THE LONG ISLAND SOUNDER

January 2012

ASHRAE Long Island Chapter, Region 1...*Founded in 1957*

www.ashraeli.org

American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc.

Inside this issue:

President's Message

Happy New Year!! I'd like to welcome you all to the second half of the ASHRAE year, where we promise to have more great presentations. In December we had our annual Holiday Party, where all members eat and drink for free, and I hope all that attended had a nice evening. The Photography team, aka Rich Rosner & Don Kane took plenty of great pictures you can see in the newsletter!

Every January people make a new year's resolution, or a plan on what they want to focus on "being better at". I think as a group we should focus on being better communicators. Our board meets every month and is in constant contact with one another trying to make sure that the group as a whole feels like they are benefitting from being a member. In order to stay strong I urge each of you to pick a board member and tell them what you like, dislike or would hope to see out of the organization in the months and years to come.

This month our speaker will be Roy Hubbard, Jr. and he will be presenting on Chiller Optimization. Based in York, Pa., Mr. Hubbard travels extensively to present customer seminars and speak before industry and professional groups. Roy's experience spans over three decades, and is a noted expert on energy and energy calculations. Our group will also be having part 2 of our Back to Basics class, which is going to be given by Evans Lizardos. This means you will earn 2 PDH credits for attending the January meeting.

On another note January 21-25 is the AHSRAE Winter Meeting in Chicago. In last month's newsletter I noted a few of the courses that will be given during this week, but you can also visit www.ashrae.org for a full list of courses. If you do go to the conference, even if you just visit the Expo, please send me an email at carote@adehvac.com, as we get credit for the local chapter for each member that heads out to the show! The EXPO will be held at McCormick Place 2301 S. Lake Shore Drive, and is shaping up to be the largest AHR Expo ever, hosting more than 2,000 exhibiting companies from over 30 countries from around the globe.

I would like to mention the February meeting now, as it will not only be a joint meeting with the USGBC, but due to scheduling be on the third Tuesday of the month. Since this is not the usual meeting date please mark your calendars in advance for Feb 21, 2012. Paul Meyer P.E. will be speaking and it will also be Resource Promotion and Membership Promotion night. If you bring down a new member both you and that new member will eat for free!

I look forward to seeing you all on January 10th.

Carolyn Arote, President
Long Island Chapter

CHAPTER MONTHLY MEETING

DATE:	**Tuesday, January 10, 2012**
TIME:	6:00 PM - Cocktails/Dinner 6:30 PM - Back to Basics #2 6:45 PM - Dinner Presentation 8:45 PM - Conclusion
LOCATION:	Westbury Manor South Side of Jericho Tpke. 25 Westbury, NY 11590
FEES: Members - Guest - Student -	 $40.00 $45.00 $15.00

Reservations requested, but not required.

Call (516) 333-7117

Long Island Chapter Officers & Committees

ASHRAE 2011/2012 OFFICERS

POSITION	NAME	PHONE	FAX	EMAIL
President	**Carolyn Arote**	516.568.6550	516.568.6575	carote@adehvac.com
President-Elect	**Brian Simkins, LEED AP**	203.261.8100	203.261.1981	bsimkins@accuspecinc.com
Vice President	**Andrew Manos, LEED AP**	631.632.2791	631.632.1473	andym22@optonline.net
Financial Secretary	**Richard Rosner, P.E.**	631.737.9170	631.737.9171	rrosner@csfllc.com
Treasurer	**Thomas Fields, P.E., LEED AP**	212.643.9055	212.643.0503	thomas.fields@mgepc.net
Secretary	**Charles Lesniak, P.E**	516.484.1020	516.484.0926	charles.lesniak@leapc.com
Board of Governors	**Don Kane, P.E.**	631.737.9170	631.737.9171	dkane@csfllc.com
Board of Governors	**Andrew B. Dubel, P.E.**	212.967.7651	212.967.7654	andrew.dubel@leapc.com
Board of Governors	**Nancy Román**	516.568.6509	516.568.6586	nroman@adehvac.com

ASHRAE 2011/2012 COMMITTEES

COMMITTEE	NAME	PHONE	FAX	EMAIL
Programs & Special Events	**Brian Simkins, LEED AP**	203.261.8100	203.261.1981	bsimkins@accuspecinc.com
Membership	**Charles Lesniak, P.E.**	516.484.1020	516.484.0926	charles.lesniak@leapc.com
Chapter Technology Transfer (CTTC)	**Don Kane, P.E.**	631.737.9170	631.737.9171	dkane@csfllc.com
Newsletter Editor	**Liset Cordero**	212.643.9055	212.643.0503	liset.cordero@mgepc.net
Research Promotion	**Andrew Manos, LEED AP**	631.632.2791	631.632.1473	andym22@optonline.net
Historian	**Richard Rosner, P.E.**	631.737.9170	631.737.9171	rrosner@csfllc.com
Student Activities	**Andrew B. Dubel, P.E.**	212.967.7651	212.967.7654	andrew.dubel@leapc.com
Young Engineers in Training	**Charles Lesniak, P.E.**	516.484.1020	516.484.0926	charles.lesniak@leapc.com
Webmaster	**Thomas Fields, P.E., LEED AP**	212.643.9055	212.643.0503	thomas.fields@mgepc.net
Nominating	**Michael Gerazounis, P.E., LEED AP**	212.643.9055	212.643.0503	michael.gerazounis@mgepc.net
Reception & Attendance	**Rich Halley**	718.269.3809	718.269.3725	rchalley@trane.com
PR & Engineering Joint Council of LI	**Peter Gerazounis, P.E., LEED AP**	212.643.9055	212.643.0503	peter.gerazounis@mgepc.net
Golf Outing	**Peter Gerazounis, P.E., LEED AP** **Steven Friedman, P.E., HFDP, LEED AP**	212.643.9055 212.354.5656	212.643.0503 212.354.5668	peter.gerazounis@mgepc.net sfriedman@akfgroup.com

Young Engineers in ASHRAE (YEA)

We would like to welcome our new student chapter at Stony Brook University.

Board elections were held on November 30th with the following results: President – Patrick Montalto, Vice President – Michael Porto, Secretary – Amartya Barua, Treasurer – Nawang Palden. Andrew Manos will be the Faculty Advisor providing guidance for this newly formed club

We would like to thank Andrew and Greg Mueller currently a graduate student at SBU for their efforts initiating this club and elevating it to recognized university level. We appreciate their hard work and dedication to advancing education in the arts and science of HVAC&R at SBU. Students who are currently enrolled or soon to be enrolled in an engineering undergraduate degree should take a look at www.ashrae.org/scholorships . There are currently 13 undergraduate scholarships available ranging from 10,000 to 3,000 dollars!

For those enrolled in a BS Engineering or Engineering Technology program there are three 1,000 dollars scholarships available through the ASHRAE Long Island chapter. There is also an option for high school students who are continuing to an engineering related program. If you would like more information please take a look at our website www.ashraeli.org or see Andrew Manos.

The ASHRAE Senior Undergraduate Project Grant Program is still accepting applications. This program provides grants to engineering, technical and architectural schools worldwide with the goal of increasing student knowledge, learning and awareness of the HVAC&R industry through the design and construction of senior projects. Grants are to be used to fund equipment and supplies for senior projects and 2-year technical school projects that focus on ASHRAE-related topics. Grants may cover projects lasting from one academic term up to one year.

Learn More Here:
http://www.ashrae.org/students/page/743

Charlie Lesniak
YEA Chairman

Long Island Chapter - Past Presidents

1958	H. Campbell, Jr. PE	1985	Edward W. Hoffmann
1959	Clyde Alston, PE	1986	Jerome T. Norris, PE
1960	Sidney Walzer, PE	1987	Abe Rubenstein, PE
1961	Sidney Gayle	1988	Michael O'Rouke
1962	William Kane	1989	Mel Deimel
1963	Louis Bloom	1990	Robert Rabell
1964	Milton Maxwell	1991	Gerald Berman
1965	Will Reichenback	1992	Donald Stahl
1966	Joseph Minton, PE	1993	Ronald Kilcarr
1967	Irwin Miller	1994	Jerald Griliches
1968	Walter Gilroy	1995	Walter Stark
1969	Charles Henry	1996	Joe Marino
1970	William Wright	1997	Norm Maxwell, PE
1971	Louis Lenz	1998	Alan Goerke, PE
1972	Ronald Levine	1999	Frank Morgigno
1973	Henry Schulman	2000	Michael Gerazounis, PE, LEED AP
1974	Myron Goldberg	2001	Ray Schmitt
1975	John N. Haarhaus	2002	Steven M. Stein, PE
1976	Richard K. Ennis	2003	Andrew Braum, PE
1977	Kenneth A. Graff	2004	Claudio Darras, P.E.
1978	Evans Lizardos, PE, LEED AP	2005	Craig D. Marshall, P.E.
1979	Albert Edelstein	2006	John Nally
1980	Ralph Butler	2007	Peter Gerazounis, PE, LEED AP
1981	Robert Rose, PE	2008	Steven Friedman, PE, HFDP, LEED AP
1982	Timothy Murphy, PE	2009	Steven Giammona, P.E., LEED AP
1983	Leon Taub, PE	2010	Nancy Román
1984	Raymond Combs		

Chapter Monthly Meeting - Program for 2011/2012

September 13, 2011 * At Westbury Manor
Dinner Presentation – Cooling Tower Water Treatment Through Non Chemical Technologies
Presenter Leon Shapiro
****1 PDH****

October 11, 2010 ** At Westbury Manor*
Dinner Presentation – Application of Mixed or Hybrid Boiler Systems for Energy Efficiency
Presenter Tom Neill
****1 PDH****

Resource Promotion Night

Back to Basic Session I *****1 PDH*****

November 15, 2011 ** At Westbury Manor*
Dinner Presentation – NEW 2012 editions of the ICC Family of Codes and the impacts these have on future building design/build/maintenance market.
Presenter: Eli Howard
****1 PDH****

JOINT MEETING WITH SMACNA

Student Activities Night, Membership Promotion, & YEA Night
** Meeting will be held on 3rd Tuesday of the month.*

December 13, 2011
Holiday Party - Westbury Manor

January 10, 2012 ** At Westbury Manor*
Dinner Presentation – Primary/Secondary Vs VPF
Presenter: Roy S. Hubbard, Jr.
****1 PDH****

Back to Basic Session II *****1 PDH*****

January 2012
ASHRAE Winter Meeting
Jan 21-25
Convention Center, Chicago

February 21, 2012 ** At Westbury Manor*
Dinner Presentation-
Presenter: Paul Meyer, P.E.

*** Meeting will be held on 3rd Tuesday of the month.*

JOINT MEETING WITH USGBC ****1 PDH****

Resource Promotion Night
Membership Promotion Night

February 2012
NATIONAL ENGINEERS WEEK
Feb 19 through Feb 25

March 13, 2011 ** At Westbury Manor*
Dinner Presentation—
Presenter:

YEA Night

Back to Basic Session III *****1 PDH*****

April 10, 2012
ANNUAL FIELD TRIP

May 7th, 2012 ** Cherry Valley Club, Garden City, NY*
ANNUAL GOLF OUTING

May 15th, 2012 ** At Westbury Manor*
Dinner Presentation- Refrigeration The Now & Future
Presenter: Steven Friedman, PE

Student Activities Night
Refrigeration Night
** Meeting will be held on 3rd Tuesday of the month.*

June 12, 2011 ** At Westbury Manor*

PAST PRESIDENTS & OFFICER INSTALLATION

August 2012 - Chapter Regional Conference Region I
NY August 17-19

PAOE POINTS FOR 2011/2012

Chapter Members	Membership Promotion	Student Activities	Research Promotion	History	Chapter Operations	CTTC	Chapter PAOE Totals
299	0	0	1,025	250	520	375	2,170

Board of Governors Meeting Minutes

DATE: Tuesday, December 12th, 2011
LOCATION: Westbury Manor

Attendees: Carolyn Arote, Nancy Roman, Brian Simkins, Andrew Manos, Richard Rosner, Don Kane, Charles Lesniak, Richard Halley.

President Carolyn Arote called the meeting into session at 5:10 PM and the meeting was ended at 5:50 PM.

General: Carolyn Arote - The Board of Governors voted to donate 500 to the Lynn Bellenger Memorial Fund. We need to send out chapter assessment. And our tax extension. Everyone should sent out their articles ASAP. We should look into adding the ASHRAE Promotional Products on our website and newsletter. For people to know work ads in our newsletter are free for our members. Members can get job searches, and time to for students to start looking for internships. The Board of Governors will be looking for two new members to join us next year; know anyone?

Programs: Brian Simkins – We still need to fill one more program for the year. Steve Freidman PE will do the refrigeration Presentation in May. The presentation will be title "Refrigeration The Now & Future". Next Month is the second in Back to Basics Seminar with Evans Lizardos. February is the Joint USGBC meeting. AIA/CEU/ LEED Points will be available. We are still looking for DL for the March meeting. The field trip may be held at the super conducting transmission cable in Holbrook. Rich Gerby would like to do a vendor product showcase for Tower Enterprises.

Resource Promotion: Andy Manos – Has raised approximately $4820 and has met his goal of 30% for 2011-2012 Resource Promotion. The total goal is $13,882. And is making progress on the product directory book. He is coming along with the student chapter in Stony brook. The resource promotion nights are February, and May.

History: Rich Rosner – Wants to know how to display chapter history and photographs on our webpage. Alec Weiss is looking for regional chapters to have a complete history. Charlie is to finish scanning the chapter's documents and give them to Rich.

Treasurer: Tom Fields – Absent

Webmaster: Tom Fields – Absent. The Board of Governors would like to know how to get better access to the website. Charlie asked if we could all get email addresses through the website, and have those addresses chained to the title/position. The board of governors voted to renew our website domain for another 10 years.

Membership: Charlie Lesniak – is reviewing the membership reports. And will update his PAOE points this month.

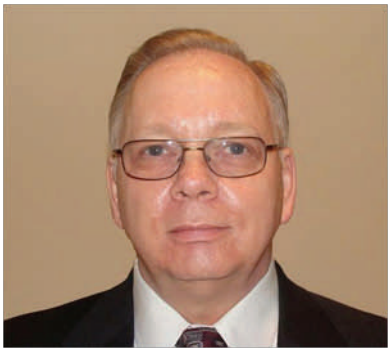
Student Activities: Andrew Dubel – Absent. The student chapter at Stony Brook received their charter from ASHRAE and is now recognized. There are currently 8 members with 4 on the board. They are not getting funding from the school, and would like to know how to attract new members. The Board of Governors for the Long Island Chapter voted and will donate pies for their meetings. We will look for PAOE Points for starting the Stony Brook Chapter.

CTTC: Don Kane – Our refrigeration presentation is in May with Steve Freidman PE. ASHRAE is looking for us to include their products promotional page in our newsletter and our web page, we will investigate this. Based on membership numbers our refrigeration committee should be 4 members. Charlie, Rich H, and Andy were voted onto the committee.

YEA: Charlie Lesniak – will look into attending the next YEA Leadership weekend. There are two back to the basics sessions left. And Charlie will look into doing a YEA night with the NYC chapter.

Charlie Lesniak, P.E.
Chapter Secretary, 2011-2012

January Program



Dinner Presentation

"Primary/Secondary Vs VPF "

Presented by

Roy S. Hubbard, Jr.
Johnson Controls, Inc.

Attendees Will Earn 1 PDH!

DATE:	**TUESDAY, JANUARY 10, 2012**		
Time:	6:00 PM - Cocktails and Hors D'ouevres 6:30 PM - Back to Basics, Part II 6:45 PM - Dinner Presentation 8:45 PM - Conclusion	**Fee:**	$ 40.00 Member $ 45.00 Guest $ 15.00 Student
Location:	**WESTBURY MANOR** (516) 333-7117 Jericho Tpke (South Side), 3/10 of mile east from Glen Cove Rd., Nassau County, NY. **Directions are posted at @ www.ashraeli.org.**		
Presentation:	This month's presentation will cover the differences between Primary/Secondary and Variable Primary Flow piping configurations, including a discussion about Low Delta T Syndrome and how each piping configuration deals with it. It also includes a discussion on design and control considerations for VPF systems. **Participants will receive 1 PDH credit.** **In addition Evans Lizardos, PE, LEED AP will be presenting Part II of the 'Back to Basics" series and all attendees will receive an additional 1 PDH.**		
About our Speaker:	**Roy S. Hubbard, Jr.** - For over 3 decades, Mr. Hubbard has been part of Johnson Controls Building Efficiency Business (formerly YORK), which provides commercial, industrial and institutional air conditioning systems, controls and service. He is a noted expert on energy and energy calculations and has authored numerous articles on energy topics for publications that include **ASHRAE JOURNAL, AIPE FACILITIES, ENGINEERED SYSTEMS, HEATING PIPING and AIR CONDITIONING, The AIR CONDITIONING HEATING and REFRIGERATION NEWS,** and **PLANT ENGINEERING** to name a few. His comments and opinions are sought frequently by editors of these and other leading, building-industry publications. He is a member of the Round Table Group's ExpertSource Team in the area of water chillers. Based in York, Pa., Mr. Hubbard travels extensively to present customer seminars and speak before industry and professional groups. He has prepared white papers and presented them to the International District Energy Association (IDEA) in 1997 on Chiller-Plant Energy Performance, in 1998 on Low-Flow Condenser Systems, and again in 1999 on Application of ARI Standard 550/590-98 in Multiple Chiller Plants. He is a member of ASHRAE, IDEA and ARI (Air Conditioning & Refrigeration Institute). Annually, he lectures on chiller system energy at the University of Wisconsin. In 2002, he represented Johnson Controls (YORK) on the History Channel's production of "Modern Marvels - Fire and Ice." Hubbard received his Bachelor of Science Degree in Engineering from the U.S. Military Academy at West Point in 1974 and completed five years of military service before joining Johnson Controls (YORK).		

Research Promotion

I would like to thank all the companies who have participated in the annual 2012 Product Directory of Manufacturers and their Representatives.

The Product Directory has been prepared as a service to all its members and as a service to the local HVAC industry. It will be will be made available to all ASHRAE and non-ASHRAE members at no-cost and can be obtained from our monthly meetings or directly from our web-site.

The Directory is intended to provide better communications between manufacturers and their sales representatives; engineers who specify products; contractors who purchase and install the equipment; and other interested parties. Product Directory listings are not limited to ASHRAE members and the listings are not to be considered as advertising or endorsement by ASHRAE of any product, manufacturer or representative.

This year's overall resource promotion goal is $2,001,900 with over 75 research projects on board. Our chapter is expected to raise approximately $13,881 towards the overall goal of which we have already raised $5,822. I am hoping I can count on the continued support of all of our past contributors who have generously supported us over the years.

I also look forward to gaining the support of new contributors this coming year. Please help support ASHRAE in any way you can.

I would like say 'thank you' to all the contributors listed below whom have already donated to ASHRAE this year:

INDIVIDUALS

Ms Carolyn Arote
Mr Andrew B Dubel
Mr Thomas Fields, PE, LEED AP
Mr Steven D Friedman, PE,HFDP,LEED AP
Mr. Don Kane, PE
Mr David Robert Jendras
Mr Donald Kane, PE
Mr Ronald J Kilcarr, PE
Mr Charles J. Lesniak, PE
Mr Andrew E Manos, LEED AP
Mr. John D Nally
Mr. Jerome T Norris
Mr Michael O'Rourke
Mr Richard Pearson, PE, LEED AP
Ms Nancy Roman
Mr Richard L Rosner, PE
Mr Raymond Schmitt
Mr Brian C Simkins, LEED AP
Mr James R Tauby, PE

COMPANIES

Albert Weiss Air Conditioning Products
ASHRAE Charleston Chapter
Berne & Bob Leventhal Inc
Building Cooling Systems
Gil-bar Industries
KLIMA NY
LPI Controls Inc
MV Controls Inc
PEPCO
Rathe Associates
Venco Sales Inc.
Wallace Eannace Associates, Inc

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Research Promotion (Cont'd. from Page 7)

CONTRIBUTIONS CAN BE MADE IN THE FOLLOWING WAYS:

1) You can mail your checks, made out to ASHRAE Research Promotion, to:

Andrew Manos
ASHRAE Research Promotion Chair
c/o Stony Brook University
Campus Planning, Design and Construction
Research and Support Services, Suite 160
Development Drive, Stony Brook, NY 11794-6010

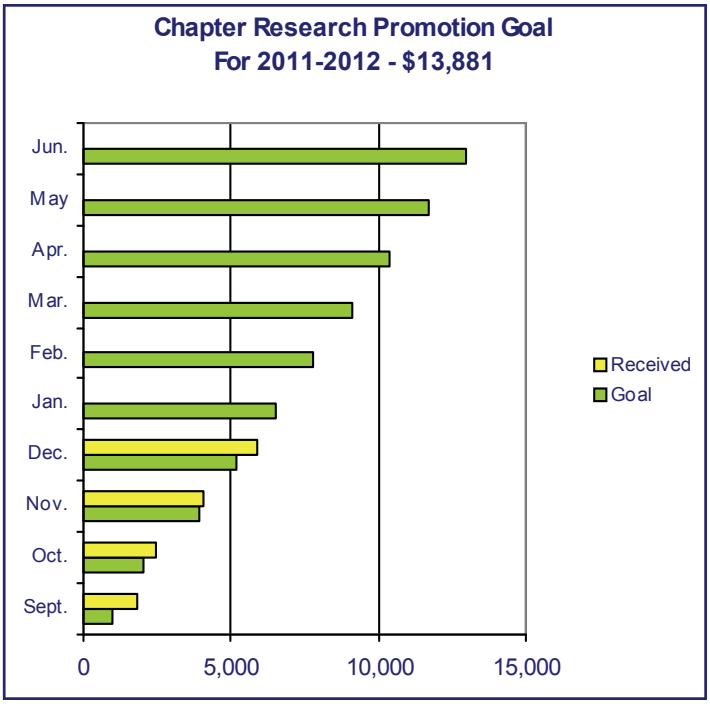
2) You can bring your check to any of the meetings and give it to me. I will mail it into headquarters.

3) You can contribute via paypal from the ASHRAE LONG ISLAND web site just click on the donate button.

4) You can contribute directly on-line. www.ashrae.org
**** Please make sure your accredit your contribution to the LONG ISLAND CHAPTER 006 ****

Thank you again for all your support!

Andrew Manos, LEED AP
Research Promotion Chair



CTTC - OPTIMIZATION OPTIONS - HOW TO CHOOSE YOUR CHILLER WHILE KEEPING YOUR COOL

Why is there a need to address chiller optimization? Aren't all of the critical factors addressed during design? Why is a system that may have been "state-of-the-art" in the past, now considered an energy hog?

All good questions, these. The answers, while not difficult, may not be the same for all applications. Depending on what one is trying to accomplish, "optimize" may be likened to the elephant being examined by multiple, blindfolded, individuals appearing to be a different thing to different people. A developer may want to build as quickly and frugally as possible; the owner wants to minimize operating costs; the occupants of a facility want to be comfortable and not experience drastic swings in temperature and humidity.

Why are there so many chiller installations which appear today to be terribly energy inefficient, which were once considered, if not top-of-the-line, at least quite acceptable? Times change….energy costs change….users' needs and expectations change. The key word here is change. If you always do, what you always did, you will always get what you always got!

In years past, when systems were designed using slide rules, nomographs and "rules-of-thumb", it was normal to oversize rather than undersize as one did not want to have a system installed which could not sufficiently cool….and who knows what additional cooling loads may appear from the time of design to the time of construction. If all of the capacity was not needed, it would be "throttled" back a bit, energy was cheap (or at least cheaper than it is today) and all would consider your design a success. These "brute force" designs were also, generally, the lowest first-cost compared to ones which, in the "long-ago", would be considered pushing the envelope (Note: "long-ago" may denote fifty years to a few months, depending on how dissatisfied the developer/owner/occupant - choose one - is with the installed system and what technological gem has appeared on the horizon).

All of the items we will discuss apply to new and existing installations; however, existing ones generally have more constraints than when starting from a clean sheet of paper. Economics is a powerful consideration, making it difficult to start from scratch when one already has significant investment in physical plant. So, where do you start? It is said that you can't control what you can't measure. Similarly, you cannot update and optimize a system unless you can identify what you have and what is wrong.

Loads – Identify the types and sizes of the cooling loads needed to be satisfied. If the loads are of a type that should have their own dedicated cooling systems (e.g. air compressors and hydraulic pumps), they should be removed from the chiller loop. If the size and occurrence of some or all of the loads are such that they can be satisfied by waterside economizers, consideration should be given to adding that capability.

Age of Chiller/ Piping and type of Refrigerants Used – It is generally not economical to replace recently installed equipment and piping purely from an economical analysis. However, if the physical plant is getting on in years and/or uses refrigerants no longer readily available or desirable from an environmental perspective, the opportunity for replacement with more optimum designs will be much easier to accomplish with a reasonable payback period. Typically a chiller more than 10 years old may be a candidate for replacement, especially if the building load profile has significantly changed since installation. If piping is in need of replacement, it is the ideal time to rethink the configuration with regard to system losses. Frequently, older installations have been modified and/or increased without thought as to the most efficient layout, just building upon the existing layout.

Ancillary Equipment – In addition to chiller and piping replacement, consider the valves and controls presently installed. Are they capable of more precise control and quicker response time? Are cooling towers, where used, capable of efficient operation? Would variable speed fans maintain cooling load, while reducing energy usage? As with chillers, there is no one-size-fits-all answer. Depending on cooling load the cooling tower characteristics dictate may dictate the liquid flow and air flow based on minimum acceptable turndown (typically 3:1) to avoid scaling issues. One should keep try to size valves to maintain the ability to accurately control flow, without introducing excessive losses.

Hydronic Configuration – Perhaps central to the question of whether to upgrade and how to do it is how the system is configured and how it can be changed to be more energy efficient, while supplying the required cooling load. Most of this effort will be directed to maintaining the correct ΔT conditions. It has been noted that if design ΔT conditions are not maintained, chiller efficiency can be decreased by up to 40%. Further, in many installations the system does not operate at the "design conditions" more than 5% of the time. Since chiller operation may consume up to 35-40% of the cooling system energy budget, improvements in chiller efficiency will pay large dividends in operational costs savings.

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CTTC (Cont'd. from Page 9)

One needs to determine, for the given installation, which topology makes the most sense:

- Primary (fixed)/Secondary (fixed)
- Primary Only (fixed)
- Primary (fixed)/Secondary (variable)
- Variable Primary (only)
- Variable and Fixed Primary (staged)

Each of these options need to be evaluated on what benefit they may provide in a particular application. Fixed Primary/ Secondary, once the norm, has fallen into disfavor (as has fixed primary only) as better controls and equipment are available to implement variable load schemes, permitting the elimination of bypass control valves and throttling control valves, which contribute to system pumping losses.

Use of variable load chillers in staged applications simplifies the staging control and minimizes chiller trips. Some additional instrumentation and control will be necessary to accomplish this, however, the elimination of the need to maintain minimum flow in "bypass" configurations will somewhat offset this cost. The Fixed primary/variable secondary (distributed) configuration may lend itself to installations with large air handling systems. Benefits include elimination of control valves with flow restrictions, while costing (first cost) the same as variable primary (only).

Controls – Newer control systems are available which, harnessing the computational power available at a reasonable cost, permit adaptive control to result in lowest kW per ton cooling, taking into account changing load conditions and ambient to vary flows, reset chiller and condenser water temperatures and stage multiple chillers to maintain operation at the most efficient design point.

With the installation of the proper instrumentation, control software can monitor system operation and, where variances from the norm are indicated, recommend corrective action to be taken. A side benefit to the newer controls is, it is claimed, easier start-up and "tuning" in comparison to older PID type systems, although some of this benefit may be due to the decreasing availability of resources who can "tame" the older systems.

Cooling Towers – Much of what has been said in regard to chillers will also apply to cooling towers. That is, use of variable speed pumps and fans, where not prevented by the operating limitations of the cooling tower construction, can have a beneficial effect on overall system efficiency. Proper coordination of the variable flow cooling towers and the variable load chillers will require the newer controls noted above.

Measurements and Data Gathering – The need to measure system and ambient parameters becomes more critical, when trying to optimize system operation. Classical application of "Bin" climatic data may not be sufficient to achieve an optimum design, requiring additional up-front measurement and calculation. However, the adaptive control systems, once operational, will continue to gather data and constantly finesse the system settings to achieve the best set points.

Conclusion – With all of the above technology at our fingertips, does this mean that we will no longer have to oversize systems to account for the unanticipated? No….but with the use of variable load systems, it will be possible to operate "oversize" systems at much more efficient levels. While the chiller equipment may not be operating at its maximum efficiency, the decrease in pumping losses in oversize piping and the elimination of many three way valves will contribute to an overall acceptable operation.

Postscript - Now that we have come this far, and know how to design more efficient chiller systems, we see that Intel has found that Data Center cooling may not be as necessary as previously thought. They have found that Data Centers can be operated at up to 95-100 ^{o} F without damage to the equipment (and maybe only a little damage to the people who have to service the equipment) resulting in an energy reduction of up to 65%. Intel's results indicate that Data Centers could be cooled with outside air in 95% of the world's locations. I guess that means that in the near future, our topic should be filtering and dehumidification of outside air.

Don Kane, P.E.
CTTC

Student Activities

Hope everyone had a great new year! Our first meeting of the new year will have a back to basics seminar with Evans Lizardos. This will be a great presentation for young engineers and students, and I encourage both to attend.

The ASHRAE winter meeting is rapidly approaching. If you are a student who will be going to Chicago, check out the ASHRAE Student guide to the conference. Find it at: http://www.ashrae.org/students/

Society scholarship are available for students who are currently enrolled or soon to be enrolled in an engineering undergraduate degree. There are 13 undergraduate scholarships available ranging from 10,000 to 3,000 dollars! Find more information at http://www.ashrae.org/scholorships.

The next student activities night will be on May 15th. We encourage students to attend this meeting, as it will be free for them. We look forward to seeing you all there.

Andrew B. Dubel, P.E.
Student Activities Committee Chair

Donate your old Handbooks
Please bring your old handbooks to the meetings for donations to our student members who do not have complete sets at this time. Rich Rosner will be collecting them.

Membership

Happy New Year to all…

A reminder please to those who are delinquent with your Society and Chapter dues, please send off your payment at your earliest convenience. Don't let your membership lapse.

We are having a good year with new member recruitment. We are hoping to get some YEA members, which is any member under the age of 30. Please help us to get some new young members, as they are the future of our society. If you would like to help with recruitment please come and see me…you can join the committee.

See you at our next meeting.

Charlie Lesniak
Membership Chairman

2012 Holiday Party Photographs






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