

SOL AIR

Newsletter of the Southern California Chapter: American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc.
March 2001 website: www.ashrae-socal.org Vol. 46, No. 7

MARCH MEETING INFO

March 6, 2001

Les Freres TAIX
1911 Sunset Blvd., Los Angeles, California

5:30 Tech Forum
Five Common Psychrometric Mistakes
Speaker: Mr. Mike Gallagher, P.E.

6:05 Social Hour (Fun Time!)

6:45 Dinner
\$23 with reservation
\$25 without reservation
\$10 student member

7:45 Main Program:
Designing Central Chilled
Water Systems
Speaker: Kent Peterson, P.E.

9:00 Meeting Ends

Please place reservations to Jennifer Farr,
(310) 671-6915, Fax (310) 671-1467 by
Monday, March 5, 2001.

MARCH MAIN MEETING

Designing Central Chilled Water Systems

Speaker: Kent Peterson, P.E.

Engineers have many decisions to make when designing central chilled water systems today. Many of these decisions require extensive consideration of elements beyond the perimeter of the plant. Some of these questions include:

- What diversity factors can be used in sizing chilled water systems?
- How can the design delta T be achieved?
- What effect does delta T have on chiller performance?
- What plant configuration best fits the requirements?
- What control strategies should be used?

- How do you select the proper chillers, cooling towers and pumps?

- When is thermal storage viable?

Our speaker this month, Kent Peterson, P.E., has a reputation for providing creative central chilled water plant designs. He is the Chief Mechanical Engineer and a Principal of P2S Engineering in Long Beach. His design experience includes both large and small chilled water plants for both comfort cooling and process cooling. Mr. Peterson will share his knowledge in designing various types of chilled water plants and discuss ways to optimize your next chilled water plant design.

Mr. Peterson is currently serving as Director and Regional Chair for Region X and is past President of the ASHRAE Orange Empire Chapter. He also serves as a member of the ASHRAE Board Planning Committee. He is a past member of ASHRAE TC 1.2, Instruments and Measurements, TC 1.4, Control Theory and Application and GPC 13, Guideline for Specifying Direct Digital Control Systems. Mr. Peterson has authored a number of papers and has made presentations to ASHRAE, ISA and AEE.

MARCH TECHNICAL FORUM

Five Common Psychrometric Mistakes

Speaker: Mike Gallagher, P.E.

Mike Gallagher of Western Allied will discuss five common psychrometrics-related application errors that he sees regularly in Southern California. Come share a laugh (or cry) at some of these items (but don't admit that anyone from your office has ever done anything like what is discussed). You are encouraged to have an example in mind of something you've seen, in case Mike doesn't bring up an example similar to yours. This is your chance to confirm that you understand how the psych chart relates to the real world.

People enjoyed their February newsletter on website. Thanks to our Editor Joe Ablay and Home Page Guru Craig Hofferber. Don't forget to visit Chapter Website www.ashrae-socal.org.

FEBRUARY TECH FORUM RECAP

Air Filtration Equipment

by: **J. Michael Burke**



Technical speaker Mike Burke with Bob Brennan

Michael Burke presented an abbreviated overview of the many key roles air filtration equipment play in the design and operation of air handling systems. The presentation included packets which contained data

depicting the high contamination levels that prevail in Southern California. Articles and data from SCQMD validated the existence of contaminants that have to be removed from the air, "Diesel exhaust, soot, tire dust and other contaminants are the major culprits. Both particulates and gaseous compounds must be removed", stated Burke.

Burke stressed the fact that energy crisis in 1974 resulted in significant indoor air quality problems because of the reductions of total air changes and reduction of outside air. He stated however, that today's products allow the engineer to increase efficiency significantly while lowering energy consumption. He stated that minimum efficiency for the primary filter should be 85% (ASHRAE) and in most cases 95% efficiency is preferred. Respirable particles, 2.5 microns to .5 microns are damaging to humans. This combined with the requirement to protect fans, coils ductwork, interiors and equipment pretend the application of high efficiency filtration for all applications.

Burke graphically depicted the energy cost of operating a filter at 2000 CFM at 1.00"Wg. for one year. Would you believe, \$342 per year? Energy costs can be reduced significantly by utilizing high efficiency filters with increased media area and low dynamic losses. Lowering approach velocities will reduce time weighted average pressure drop by the square.

Code requirements for hospitals were addressed, and

February was another great month for our Chapter. Some of us went to the ASHRAE Winter meeting in Atlanta, came back with increased knowledge and updates from various technical committees. At our February meeting Mike Burke and Avi Baidya shared many years of their knowledge and experience in the areas of air filtration and DDC controls, respectively.

Members have received their own Chapter Roster. Thanks to Ralph Panting for his hard work and long term vision of the Chapter. He has established a process that will enable us to receive the Chapter Roster well on time. Please keep Ralph posted for any update in your membership details, such as phone no., E-mail address etc.

Golf Tournament is on April 11, 2001 at Brookside Golf Club for your entertainment and networking with the friends and members. Thanks to Ed Schmidt and Bob Donat for their arranging it. Please check the flyer and be there.

Spring seminar is set for April 21, 2001 at Department of Water and Power. Please check the flyer, mark your calendar and attend. Mike Gallagher will present this unique seminar on Psychometric Charts. We encourage everyone to take this opportunity to refresh a very important step in HVAC field. Thanks to Amar Amarnani for setting it up.

Amar Amarnani has been contacting you for your research promotion support. Please help the Chapter meet its research promotion goal with your generous contributions.

Mike Burke and Conrad Chan are constantly working on improving our membership. Please introduce a friend to ASHRAE industry.

It is the time of the year when Chapter starts taking applications for Students Scholarship. Clay Lampman, along with Ron Sweet are taking a lead in finding the deserving students. This year the investment market has taken a slight hit. Our Scholarship investment Chairperson Phil Trafton is keeping a good eye on it. I am hoping that the recommendation for the scholarship will be similar to last year.

Nominating committee has started the process of finding the deserving candidates for the next year Board. This will help in smooth transition to the next year's officers.

I would like to thank John Lockett and Charles O'Connor of Department of Water & Power for helping us in publishing our newsletter. Due to some technical difficulty, it was published in black and white. All the future issues will be in color/ glossy paper.

specifically directed towards the CMC
- Page 26.6 Table 4B & 4C.

1. Bag In/BagOut Housings are no longer required for negative isolation rooms. 99.97% (HEPA) Filters, and HEPA Housings are required.

(Upstream of exhaust fan)

2. Orthopedic operating roomsk, bone marrow transplant operating rooms and organ transplant operating rooms require (3) filter banks.

- a. 30% efficiency
- b. 90% efficiency
- c. 99.97% (HEPA) terminal loca-

tion

3. Positive pressure isolation rooms require (3) filter banks.

It was concluded that the proper selection of filtration equipment in hospitals will result in lower operating costs and energy costs while providing significantly cleaner air to the occupied spaces. Graphs and data sheets depicting this were presented.

ON THE TECHNICAL SIDE

by: **J. Michael Burke**

The use of Hydrogen Peroxide for sterilization of various areas in Pharmaceutical Facilities has posed problems from a standpoint of down time and exposure to the respiratory systems of personnel.

New technologies are being developed and implemented into the manufacture of ULPA filters that impart a catalyst into the slurry from which ULPA media is derived. The catalyst becomes a permanent part of the ULPA media.

The combination of the ULPA media and the catalyst, when exposed to Hydrogen Peroxide converts Hydrogen Peroxide into water and oxygen. This innovation will be a significant step forward in reducing down time and protecting people.

ASHRAE RESEARCH PROMOTION UPDATE

by: **Narendra Amarnani, P.E.**

Research Promotion campaign is progressing as anticipated. Average society contributions have reached to 30% of the target of \$1.9M, so as our chapter's contributions.

We are very proud of affiliation with ASHRAE and what it stands for. Active participation of former and present members have made it possible to avail us the knowledge we need to progress in our careers. We owe it to ALL those who have been participating and ALL those who may find it worthwhile to join our society. For the continued success our group as whole and service to the humankind, you are urged to participate in any fashion or form suitable to your lifestyle.

We are deeply thankful to the following chapter members for contributing to Research Promotion as of 31-Jan-2001:

- Sudhir K. Agrawal
- Narendra S. Amarnani
- Craig J. Barnett
- Jag M. Berera
- Robert F. Brennan
- Laurence K. Brink, Jr
- Charles C. Brooks
- John Michael Burke
- John A. Clark
- William W. Clark, Jr.
- Jerry J. Conklin
- Gerrit Dekreek
- Vernon E. Denny
- Michael W. Gallagher
- Richard L. Gilbert
- Edward H. Gray
- Robert L. Heisler
- Chad Herrick
- Ibrahim L. Kassabgui
- Elbert E. Kelly
- Joshua Kheel
- Barney Klinger
- Donald R. La Marr
- Clayton A. Lampman
- John C. Larsen
- Max Lipshultz

- Thomas B. McKelvey
- Hugh A. McTernan
- Ray H. Morton
- Ralph R. Panting
- Kathleen M. Paulson
- Gary W. Price
- William F. Raleigh
- John Reuter
- Charles K. Richter
- Joseph L. Rigonan, Jr
- Ponciano R. Rongavilla
- Edward Saltzberg
- Lee Francis Sandahl
- Dr Manojit Sinha
- Martin Smilo
- Tseng-Yao Sun
- Glen C Szalay
- Victor M. Warren
- William Welch
- Robert Woods
- William J. Yang
- Yiufai M. Yung
- California Energy Design Inc.
- D'Autremont Helms & Associates Inc.
- J D Sales Company Incorporated
- Kevin A. Smola & Associates Inc.
- Key Air Conditioning Contractors Inc.
- Louis G. Horsefield & Associates
- PCI Industries Inc.

TECHNICAL FORUM SECTION

Living With It... Service Lessons in Engineering Design

by: **Michael Gallagher, P.E.**

(Be advised; this is an opinion piece)

What to do about air filter type and location in small HVAC units?? These units are often used in commercial applications, but generally do not have commercial filter capability.

DX units 5 tons and smaller often do not have a design that includes a 2" air filter. Some rely on accessory clips or some other questionable method to "sort of hold a 1" filter in place, but

2001 Spring Seminar

THE 2001 SPRING SEMINAR IS SET FOR APRIL 21ST

This year's seminar will be an Applied Psychrometrics and Airside Review. This will be a skills-sharpening seminar for those who regularly use psychrometrics (or should) in their career. The event will include working out a lot of actual psychrometrics problems, as well as an initial psychrometrics review. The last part of the session will consist of a discussion of field measurements that real service technicians can give you, and some practical example problems for taking common airside readings and determining actual system performance. You will need to bring pencils with erasers, a notepad, and a calculator.

This all day session will include coffee and lunch. The fee will also include the materials that you will receive.

PRICE: \$125

DATE: SATURDAY, APRIL 21, 2001

TIME: 8:00AM SIGN-IN; DONE & GOING HOME BY 5:00PM

**LOCATION: PRESENTLY SCHEDULED FOR:
DWP, 111 N. HOPE STREET, LOS ANGELES, CA 90012**

We will have to limit attendance to 100 due to facility size. We had over 120 people for this same seminar in 1992, so **HURRY AND GET YOUR SIGN UP** FORM SENT IN WITH THE MONEY!! SPACE IS LIMITED: FIRST COME, FIRST **SERVED**. If we can get a larger facility, we will do so and advise you, but that is not a sure thing at this point, so send in your form and money if you want a seat!

SoCal ASHRAE 2001 Spring Seminar

Name: _____

Company: _____

Phone No.: _____

Fax No.: _____

E-mail address: _____

**Please send the application & check to:
S&K Engineers
Attn: Chad Herrick
421 E. Huntington Drive, Monrovia, CA 91016**

2000-2001 SOUTHERN CALIFORNIA CHAPTER PROGRAMS

APRIL 3, 2001

Location: Les Freres TAIX
 Tech: ASHRAE Handbook Review "Bite-Size"
 Speaker: Mr. Phil Trafton, D.F. Dickerson & Associates
 Main: Multi-Story Non-Resident HVAC Design
 Speaker: Mr. Larry Sun, Tsuchiyama & Kaino

MAY 1, 2001

Location: Les Freres TAIX
 Tech: Field Capacity Measure & Applications
 Speaker: TBD
 Main: Efficiency 2001
 Speaker: Mr. Charles O'Connor, Dept. of Water & Power

JUNE, 2001: INSTALLATION DINNER/DANCE

Location: To be announced.

WESTERN SECTION PROGRAMS

MARCH 13, 2001

Location: To be announced.
 Speaker: Mike Erfuth Baltimore Air Coil
 Topic: Cooling Tower Fundamentals

APRIL 10, 2001

Location: Barefoot Bistro 545 Thompson Blvd. Ventura
 Speaker: Steve Alschuler Air Treatment Corp.
 Topic: ASHRAE 62-99 IAQ Code and Air Flow Measurement Products

MAY 8, 2001

Location: Mariann's Italian Villa 800 S. Broadway Santa Maria
 Topic: To be announced.

JUNE 12, 2001

Location: Josie's Four Winds 3425 State Street Santa Barbara
 Speaker: Ken Radtkey Blackbird Architects
 Topic: Green Buildings
 Dinner Reservations: Hugh McTernan, (805) 957-4932/Fax (805) 653-7260

HELP WANTED

Anybody wishing to place an ad in this column for an engineering or other position please submit your request to: JOE C. ABLAY, P.E. 10775 Business Center Dr. Cypress, CA 90630 (714) 816-1434/(714) 826-9592 fax

Please make a donation of \$50 per ad made payable to: ASHRAE Southern California Chapter

Others who are seeking employment may place an ad at no charge.

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9240 E. Firestone Blvd. Downey, CA

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Admission: \$25 per Person/\$40 per Couple

Reservations strongly suggested!

For more information, contact
Gail Ziello (909) 466-0890 or
Steve Rawski (714) 634-3246



From the Editor's Desk

by Joe Ablay

The success of our newsletter is due to the active participation of all members of this great organization. Your contribution through articles, advertisement and commentaries enhances both technical and professional development of membership and the public. Again, let's all get involved!

MEMBERSHIP WATCH

July 1, 2000 through December 2000

by: **Ted Hanft**

Paid up Regular Chapter Members:	255
Contributing Life Chapter Members:	65
New Society Members (to Nov 30):	41

Monthly Activity for December 2000

Paid up Regular Chapter Members:	10
Contributing Life Chapter Members:	0
New Society Members (for Nov):	10

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10775 Business Center Drive, Cypress, CA 90630
(714) 816-1434 / Fax: (714) 826-9592
joe.ablay@sbt.siemens.com

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Newsletter of the Southern California Chapter American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.

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JODY RUSLING, Executive Secretary
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