Industrial Assessment Center

BRADLEY UNIVERSITY

Department of Mechanical Engineering

Assessment Information Package

Office of Industrial Technologies

U.S. Department of Energy

Energy Efficiency and Renewable Energy

BRADLEY UNIVERSITY
INDUSTRIAL ASSESSMENT CENTER
THE DEPARTMENT OF
MECHANICAL ENGINEERING
PEORIA, IL 61625
Phone: (309) 677- 3720
Fax: (309) 677-1401

COMPANY INFORMATION:

Company Name:_____

Company Address:_____

Name of Company Contact:_____

City:_____ County:_____ State:_____ Zip Code:_____

Phone: (____)_____ Fax: (_____)_____

Company Website:_____

Principal Products:_____

Annual Production (Units, lbs, etc.):_____

Annual Sales: _____Annual Utility Bills* (approx.)_____

S.I.C. Code:_____Number of Employees: _____

Please list safety equipments required for a tour of the plant?_____

Is there a conference room that the audit team may use on the day of the visit? Yes No

Please provide directions to the plant from Peoria: _____

Please indicate number of buildings in the plant and approximate floor areas:_____

Circle the process equipment that you have in your plant: Air Compressor; Ovens/Furnaces; Boilers; Cooling Towers; Refrigeration; Washers; Painting Booths; Spot Welders;
Other _____

Circle the uses of water in your plant: Sanitary; Washing; Cooling Equipment;
Other _____

Circle the waste streams produced in your plant: General Refuse; Cardboard; Wooden Pallets; Metal Scrap; Paint Waste; Other_____

* P.S. Please send copies of your gas, water, and electric bills for twelve consecutive months.

What is an Industrial Assessment Center and What Can It Do for You?

Industrial Assessment Centers provide energy, waste, and productivity assessments at no charge to small and mid-sized manufacturers. Centers are funded through the Department of Energy, Office of Industrial Technologies (OIT), Industrial Assessment Center Program. Assessments help manufacturers maximize energy efficiency, reduce waste, and improve productivity. On average, recommended actions from an assessment result in annual cost savings of about $55,000.

Assessments are performed by Bradley teams of engineering faculty and students from one of the 26 participating universities across the country. After some preparatory exchange of information, the IAC team conducts a one day site visit and performs an assessment. Within 60 days, a report detailing the analysis, findings, and recommendations is sent to the client. In six to nine months, follow-up phone calls are made to the plant manager to obtain feedback on the quality of the report and implementation status of the recommendations.

Features of the IAC Program

- Assessments are provided at no direct cost to clients.
- Experienced engineering faculty and trained students.
- The client has no obligation to act on any recommendations.
- Proprietary information of the client is protected.

What are the Program Benefits?

- Objective information is provided to help make the plant less wasteful, more productive and more energy efficient.
- Engineering students receive hands-on industrial experience.
- Universities build valuable local industry relationships that help to maintain a practical focus in their engineering curriculum.
- Manufacturers can assess the latest technologies and practices.

Technical assistance is available through the OIT *Office of Technology Implementation.*

IAC Assessments Deliver Objective, Results – Orientated Input

There are numerous products on the market offering improvement energy efficiency. Plant managers are often wary that claims are inflated and payback periods are exaggerated and are therefore reluctant to implement new technologies.

The IAC assessment offers objective information to help companies make well informed decisions. Participating faculty and students offer carefully prepared recommendations without bias. IAC faculties are restricted from consulting for pay with the client companies they advise for a period of two years after the assessment.

What are the Company Eligibility Requirement for an IAC Assessment?

IAC clients are small and medium-sized manufacturing plants (companies?) within standard Industrial Codes 20-39. They should reside within 150 miles of a host university campus and must meet the following criteria:

- Gross annual sales below $100 million.
- Fewer than 500 employees
- Annual energy bills more than $100,000 and less than $2,000,000
- Lack of in-house technical staff to perform the assessment themselves.

IAC – Recommended Actions Lower Costs and Raise Productivity

On average, recommended actions from an assessment visit identify annual energy savings of about four billion Btu and cost savings of about $55,000.

Experience shows that about half of the IAC recommendations are implemented. They typically range from shifting electricity usage to lower rate time periods to installing radiant heaters in place of forced air heating systems to changing lighting. Such deceptively simple efficiency measures deliver substantial returns in terms of cost savings and enhanced productivity.

Getting More Effective All the Time

The experience and expertise developed though the IAC program will soon be more broadly available through workshops and publications disseminated to manufacturers. First to be published will be waste assessment case studies by the Environmental Protection Agency (EPA) Risk Reduction Engineering Laboratory in Cincinnati, Ohio. Next scheduled is a manual with software that will support life cycle analysis and planning. This will be followed by a best practices manual distilling the lessons learned from the thousands of assessments conducted to date.

A Remarkable Record of Success

Between 1978, when the program was begun, and July 2000, more than 9,400 small and mid-sized manufacturing companies were visited and energy assessment recommendations were made that exceeded a total of 94 trillion British Thermal Units (Btu). What does this mean? If all the recommendations were implemented, it would account for a decrease in harmful greenhouse gas emissions equivalent to 200,000 tons of carbon. To date, the government has spent $27 million on the program, and the industry cost savings exceed $500 million.

By their implementation of IAC recommendations, companies in 43 states and from all industrial manufacturing sectors have significantly improved their operations. At the same time, through their participations, these manufacturers have supported the national goals of reducing the threat of global climate change, retaining skilled jobs, and increasing U.S. manufacturing competitiveness in the global market.

Controlling Waste: A Low-Cost, High-Yield Investment

The DOE Office of Industrial Technologies (OIT) concentrates its programs on the nation's most energy-intensive industries. OIT's Industrial Assessment Center (IAC) program helps manufacturers in many of these industries find ways to prevent or control waste, in many cases by taking simple steps.

Pollution prevention often has a higher rate of return than most investments in your company is already making. IAC recommended investments in waste control measures present little or no risk, and many require little capital. Furthermore, implementing new manufacturing processes to reduce waste and pollution can often boost productivity and reduce disposal fees.

Contact Information

To inquire about a company's eligibility for a no- charge IAC assessment, call today- and start saving energy and money.

D. Paul Mehta, Ph.D. mehta@bradley.edu
Director of BU IAC program
Professor and Chairman of Mechanical Engineering Department at Bradley University
(309) 677-2754

Ellie Najafi, MBA snajafi@bradley.edu
Business Specialist-BUIAC
(309) 677-3720

Case Studies show that IAC Assessments deliver results

Tool Company Saves with Better Air Supply Strategy

By switching to a smaller air compressor and more efficient air nozzles, a manufacturer of oilfield rock drill bits saved more than $120,000 a year in energy costs.

The assessment at this company resulted in six energy related recommendations with total projected savings of $151,800/year, projected savings for two waste related recommendations totaled $12,300/year. The total projected savings amounted to $164,400/year. The company saw real savings of $154,300/year.

Wax Plant's Improved Steam System Saves Money and Energy

Following an energy assessment, a wax refiner and producer is saving over $371,000 and 148,110 million Btus of energy each year. The plant implemented the assessment recommendations at a cost of $99,000.

Most of these savings, which had a payback period of just over three months, came from improvements in the plant's steam system. Steam leaks and faulty steam traps were required modifications were made to return condensate to the boiler, and steam and condensate lines were insulated. The plant also replaced incandescent lamps with high-efficiency high-pressure sodium lamps, an undertaking that paid for itself in about ten months.

VISIT DAY ACTIVITIES

Bradley University
Industrial Assessment Center
Director: Dr. D. Paul Mehta

During the visit day, the focus will be on cost savings opportunities related to Energy Conservation, Waste Minimization and Productivity Enhancement.

Items that the team will be considering during the visit are based on the information distilled from the utility bills (Electricity, Gas, and Water) and the information on the pre-audit form, regarding:

- Lighting
- Air Compressors
- Furnaces/Ovens
- Boilers
- HVAC
- Waste Streams

Visit Procedure:

- The team will need a tour of the facility, starting from the point at which the raw materials arrive and following the production process to the point where the final product leaves.

- After the tour, our team will have a brainstorming session at this time, the team will identify all possible areas upon which they will focus attention.

- After identifying areas of attractions, team members will return to the facility and gather pertinent data form relevant equipments and processes.

- At the end of the audit, the team will return to Bradley University and begin developing the report. Within one week, the company will be contacted to request further information that is needed or could not be obtained on the day of the visit. The final report will be available within 60 days.

- Finally, approximately three to six months following delivery of the report one final contact with the company will be made to determine how well the report has served the company and how many, if any, of the assessment recommendations (ARs) have been implemented.

Comments:

- The visit usually requires 6-8 hours(depends on the plant size)

Industrial Assessment Center
Bradley University
Department of Mechanical Engineering
1501 West Bradley Avenue
Peoria, IL 61625-0303

Director: Dr. D. Paul Mehta

Fax: (309) 677-3453
Telephone: (309) 677-3720

UTILITY BILLS RELEASE AUTHORIZATION

Please release copies of appropriate utility bills to authorized personnel of the Bradley University IAC.

Company: _____

Location: _____

Person Authorizing Release: _____

Signature & Date: _____

Electric Utility: _____

Location: _____

Phone Number(s): _____

Account Number(s): _____

Gas Utility: _____

Location: _____

Phone Number(s): _____

Account Number(s): _____

Water Utility: _____

Location: _____

Phone Number(s): _____

Account Number(s): _____