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Save Energy Now

DOE Ready to Help Industry Cut Energy Use 25% in 10 Years

The U.S. industrial sector can reduce energy use by as much as 25 percent in 10 years by taking advantage of tools and programs offered by the U.S. Department of Energy, according to Susan Glatt, with DOE's Office of Energy Efficiency & Renewable Energy, who spoke at a recent Citizens Thermal customer meeting.

"The industrial sector in the U.S. consumes 32 percent of the nation's energy use. DOE's Save Energy Now Industrial Technologies program is designed to reduce industrial energy consumption by 25 percent in 10 years. This will be accomplished through adoption of energy-efficient technology and practices, vigorous research and development of new energy efficiency technologies, and the promotion of an energy efficiency and carbon management culture in the industrial sector," Glatt said.

Glatt explained that DOE's Save Energy Now program is working to make the U.S. industrial sector the world leader for energy efficiency by forming partnerships with industry, state energy offices, utilities, academia and non-profit organizations.

In fact, DOE is asking industries to take the Save Energy Now Leader Pledge to reduce energy use 25 percent over the next decade. By taking this pledge, industries enjoy the following benefits:

- Reduced energy costs and carbon footprint
- Mitigation of volatile energy costs
- Enhanced competitiveness
- Recognition as an industry leader for energy efficiency

As a Save Energy Now Leader, DOE will provide industries with:

- Energy baseline assistance
- Industry energy benchmark comparisons
- Plant or financial feasibility assessment
- Technical and financial assistance
- Savings measurement and verification

"DOE and our partners at the state level have a repository of over 2,300 energy incentives, tools and resources for commercial and industrial managers to use. We have hundreds of financial and technical assistance opportunities for industrial customers to take advantage of to help them get energy efficiency projects off the ground," Glatt said.

For example, in 2009 DOE provided more than 2,000 no-cost energy assessments to U.S. industrial sites that yielded about $1.3 billion in energy savings, including 119 trillion BTUs of natural gas saved. These assessments also resulted in a reduction of 11.2 million tons of carbon dioxide emissions.

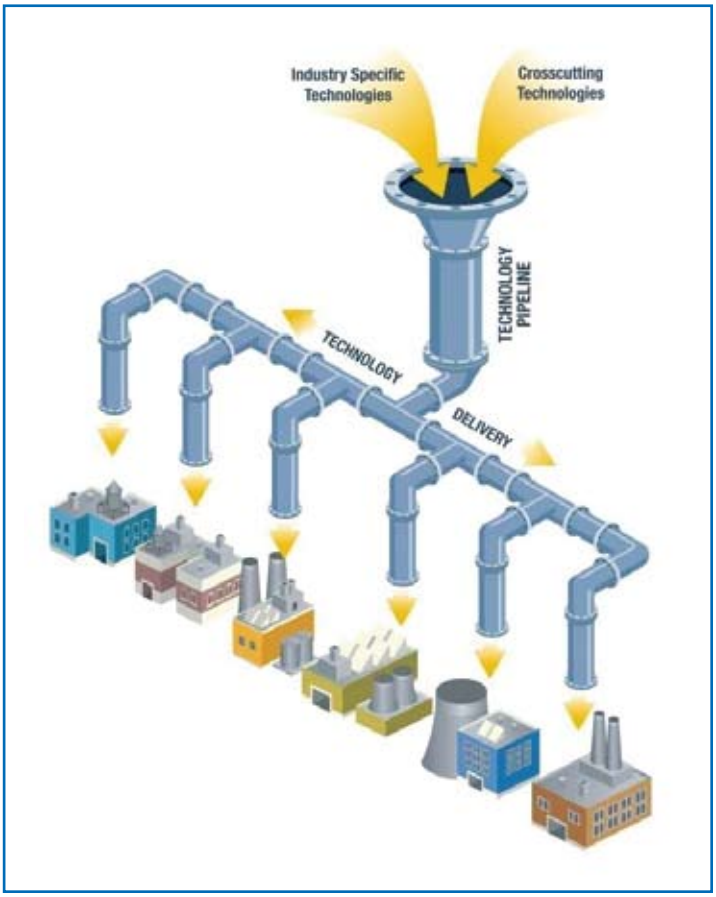
Among the most noteworthy energy efficiency partners on the state level is Purdue University's Technical Assistance Program (TAP), according to Glatt. Over a three year period TAP will provide:

- **Awareness** -- Conferences, newsletters, websites, and demonstrations
- **Training** -- Workshops, on-site training and mentoring
- **Implementation** -- Energy Efficiency Practitioner program
- Technical Assistance -- Feasibility studies, resource connection and organization
- **Development and demonstration** -- Identification of projects for pre-commercial development and demonstration
- **Certification** -- Piloting of the ANSI Management System for Energy and the pending ISO 50001 Energy Audit standard

Industrial customers interested in energy efficiency assistance from DOE or the Purdue TAP should consult the following websites:

Save Energy Now:
www1.eere.energy.gov/industry/saveenergynow

Purdue TAP:
www.tap.purdue.edu



Topping Turbines Raise Efficiency of Perry K

To reduce operating costs and improve utilization of high-pressure steam, Citizens recently installed two 1.7 megawatt topping (back pressure) turbines at its Perry K Steam Plant.

The new turbines represent a partial replacement for the plant's No. 5 generator, which was originally installed by Indianapolis Power & Light in 1936 when the plant provided much of the electricity for downtown Indianapolis. In the late 1970s, this generator was retired and associated steam flow was diverted to pressure reducing valves when it was determined that other power plants could more efficiently meet downtown's power needs.

"Today, economics and the focus on plant efficiency have changed, and the cost to install these new back-pressure turbines is economically feasible. Due to changes in system steam flow requirements, the new units do not produce as much electricity as the old generator, but they function much the same. Depending on customer steam demand and plant electrical load, these units are operated today in conjunction with the House Turbine to realize a reduction in purchased power and demand charges and to optimize the use of 650 psig steam," explained John Havard, project lead for the $2.7 million installation.

Mike Williams, Operations Auxiliary Operator, and John Havard, Project Manager, ensured the new topping turbines at Perry K provided efficiency improvements to the plant.

Environmental Management System Implementation Begins

Citizens Thermal's Steam Operations Department is implementing an Environmental Management System (EMS) to identify, reduce and control the company's environmental impacts.

Employees at Perry K received EMS awareness training in August, marking the official kick-off of the implementation phase. EMS development took approximately 10 months, and was done using a team of employees from the Steam and the Environmental Stewardship departments.

The EMS is structured against the ISO14001:2004 program. The ISO standard focuses on identifying aspects of plant operations that may have an impact on the environment. Supervisors will be reviewing operating procedures and work instructions with employees, and objectives have been identified designed to mitigate the environmental impacts associated with our operations.

During the 2009-2010 EMS cycle, the EMS implementation team will review alternative fuels for fleet vehicles to reduce emissions. Among the fuels to be reviewed is B20, a blend of diesel fuel with a soy-based product. The team also will conduct engineering assessments in other areas to support future objectives.

"The "Plan-Do-Check-Act" cycle associated with the EMS provides an opportunity for Citizens to seek continual improvement and to further demonstrate our commitment to the environment by identifying, reducing and controlling our environmental impacts," said Ann McIver, Director of Environmental Stewardship. "Citizens' Environmental Policy, adopted in May 2009, outlines our commitment to environmental stewardship through such actions as training, communication, and partnerships in the community to foster initiatives that benefit the environment."

For more information about the EMS, please contact McIver at amciver@citizensenergygroup.com.

Maintaining Steam Traps

Most plant and facilities professionals with steam systems in their care have asked questions including the following: What are the signs of a malfunctioning steam trap? How often should traps be inspected? What inspection techniques are available? What testing instruments should we use? How do we start a steam trap maintenance program? What kind of training resources are required?

Steam trap basics

Basically all steam traps have the same functions. They allow condensate and non-condensable gases to escape while holding steam in a device where a thermal or heat transfer process occurs. A regulator controls the input side of the process and the steam, after releasing energy to the process, condenses and reverts back to its liquid state. The purpose of the steam trap is to retain steam in the heating element and to release the non-condensable gases and condensate. The principal design consideration is to balance the condensing rate and the import rate of the control device on the input side with the exiting condensate.

Ultrasonic detectors translate ultrasonic emissions into sounds the human ear can hear, allowing technicians to detect failing steam traps before they fail completely.

Stephen Banyacski president of Nicholson Steam traps (Walden, NY) emphasizes the need to choose the appropriate steam trap. “Properly sized traps relieve the condensate, react quickly to changes in load, and trap the steam while allowing air and other non-condensable gases to escape,” he says.

Finding malfunctioning traps

As with any mechanical device, a steam trap can malfunction. “If the steam trap fails closed,” the device that should be draining will flood and the heat transfer process will stop, and whatever product is being produced ... will no longer be up to the required quality standards. If the trap fails open, there will be a waste of energy, steam will not be completely consumed or condensed in the exchanger and steam will blow through.” Banyacski notes that a plume of steam escaping from the condensate receiver or from some part of the condensate return system signals such a condition.

He adds that it is difficult to determine whether a steam trap has failed just partially open, indicating a slow leak and a developing failure. “Such a ... failure could persist for quite some time without any outward sign. Therefore, a maintenance person should make periodic surveys of the installed base of steam traps. Banyacski emphasizes that steam blowing through a trap indicates that the trap needs to be repaired or replaced.

Inspection methods

Oftentimes, a misapplied steam trap (too small, the wrong design) will malfunction. Ultrasonics, infrared temperature measurements and visual inspection have proven useful to maintenance personnel in checking for malfunctioning steam traps. Of the three, ultrasound is the most reliable. Visual inspection requires an inspector to let a steam trap discharge to atmosphere. However, doing that changes the parameters of the closed system and, therefore, can be unreliable.

There are enough variables in the system - back pressure, for example - so that temperature is not the most reliable indicator either. Portable infrared thermometers provide close estimations of temperature on valves, traps, and coil heaters. These devices are also useful for spotting conditions such as heat loss, the need for insulation, overheating, overloads, and cooling failures. Thus, an infrared thermometer should be used along with ultrasound.

Traps that have failed completely open are easy to detect, but the object is to find failing traps before they fail completely.

Ultrasonic testing can do that. In essence, using an ultrasonic instrument is like putting the inspector inside the steam trap and piping system allowing him to detect a leaking steam trap. Ultrasonic detectors translate ultrasonic emissions ... into sounds the human ear can hear.

Technicians who use ultrasonic detectors on a daily basis can achieve accuracy that exceeds 98%. And regarding frequency of inspections, process components of equipment, as well as drip main stream traps should be checked twice a year. Heating steam traps (in facilities that use steam for space heating) should be tested annually and instituting a reporting system to keep tabs on the location, type, size, capacity and condition of all traps in a steam system is imperative.

A steam trap.

Citizens Donating Land to Play Ball Indiana

Citizens Energy Group announced recently that it intends to donate more than 25 acres of land valued at nearly $1 million to Play Ball Indiana for the development of the Citizens Field of Dreams, a multi-use community sports complex. Carey Lykins, President & CEO of Citizens Energy Group, made the announcement at Play Ball Indiana's Annual Sandlot Lunch. Play Ball Indiana is a non-profit organization that promotes youth baseball and softball in affiliation with Major League Baseball's Reviving Baseball in Inner Cities (RBI) program.

The land will be donated by Citizens Resources, a wholly-owned Citizens subsidiary, pending a formal agreement with Play Ball Indiana. The land is located along Pleasant Run Parkway north of Citizens' former coke manufacturing plant. Play Ball Indiana plans to develop the community sports complex over the next three years at a cost of more than $6 million.

Exact details of the sports complex are still being finalized, but it is expected to include baseball, softball and football fields, a jogging/walking trail, a children's playground, a concessions stand, indoor sports training facilities, offices for Play Ball Indiana and community meeting spaces. The complex also will include a promenade dedicated to Oscar Charleston, a Negro Leagues star player and manager who is the only Indianapolis resident to have been inducted into the Major League Baseball Hall of Fame.

"We are thrilled to make this land donation to Play Ball Indiana and are honored they have decided to name the community sports complex Citizens Field of Dreams. We believe Citizens Field of Dreams will be a wonderful green space that people of all ages can enjoy. We see this new community sports complex as the foundation for long-term revitalization of this area of the southeast side," said Lykins.

Mike Lennox, Executive Director of Play Ball Indiana, adds "Play Ball Indiana is extremely grateful to Citizens Energy Group for its generous donation of land. Citizens Field of Dreams will enable us to provide a safe place for Indianapolis youth to participate in healthy athletic competition and develop a passion for the history and tradition of America's pastime. We envision a state-of-the-art "sandlot" that will serve the surrounding neighborhoods and become a central hub for our summer RBI league. We also envision that the facility will be used for year-round clinics and by community organizations and schools. With this donation, Play Ball Indiana will be empowered to provide life-changing alternatives for Indianapolis' inner-city youth."

Employee Spotlight - Steve Berry

What is your job title?
Coal and Ash Handler

What is your favorite part of the job?
The people I work with because there is never a dull moment.

What did you do before coming to Thermal?
Domestic Loader: Loaded blast furnace coke into rail cars.

What are your hobbies outside of work?
Spending time with family and friends; cat-fishing and four wheeling,

Steve Berry

Steam and Chilled Water Service Telephone Numbers

Dave Toombs,
Thermal General Manager,
317-693-8805 (office)
317-727-1342 (cell)

John Eddington,
Director, Facility Operations
317-236-6710 (office)
317-695-0688 (cell)

Bob Purdue, Plant Manager (Steam Operations)
317-693-8701 (office)
317-695-0512 (cell)

Bob Asher,
Manager Customer Services & Distribution
317-693-8704 (office)
317-517-0688 (cell)

Sharon Connell,
Customer Service & Billing Representative
317-261-8794

Bob Taber, Foreman,
Customer Service & Metering
317-693-8883 (office)
317-695-7924 (cell)

Toll Free Number - Customer Service & Billing
877-313-2467

Bob Anderson,
Manager Operations & Maintenance
317-693-8753 (office)
812-946-6373 (cell)

Todd Fuller, Facilities Manager (Chilled Water Operations)
317-236-6702 (office)
317-695-2099 (cell)

Joe Ray,
Operations Supervisor
Chilled Water Operations
317-236-6703 (office)
317-431-2541 (cell)

Other telephone numbers: Marketing - Steam and Chilled Water

Bill Petty,
Manager Market Development
317-927-4742 (office)
317-431-3358 (cell)

Steam and Chilled Water Service Emergency Contacts
In the event of a steam or chilled water emergency, Citizens Thermal can be reached at the following numbers:

Steam Plant Operations Emergency 24-Hour Number (Steam Operations Control Room)
317-261-8804

Shift Supervisor's Office
317-261-8819

Ron Pinkins,
Operations Supervisor
317-693-8807 (office)
317-431-4414 (cell)

Lindsay Lindgren,
Vice President, Gas & Steam Operations
317-927-6001 (office)
317-696-6377 (cell)

Chilled Water Plant Operations Emergency 24-Hour Number (Chilled Water Control Room)
317-236-6700