**
- **1413-RP** Developing Standard Procedures for Filling Weather Data-Gaps During Analysis of Measured Building Energy Use Thevenard
 - **1561-TRP** Procedures to Adjust Observed Climatic Data for Regional or Microclimatic Variations Cornick
 - **1613-RP** Update Climatic Design Data in Chapter 14 of the 2013 Handbook of Fundamentals Morris
 - **1654-URP** Assessing the Potential of Climate Forecast System Reanalysis Data to Provide Local Climate and Weather Profiles in Areas not Currently Covered by Ground Station Data Cornick
- 4:40 **Draft Work Statements (on Research Plan or submitted)**
- **1610-WS** Development of a Transposition Model for Clear-Sky Solar Irradiance Thevenard
 - **Xx-RTAR** Moisture Design Reference Years for Hygrothermal Analysis and Design of Buildings (1325-RP Update) Cornick
- 4:55 **Research Topics**
- New Research Topics
 - 1477-RP Wrap-up, areas of improvement Huang
- 5:00 **Research Plan 2012 / 2013** Crawley
- Review TC 4.2 research topics
 - Long-term research plan All
- 5:30 **Old Business**
- CEC weather data update Huang
 - GPC 20 XML Definitions / gbXML / Climatic Data Definitions Barnaby
- 5:35 **New Business**
- Presentation “Developments in the 'CAT' model for urbanized weather data” Evyatar Erell
 - ISHRAE Weather Files Huang
- 6:00 **Adjourn**

Next Meeting: June 25, 2012 San Antonio, Texas

Research Subcommittee Minutes
ASHRAE TC 4.2 Climatic Information
4:15-6:00 pm, Monday, January 23rd, 2012
Palmer House Hilton
Chicago, Illinois

Participants

Juan-Carlos Baltazar
Chip Barnaby
Norm Bourassa
Steve Cornick
Dru Crawley (Chair)
Larry Degelman
Evyatar Erell

Cynthia Gage
Chris Gueymard
Joe Huang
Philip Jarrett
Chuck Khuen
Neal Lott
Bob Morris

Vikram Murthy
Joshua New
Ulrike Passe
Shannon Rabideau
Didier Thevenard
David Westberg

Crawley called the meeting to order at 4:15pm. Those present introduced themselves. The agenda was accepted as distributed (attached).

Active Research Projects

1413-RP Developing Standard Procedures for Filling Weather Data-Gaps during Analysis of Measured Building Energy Use

PMS Chair Thevenard reported that the PMS met with Contractor (Oklahoma State University) on Sunday (first meeting). The contractor presented their work since they started in September. This included results of filling short gaps of up to 10 hours with various methods. Project is on track.

1561-TRP Procedures to Adjust Observed Climatic Data for Regional or Microclimatic Variations

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PMS Chair Morris reported that the PMS met with the contractor (Numerical Logics) on Sunday. The updated content for the design conditions tables was discussed and has now been approved. Project is on schedule to complete the data required for the Handbook by the end of March 2012. The remaining deliverables will be completed by the end of September.

1654-URP Assessing the Potential of Climate Forecast System Reanalysis Data to Provide Local Climate and Weather Profiles in Areas not Currently Covered by Ground Station Data

The PES met via teleconference before the Winter meeting. PES Chair Cornick reported that the PES will make a recommendation to the TC tomorrow.

Draft Work Statements (on Research Plan or submitted)

1610-WS Development of a Transposition Model for Clear-Sky Solar Irradiance

Thevenard reminded the TAC that RAC had returned the WS to the TC with comments. No work since last meeting. Barnaby and Thevenard will review new research presented at Building Simulation 2011 in November:

http://www.bounceinteractive.com/bs2011/bs2011/pdf/P_1321.pdf

Xx-RTAR Moisture Design Reference Years for Hygrothermal Analysis and Design of Buildings (1325-RP Update)

Cornick put a draft RTAR on the TC Google site after the Montreal meeting (see attached). TC requested to provide comments back by March 15, 2012.

Research Topics

New Research Topics

The TC was reminded of the Long-range research plan (draft) presented at the last meeting (available on the Google site). A few people commented but further input is requested by March 15, 2012.

1477-RP Wrap-up, areas of improvement

The DVD for the IWEC2 is now available in the ASHRAE Bookstore. Huang made a presentation suggesting some possible future improvement to the IWEC2 (presentation is attached):

1. Calibrate the solar against satellite-derived solar data
2. Filling the holes in coverage
3. Redoing the historical weather files
4. Reanalyze the rainfall data using the original ISD data

Research Plan 2012 / 2013

RTARs and WSs can be submitted 4 times a year—six weeks before Winter and Annual meetings and 15 February, 1 August.

Old Business

CEC weather data update

The new CEC CTZ files have been completed (as reported at the last meeting) but the files are not yet publicly available. CEC is making it available upon request. Huang will follow up on when it will be publicly available.

GPC 20 XML Definitions / gbXML / Climatic Data Definitions

Thevenard reported that the draft climatic data XML schema is available on the TC Google site page: <https://sites.google.com/site/ashraetc42/home/xml/xmlforashraeclimaticdesignconditions-draftdocumentsforreview> . TC is invited to review and provide feedback.

New Business

Evyatar Erell gave a presentation on “Developments in the 'CAT' model for urbanized weather data”. (Presentation and paper attached.)

Huang and Murthy reported that updates for ISHRAE also helped improve the final data in the IWEC2. 45 locations in India will be available through ISHRAE.

The TC 4.2 Research Subcommittee adjourned at 6:05 pm.

Next Meeting: June 25, 2012 San Antonio, Texas