Energy Managers Workshop

Tuesday, June 18, 2019

The order of the presentations is subject to change.'

"Role of Industry in Climate Emissions and the Opportunities for Reductions through Energy Efficiency""

R. Neal Elliott
Senior Director of Research
American Council for an Energy Efficient Economy

Neal Elliott is the Senior Director of Research of the American Council for an Energy-Efficient Economy (ACEEE), coordinating ACEEE's overall research efforts.

Elliott has been with ACEEE since 1993, and is an internationally recognized expert and author on energy efficiency programs and policies, industrial energy policy, combined heat and power, and a frequent speaker at domestic and international conferences. He is the recipient of the 2014 Industrial Energy Technology Conference Energy Award.

Prior to joining ACEEE, Elliott was an adjunct associate professor of Civil and Environmental Engineering at Duke University and Senior Engineering Project Manager at the N. C. Alternative Energy Corp. (now Advanced Energy). Elliott received B.S. and M.S. degrees in Mechanical Engineering from North Carolina State University and was a Dean's Fellow and received a Ph.D. from Duke University. He is a registered Professional Engineer in North Carolina and holds six patents. Elliott serves as Treasurer of the Southeast Energy Efficiency Alliance and on the board of Industrial Energy Technology Conference.

Topic Discussion

International manufacturing companies are increasingly committing to targets for greenhouse reductions. Energy efficiency should be a foundational element of the portfolio to meeting these targets. This presentation will present the current state of industrial GHG emission, and present a variety of strategies that companies can implement to achieve energy efficiency reductions.

“Tools to Evaluate Steam Load Changes on Operating Plants”

James E. Robinson
DES Global, LLC

James E. Robinson PE, P.Eng., CEM, CEP is a founding member and Principal Project Engineer at DES Global, LLC. He is reponsable for projects in the US and Canada with over 40 years of experience in the design, construction and automation of industrial utilites and powerhouses. During that time he had design, construction, and startup reponsabilites at Catalytic Engineering, Honeywell, B&W, Gotaverken, Kvaerner, and Siemens Westinghouse. The objective of his work has been the application of advanced controls to reduce facility operating cost and emissions while improving overall system safety and reliability.

In addition, he is a board member of the IETC and the Pennsylvania Smart Energy Initiative (SEI).

Topic Discussion

Operating plants can be negatively affected by both environmental and business changes. An example is the Boiler MACT environmental program that adversely affected the use of onsite steam generation. That program resulted in utility system reliability reduction with cost increases that changed business unit steam load profiles. This presentation is lessons learned and how to measure and mitigate the effect on the utility operating systems.

“Industrial Integrated Portfolio and Site Energy Master Planning - Creating a Roadmap to Breakthrough Energy Productivity”

Peter Garforth
Garforth International

Peter Garforth heads a specialist consultancy based in Toledo, Ohio and Brussels, Belgium. He advises major companies, cities, communities, property developers and policy makers on developing competitive approaches that reduce the economic and environmental impact of energy use. Peter has long been interested in energy productivity as a profitable business opportunity and has a considerable track record establishing successful businesses and programs in the US, Canada, Western and Eastern Europe, Indonesia, India, Brazil, Japan and China. Peter is a published author, has been a traveling professor at the University of Indiana at Purdue, and is well connected in the energy productivity business sector and regulatory community around the world.

Topic Discussion

The industrial energy manager is under increasing pressure to simultaneously deliver high levels of energy efficiency, substantially reduced energy cost risk along with challenging reductions in greenhouse gas emissions. Depending on the location, the pressures will be different and may come from internal corporate goals, or regulatory and community dynamics.

In parallel, the range of economically viable technical choices is growing. Energy data capture, control and reporting options, like all information technology, are cheaper and more comprehensive than would have been imaginable a decade ago. Clean and renewable energy supply choices, both on- and off-site, are becoming cost competitive and coming rapidly into the mainstream. Regulation, incentives and wider market forces are moving the world’s energy system to be more decentralized, technically flexible and less carbon intensive. This is an energy transformation that will accelerate rapidly in the coming years.

The energy manager needs new planning approaches to assess how these growing choices can be combined to deliver reliable, clean and cost-effective energy at vastly higher levels of performance, while meeting acceptable levels of investment return. Various scenarios will need to be compared and supported by a decision-making process that selects the one that is the best compromise between often conflicting economic and environmental goals.

The session will discuss an approach to create risk-adjusted long-term energy master plans for industrial sites. Through optimizing investments in efficiency, energy distribution and energy supply, energy productivity gains well in excess of 30% can typically be achieved with attractive financial returns. At the same time energy supply reliability can be improved and major greenhouse gas reductions achieved. It will also discuss how industrial sites can operationally benefit from being part of a wider energy and climate planning with their host communities, as they strive to meet equally challenging energy and emissions goals.

Originally developed for entire communities and large complex facilities, the approach is also proving to be of value for much smaller enterprises. Real world example of both large and small facilities will be used.

“Strategic Planning Considerations for Energy Efficiency Upgrades of Fan Systems: Do you go with Retrofit or New?”

Vern Martin
FlowCare Engineering Inc.

Vern Martin is a senior mechanical engineer and partner in FLOWCARE Engineering Inc.; experts in fan and blower technical consulting services. While Vern began his career working for a large industrial and commercial fan manufacturer as a design engineer, he has spent the past 30 years leading FLOWCARE in providing independent consulting engineering services to industrial users of large fan systems. These services include fan performance, efficiency and reliability optimization as well as troubleshooting problems such as vibration, noise, aerodynamic control and mechanical failure.

Topic Discussions

Quite often, decisions concerning energy upgrade modifications are made on the simple basis of ‘how much energy is reduced’ and ‘what does it cost to implement’. Is that all there is to it?

For many energy reduction targets, the decision-making process will need to address the issue of whether to retrofit the equipment that is already in place or completely replace it. There are many factors that influence how a retrofit versus new decision is made and these may range from the basic to the complex. This presentation will address some of the strategic planning considerations with a focus on fan systems and includes a discussion of the element of risk as it pertains to several important areas. The objective of this presentation will be to outline these considerations in a ‘rule of thumb fashion’ for the benefit of those who may be working their way through this planning process.

“Energy Projects: Barriers to Implementation””

Mike L. Stowe
Advanced Energy

Mike Stowe is a Senior Energy Engineer with Advanced Energy in Raleigh, NC. He has over 30 years of experience in manufacturing plants including roles as production manager, maintenance manager, and plant engineer.

Mike has extensive experience with many industrial processes and all types of plant facility systems. He works with utilities, industrial equipment vendors, and manufacturing plant teams to find the best technical and most energy efficient solutions for industrial processes.

Mike has developed and delivered numerous presentations on industrial energy efficiency and other related topics for utilities, industrial trade associations, and technical groups.

Mike is a graduate of Georgia Tech, Mechanical Engineer, 1982, and the US Navy, Nuclear Power School and Submarine Officer Training, 1983.

Topic Discussions

Energy managers, along with their energy consultants are very good at identifying projects for energy savings across the commercial building or industrial manufacturing site. There are many common areas that almost always have good potential for energy savings, including HVAC, compressed air, boilers/steam, process heating and cooling, and lighting. In a lot of cases, there is no problem finding lots of opportunities for energy efficiency improvement, but frequently there are problems in getting these projects implemented.

Typically, the two biggest barriers, in one form or another, tend to be time and money. This presentation will explore specific barriers and also discuss strategies to overcome these barriers by helping the client with financial analysis, capital planning and implementation. Energy mangers are great at leading the horse to water. This presentation will help us learn how to get the horse to drink.

“Energy Management, Where to Begin”

Thomas Theising
Sustainable Energy Solutions, LLC

Tom Theising serves as the President of Sustainable Energy Solutions, LLC offering energy and reliability consulting services to industry. Tom has over 38 years of experience in industry and has facilitated roughly 400 industrial energy assessments. Prior to his current role, he retired from BASF Corporation where his efforts were recognized by the American Chemistry Council with over 47 Annual Energy Awards and having, cumulatively, generated greater than one billion dollars in energy savings during his career.

He is a Citadel graduate with a B.S.in Electrical Engineering and has an M.S. in Organization and Management. Tom is also a member of the Association of Energy Engineers where he is recognized as a Certified Energy Manager and a Certified Demand Side Management professional.

Tom was recognized as a global expert in the field of energy management by BASF Corporation, having been recognized with 47 American Chemistry Council Annual (ACC) Energy Awards during his tenure, including numerous other awards. Tom as the founder of the BASF’s energy management program is credited with energy management efforts that, cumulatively, have generated greater than one billion dollars in savings during his career.

Topic Discussion

During a recent Energy Manager’s Workshop an attendee, after having attended a full day of presentations by multiple experts questioned, “but where do I actually start my energy program?”. Several presenters in the room added their input to my response to this question each supporting the other. It was then that I realized that with all our years of energy management experience we may have been overlooking presenting the most basic information clearly. This presentation will summarize where to start, as addressed by over two dozen published authors from the perspective of someone who started one of the worlds most accomplished energy programs before such publishing’s were available.

Tom will summarize the approaches described by many of the greatest minds in the energy management field and add to these with his perspective and experience while working over 30 years for the largest chemical company in the world.

“What You Can Learn from Review of Your Electrical Energy Bills”

James A. Eggebrecht
Assistant Director, Texas A&M University Industrial Assessment Center
Executive Director, Industrial Energy Technology Conference

Jim Eggebrecht is an Associate Research Engineer at the Energy Systems Laboratory at Texas A&M University. He is the Assistant Director of the Texas A&M University Industrial Assessment Center and the Executive Director of the Industrial Energy Technology Conference (IETC).

As the Assistant Director of the TAMU IAC, he has performed over 450 industrial assessments at various industrial facilities. He has over Forty-three years of experience in both the public and private sector, seventeen years of experience with Conoco oil and gas production, and twenty-six years with the Energy Systems Laboratory.

The IAC at TAMU has recently completed 780 industrial assessments through the US Department of Energy IAC program. Since Jim’s involvement in TAMU IAC, savings of over $38,000,000 have been identified by the IAC at TAMU and over 250 students have been trained in industrial energy management.

Jim received a B.S. in Mechanical Engineering from Oklahoma State University and a M.S. in Mechanical Engineering from Texas A&M University.

Topic Discussion

One of the first steps in evaluating a facility’s energy usage is to collect and review the electric utility bills themselves. When you have these in-hand how can you read the information for understanding what is presented and then use the data to calculate meaningful parameters? What information is obvious and what may be hidden in the rate tariffs employed by the utility to bill your plant for the electricity usage? What additional data can be requested from the utility that is valuable for detailed analysis? What major cost savings can be determined by a review of your electrical bills and how do you evaluate their savings impact? These and other questions will be answered by this topic presentation.