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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: January 24, 2012

TC/TG/TRG TITLE: Electrical Systems

DATE OF MEETING: Tuesday, January 24, 2012

LOCATION: Chicago, Illinois

| MEMBERS PRESENT | YEAR APPT'D | MEMBERS ABSENT | YEAR APPT'D | EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE |
|--|-------------|---|-------------|--|
| <p>Voting Members Steven Faulkner Frank Pucciano Michael Todd Armin Hauer</p> <p>Corresponding Members Larry Markel John Nix Robert Helton</p> | | <p>Voting Members Kris Findley John Stoops</p> <p>International Members Mrs Marija S Todorovic</p> <p>Corresponding Members John Richardson Steve Rosenstock Wayne Frazell Kenneth Luther Russell Tiffany Leo Stambaugh Curtis Crane Ronald Antinori Subhash Brahmavar Robert Crosby Dr Alexander Domijan Dr Chad Dorgan Fred Daughtery Carlos Estrada Charles Foster Norman Fowler Joe Hague Robert Helt Rodney Lewis Joseph Lunsford Janet Lynch John Metzner Wayne Mitchell Chad Dorgan</p> | | <p>Section Head Victor Penar RAC Art Giesler</p> <p>Visitors</p> |

| | | | | |
|--|--|---|--|--|
| | | Rex Noble Janice Peterson Thomas Piwinski Richard Rundus Colleen Smith Lousi Sulfstede Paul Tanpitukponoje Marvin Thedford Gary Throckmorton William Warren Charles Foster Janice Peterson William Warren Jr. | | |
|--|--|---|--|--|

DISTRIBUTION:

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| ALL MEMBERS OF TC/TG/TRG (and meeting guest) TAC Section Head: <u>Victor Penar</u> Chapter Tech Transfer: <u>Steve L Rosen</u> Research Liaison: <u>Dr Sriram Somasundaram</u> ALI/PDC: <u>Filiza H Walters</u> HB Applications: <u>John Pennington</u> | ASHRAE Special Publications: <u>John A. Clark</u> TAC Chairman: <u>Charles C Wilkin, PE</u> Standards Liaison: <u>Michael Woodford</u> Manager of Standards: <u>Stephanie Reiniche</u> Staff Liaison/Resch./Tech Svcs: <u>Michael Vaughn</u> |
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ASHRAE TC/TG/TRG ACTIVITIES SHEET

MEETING DATE: January 24, 2012

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

CHAIR: Steven Faulkner VICE CHAIR: Frank Pucciano SECRETARY: Kris Findley

TC/TG/TRG MEETING SCHEDULE

| Location – Past 12 Months | Date | Location – Planned Next 12 Months | Date |
|---------------------------|----------------|-----------------------------------|---------------|
| Montreal, Canada | 6/29/11 | San Antonio, Texas | 6/2012 |
| Chicago, Illinois | 1/24/12 | Dallas, Texas | 1/2013 |
| | | | |

TC/TG/TRG SUBCOMMITTEES

| Function | Chair |
|-----------|-----------------|
| Standards | Ken Luther |
| Research | Larry Markel |
| Program | Russell Tiffany |
| Handbook | Frank Pucciano |
| Webmaster | Kris Findley |

RESEARCH PROJECTS – CURRENT

| Project Title | Contractor | Monitoring Committee | Report Made At Meet |
|---------------|------------|----------------------|---------------------|
| | | | |

LONG RANGE RESEARCH PLAN

| Rank | Title | W/S Written | Approved | To RAC |
|------|-------|-------------|----------|--------|
| None | | | | |

HANDBOOK RESPONSIBILITIES

| Year & Volume | Chapter | Title | No | Deadline | Handbook Liaison |
|---------------|--------------------|-------|----|----------|------------------|
| 2004 Systems | Electrical Systems | | 55 | 2011 | Brian Rock |

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| <p>STANDARD ACTIVITIES – List and Describe Subjects None</p> |
| <p>TECHNICAL PAPERS from sponsored research – title, when presented (past 3 years present and planned) None</p> |
| <p>TC/TG/TRG SPONSORED SYMPOSIA – title, when presented (past 3 years, present, and planned) 2/00 Current Aspects of Distributed Technology (co-sponsored w/ TC 9.5) 1/04 Distributed Generation, Security and the Hydrogen Economy None</p> |
| <p>TC/TG/TRG SPONSORED SEMINARS – title when presented (past 3 years, present, and planned) 1/08 How Do You Connect Your Net-Zero Building to the Grid? Seminar 66 6/08 Benchmarking for Carbon Analysis: Here’s What’s Coming Seminar 56 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</p> |
| <p>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?</p> |
| <p>JOURNAL PUBLICATIONS – when published (past 3 years, present and planned)</p> |

Submitted By: Steven Faulkner
Chair

ASHRAE TC 1.9 Electrical Systems

**Minutes for the Meeting at
The Palmer House Hilton
Chicago, Illinois
Tuesday, January 24, 2012**

1. CALL TO ORDER

Introduction of Members and Guests. Technical Committee 1.9 was called to order at 3:40 pm at the Palmer House Hilton in Chicago, Illinois. Technical Committee Members and guests introduced themselves and briefly described their backgrounds. Absent Members are identified on the cover sheet.

Steven Faulkner reviewed the membership list to determine if a quorum was present. A quorum was present.

2. APPROVAL OF MINUTES AND REVIEW OF ACTION ITEMS

Chair Steven Faulkner reported the drafted minutes for the Montreal, Canada meetings were sent out via e-mail.

Motion: A motion to approve the Montreal minutes was given by Chair Steven Faulkner and a second by Frank Pucciano. A vote was taken and minutes from the Montreal meeting was approved 4-0-0 vote

Report Action Items:

There were no outstanding Action Items.

3/4. TC MEMBERSHIP and COMMITTEE APPOINTMENTS

Report on changes in voting members.

5. CHAIR REPORT: Steven Faulkner

Comments from breakfast, spoke about upcoming meetings in San Antonio. Winner of Hightower Award. Roster updates, Updating voting member, TC voting procedure.

Up and coming meetings: San Antonio, Texas June 23 to June 27, 2012

6. SUBCOMMITTEE REPORTS

- A. Standards: Ken Luther**
- B. Research: Larry Markel**
- C. Program: Russell Tiffany**
- D. Handbook: Frank Pucciano**

Copy of Chapter in handbook needs to be reviewed. Frank is trying to locate a copy that can be edited. Frank has to split his time between TC 1.9 and TC 6.8. Both meet on Tuesday afternoon.

John Pennington – Handbook Liaison

Discussion on next round of Chapter Additions

E. Membership: Larry Markel

Discussion on ways to reach out to find more members that can attend meetings. Go to Help Wanted on ASHRAE's website. Go to Young Engineering Assoc. Get To Know (YEA). Need to hit interest of Utility Companies and Manufacturers.

F. Professional Development Committee (PDC Coordinator):

Steven Faulkner brought up short courses. The last meeting Jon Nix spoke: ASHRAE would also like to have new short courses and long courses. We discussed a short course on electric, gas and water rates, how to calculate energy savings for energy efficiency projects. Steven Faulkner to send Jon Nix an outline by February 6th.

7. WEB SITE: Kris Findley

Kris was absent, but web site is up-to-date

8. LIASION REPORTS

TC 6.2 working with TC 6.9 on CHP, Larry would like to co-sponsor a research statement with TC 6.9.

Robert Helton and Michael Todd TC 1.11

TC 1.11 is planning to do a Seminar on Harmonic Distortion and Reality. They would like to TC 1.9 to co-sponsor this seminar. The seminar will cover; how drives are applied, harmonic guidelines, Standard 5.19. AHRI C393 Discussion

9. OLD BUSINESS

Discussion on developing a short course for energy rates. Steven Faulkner to send Jon Nix an outline by February 6th.

10. NEW BUSINESS

Frank Pucciano discussed putting together a seminar on Energy Security. Will try and get four speakers that he has worked with in the past.

Seminar/Tracks for up and coming meeting:

Interconnection Studies

Discussion on Renewables

How to Connect Your Renewables to the Grid?

Other Utility Interest & Issues

A. Electric Technologies

- B. Source vs. Site Energy-Economics
- C. Electric Consideration on HVAC Systems
 - a. Mission Critical
 - b. National & Local Security
 - c. Back-up Generation
 - d. Interconnection
 - e. CHP

Industry Interest & Issues

- A. Variable Speed
- B. Electronics
- C. Electrical load increases vs. chiller loading
- D. Back-up Power Capabilities
- E. Thermal Storage
- F. Renewables-Intermittant vs. Baseload

Steven thanked everyone for coming to the meeting.

11. ANNOUNCEMENT OF NEXT MEETING

Chairman Steven Faulkner announced that the next meeting would be held in San Antonio, Texas in June 2012 at the same time on Tuesday.

12. ADJOURNMENT

Frank Pucciano made a motion to adjourn; Steven Faulkner made a second to the motion. Motion carried 4-0-0.

Respectfully Submitted,
Steven Faulkner
Chair, TC 1.09