

Energy Management Can Lead to Savings

Energy management is a significant way for companies to save money, according to Colin Christy, CIRAS energy management specialist. An effective energy management system includes developing an energy policy, designating who is responsible for energy, and monitoring energy usage.

An energy audit can provide specific recommendations on cost-effective changes. “Manufacturers often just pay their energy bills and don’t look at what affects those costs,” says Bob Coacher, CIRAS account manager. “Getting an outside perspective could lead a company to significant savings.”

CIRAS partners with the Iowa State University Industrial Assessment Center (IAC) to provide that outside perspective by conducting 20 energy audits a year. “CIRAS and the IAC form a great partnership,” adds Christy. “CIRAS account managers market the IAC services as they call on companies. Then they contact me, and I work with IAC to schedule the audits.”

A new five-year DOE contract began in October 2011 with an emphasis on educating students on energy efficiency while providing companies with recommendations for potential savings.

Approximately 20 engineering students were hired to conduct the audits. “We hire students from a variety of engineering disciplines,” Christy says. “They have to learn a lot about the different subsystems—for example HVAC (heating, ventilation, and air conditioning), compressed air, lighting, and electric motors—and then learn ways to make them work efficiently.”

Six students and a faculty member conduct each audit. They tour the plant and then break into teams to examine the various subsystems. Back on campus, calculations are done to determine how much energy could be saved by making various changes.

“Every plant is different,” Christy says. “In one plant we might determine that with some minor modifications, waste heat could be used for climate control; and in another plant a modification to the lighting system might easily pay for itself in energy savings.”



The recommendations are then compiled in a report and sent to the company. Later the company is surveyed to find out which recommendations have been implemented.

“This is a great opportunity to learn about green manufacturing and sustainability,” says Bradley Coffman, an industrial and manufacturing systems engineering graduate student. “Air compressors, for example, are very costly to run, but understanding how they operate helps you find ways to make them work more efficiently.”

With an ultimate goal of becoming an engineering consultant, Coffman says the audits are giving him experience working with a variety of companies and learning about a wide range of manufacturing processes.

In January an audit was conducted at NSK-AKS Precision Ball Company in Clarinda, Iowa. The company was looking at upgrading the building management system, HVAC, and air compressors, according to Howard Cabeen, technical leader at the company. “And our energy rates were being raised for the first time in 18 years. When that happens, you look at ways to help yourself.”

Cabeen adds that he was very impressed with how the audit was conducted. “The team had great questions that helped them come up with ideas on how we could save money. We see these things every day, so getting their perspective is really valuable. It was amazing how much I learned just being involved that day. I look forward to getting the report.”

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