

THESE DRAFT MINUTES HAVE NOT BEEN APPROVED AND ARE NOT THE OFFICIAL, APPROVED RECORD UNTIL APPROVED BY THIS COMMITTEE.

AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS, INC.
1791 Tullie Circle, N.E./Atlanta, GA 30329 USA

TC/TG/TRG MINUTES COVER SHEET

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

TC/TG/TRG No.: TC 1.09

Date: June 25, 2013

TC/TG/TRG TITLE: Electrical Systems

DATE OF MEETING: Tuesday, June 25, 2013

LOCATION: Denver, Colorado

MEMBERS PRESENT	YEAR APPT'D	MEMBERS ABSENT	YEAR APPT'D	EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE
Voting Members Armin Hauer Larry Markel John Nix Frank Pucciano Michael Todd Corresponding Members Steven Faulkner		Voting Members John Stoops International Members Mrs Marija S Todorovic Corresponding Members Ronald Antinori Subhash Brahmavar Curtis Crane Robert Crosby Fred Daughtery Dr Alexander Domijan Dr Chad Dorgan Carlos Estrada Kris Findley Charles Foster Norman Fowler Wayne Frazell Joe Hague Robert Helt Rodney Lewis Joseph Lunsford Kenneth Luther Janet Lynch John Metzger Wayne Mitchell Ram Narayannamurthy Rex Noble Janice Peterson Thomas Piwinski		Section Head Victor Penar RAC Art Giesler Visitors Amanda Fish Joseph McCabe

		John Richardson Steve Rosenstock Richard Rundus Colleen Smith Leo Stambaugh Lousi Sulfstede Paul Tanpitukponoje Marvin Thedford Gary Throckmorton Russell Tiffany William Warren William Warren Jr.		
--	--	--	--	--

DISTRIBUTION:

ALL MEMBERS OF TC/TG/TRG (and meeting guests) TAC Section Head: <u>Victor Penar</u> Chapter Tech Transfer: <u>Alexander Weiss</u> Research Liaison: <u>Art Giesler</u> ALI/PDC: <u>Donald Brandt</u> HB Applications: <u>John Pennington</u>	ASHRAE Special Publications: <u>Francis Mills</u> TAC Chairman: <u>William McQuade</u> Standards Liaison: <u>Heather Platt</u> Manager of Standards: <u>Stephanie Reiniche</u> Staff Liaison/Resch./Tech Svcs: <u>Michael Vaughn</u>
---	--

ASHRAE TC/TG/TRG ACTIVITIES SHEET

MEETING DATE: June 25, 2013

TC/TG/TRG NO.: TC 1.09 TC/TG/TRG TITLE: Electrical Systems

CHAIR: Frank Pucciano VICE CHAIR: Larry Markel SECRETARY: Michael Todd

TC/TG/TRG MEETING SCHEDULE

Location – Past 12 Months	Date	Location – Planned Next 12 Months	Date
Dallas, Texas	1/29/13	New York, New York	1/2014
Denver, Colorado	6/25/13	Seattle, Washington	6/2014

TC/TG/TRG SUBCOMMITTEES

Function	Chair
Standards	Ken Luther
Research	Larry Markel
Program	Russell Tiffany
Handbook	Frank Pucciano
Webmaster	Steven Faulkner

RESEARCH PROJECTS – CURRENT

Project Title	Contractor	Monitoring Committee	Report Made At Meet
None			

LONG RANGE RESEARCH PLAN

Rank	Title	W/S Written	Approved	To RAC
None				

HANDBOOK RESPONSIBILITIES

Year & Volume	Chapter	Title	No	Deadline	Handbook Liaison
2015 HVAC Applications	Electrical Systems		56	2014	Brian Rock

STANDARD ACTIVITIES – List and Describe Subjects

None

TECHNICAL PAPERS from sponsored research – title, when presented (past 3 years present and planned)

None

TC/TG/TRG SPONSORED SYMPOSIA – title, when presented (past 3 years, present, and planned)

None

TC/TG/TRG SPONSORED SEMINARS – title when presented (past 3 years, present, and planned)

1/10 What Does A large building Operator Need to Know about the SmartGrid while the Grid is Still in School Seminar 15

6/10 Cap & Trade: Impact on buildings and Operating Cost, Co-Sponsor

2/11 Putting Your Meter-And Submeter-To Work For You

6/11 Electric Vehicles and Net Zero Energy Buildings: A Perfect Match or an Odd Couple

TC/TG/TRG SPONSORED FORUMS – title, when presented (past 3 years, present, and planned)

1/10 Will Equipment Protection Requirements for Large Buildings Change as NZEB with PV Increase?

JOURNAL PUBLICATIONS – when published (past 3 years, present and planned)

None

Submitted By: Michael Todd
Secretary

ASHRAE TC 1.9 Electrical Systems

**Minutes for the Meeting at
Sheraton
Denver, Colorado
Tuesday, June 25, 2013**

1. CALL TO ORDER

Introduction of Members and Guests.

Technical Committee 1.9 was called to order at 3:36 pm at the Sheraton in Denver, Colorado. Technical Committee Members and guests introduced themselves and briefly described their backgrounds. Absent Members are identified on the cover sheet.

Frank Pucciano reviewed the membership list to determine if a quorum was present. A quorum was present with 5 out of 6 voting members present.

2. APPROVAL OF MINUTES AND REVIEW OF ACTION ITEMS

Chair Frank Pucciano reported the drafted minutes for the Dallas meeting were sent out via e-mail.

Motion: A motion to approve the Dallas minutes was given by Larry Markel and a second by Armin Hauer. A vote was taken and the minutes from the Dallas meeting were approved with a 5-0-0 vote.

Report Action Items:

None.

3/4. TC MEMBERSHIP and COMMITTEE APPOINTMENTS

Report on changes in voting members. Amanda Fish (YEA) agreed to become a voting member effective in July, 2013.

5. CHAIR REPORT: Frank Pucciano

Presented summary of TC Chair meeting and reminded everyone to update their personal information on the ASHRAE site. ASHRAE is currently low on research projects and has money for projects. They are currently allowing TC's to go straight to a work statement.

Up and coming meetings: New York, New York January 18 to January 22, 2014

6. SUBCOMMITTEE REPORTS

A. Standards: Ken Luther

None.

B. Research: Larry Markel

Larry suggested TC 1.9 co-sponsor with TC 6.9 work statement 1607, which is titled, *Design and Utilization of Thermal Energy Storage to Increase the Ability of Power Systems to Support Renewable Energy Resources*.

Motion: A motion to co-sponsor the above project was given by Larry Markel and a second by Armin Hauer. A vote was taken and the co-sponsorship was approved with a 5-0-0 vote.

C. Program: Russell Tiffany

Deadline for New York submission is August 12, 2013. Group felt there is insufficient time to do anything for the New York conference and plan to target something for Seattle.

Group discussed ideas for special session on co-generation with motors and various load profiles.

D. Handbook: Frank Pucciano

Frank collected comments since the last meeting and distributed them (see attached). The outline below was updated with Steve Rosenstock to update the section on rates and Frank to update the section on energy metering. Frank proposed the following target dates for updating the handbook.

- Proposed draft – 9/30/13
- Review & comments due – 11/1/13
- Revisions sent out for vote – 12/1/13
- Votes due – 1/1/14

CHAPTER 56 ELECTRICAL CONSIDERATIONS

INTRODUCTION

SAFETY

PERFORMANCE

PRINCIPLES OF ELECTRICITY

Electric Power Components in Buildings

Electrical Wiring – keep, Steven Faulkner, reference applicable codes

Transformers

What is a transformer?

How does it work?

Transformer Configurations – 3 phase, D-Y, Y-Y, etc., single phase

Transformer Types (dry/oil)

ANSI Voltages – already in there

What are taps and when are they used? – keep, Frank

What are shielded or K rated transformers – keep & review, Marv

Transformer Performance Considerations – keep & review, Marv

Inrush and Excitation Current

Impedance

Isolation

Voltage Regulation

Motor Start Volt Drop Calculations

Emergency and Standby Power Systems – update, Frank

Disconnect Switches

Dual Feed/Automatic Transfer Switches

Standby Generators, UPS, etc.

Panel Boards

Cold load staging

UPS standby losses

Protection Devices – keep & review, Marv

Magnetic Trip Breakers

Shunt Trip Breakers

Surge Protectors

Types

Applications

Wiring Devices – keep & review, Marv

Motor Control and Protection

Motor Starters/Thermal Overloads

Phase Loss Monitors – already in there

Design for Building Electric Systems – Frank to take a stab at it

Transformer Loads

Definitions

Load Estimation Load Calculations

Electrical Equipment Sizing

Electric Measurement and Metering

Special Systems

Voltage Terms

Utilization Equipment Voltage Ratings

Voltage Level Variation Effects

Voltage Selection

POWER QUALITY VARIATIONS

Disturbances

Steady State Variations

Transients

Short Duration Variations

Long Duration Variations

Interruptions/Outages

Harmonic Distortions

Voltage Flicker
Noise
Power Quality Mitigation
MOTOR STARTING EFFECTS
Light Dimming or Voltage Sags
Types of Lamps, Fixtures, etc. (???) – effect new types of lights (fluorescent, LED, HID), Marv
Motor Starting Methods
ENERGY METERING – Frank
ENERGY MEASUREMENT (*Integrate with ELECTRICAL RATES below*) – Larry & John
Power Factor Correction
Synchronous Condensers (Capacitors)
BILLING RATES – **Steve Rosenstock**
Cost-based Rates
Policy-based Rates
Market-based Rates
Diversity
ELECTRICAL CODES
NEC
CSA
UL Listing
CSA Approval
ULC
NAFTA Wiring Standards

John Pennington – Handbook Liaison

Discussion on next round of Chapter Additions

E. Membership: Larry Markel

Larry discussed that we are allowed to have two non-quorum voting members. He will send an email to welcome Amanda Fish to the TC. ASHRAE has also created a new online forum website called ASHRAExCHANGE.org (see attached handout passed out during the meeting). He suggested our TC should use it to promote itself and recruit new members. Lastly, he suggested having a TC 1.9 post meeting mixer and invite potential new members.

F. Professional Development Committee (PDC Coordinator): John Nix

None.

7. WEB SITE: Steven Faulkner

Steven reported the website is mostly up to date; however, he is working through some access issues with his local IT.

8. LIASION REPORTS

Section Head: Vic stated TC 1.9 will have 9 voting members as of July 1, 2013 and he reminded us our chapter needs updated for the 2015 handbook. Vic also announced he will be retiring.

RAC: ASHRAE is currently low on research projects and has money for projects. They are currently allowing TC's to go straight to a work statement.

9. OLD BUSINESS

Frank will follow up with John about the slides to update the professional development course, which was discussed at the previous meeting.

10. NEW BUSINESS

None.

Frank thanked everyone for coming to the meeting.

11. ANNOUNCEMENT OF NEXT MEETING

Chairman Frank Pucciano announced that the next meeting would be held in New York, New York in January 2014 at the same time on Tuesday.

12. ADJOURNMENT

Larry Markel made a motion to adjourn with a second from John Nix. Motion carried 5-0-0.

Respectfully Submitted,
Michael Todd
Secretary, TC 1.09