



Southwest United: Oklahoma State University Industrial Assessment Center saves company \$60,000

Assessment Date:
November 11th, 2005

Benefits:

- Implemented 5 of 9 recommendations
- Recommendations have increased efficiency and reduced energy costs.
- Recommendations identified over \$60K in total energy savings.
- Can achieve paybacks between 0 and 2 years.

Applications:

The southwest United assessment team discovered opportunities to decrease energy usage and increase productivity, thereby increasing capacity, improving product quality, and enhancing corporate competitiveness. In order to decrease energy usage and increase productivity, the assessment team focused primarily on increasing the efficiency of the equipments, such as lights, steam systems and compressed air systems, used by the manufacturing company. The results at Southwest United will guide energy assessments at similar facilities where the savings can be replicated.



Summary

Southwest United is an industry leader in providing metal finishing solutions to manufacturers in a variety of industries; including aerospace, defense, oil and gas, and medical. The Tulsa facility consumes over one-half million dollars worth of energy each year in serving its customers' needs. *The Oklahoma State University Industrial Assessment Center* worked with Southwest United to help reduce its energy costs. Results include annual savings of over \$60,000 dollars.

Company Background

Southwest United Industries is an industry leader in providing single source metal finishing solutions as well as aviation component repair and overhaul services. Services are provided from a modern 100,000 square foot facility in Tulsa, Oklahoma as well as a 25,000 square foot facility in Oklahoma City, Oklahoma. Southwest United Industries was formed in 1953 and has established itself as a processing center of excellence to a worldwide customer base for the aerospace, defense, oil and gas, industrial, and medical industries.

Southwest United's services include anodizing, non-destructive testing, painting, chrome plating, nickel plating, cadmium plating, shot peening, HVOF and Plasma thermal spray and precision machining and grinding. Southwest United provides outstanding customer service. Its OEM approvals include most leading aerospace companies including the Boeing Company, Bell Helicopter, Goodrich Landing Gear, Lockheed Martin, Messier Dowty, Gulfstream, Honeywell, Parker Aerospace, Cessna, Hawker Beechcraft, and Vought Aircraft Industries.

Southwest United has a highly skilled team of coating engineers, production engineers and support staff with many years of experience and offers unrivaled quality and service. The Southwest United team is committed to a system of continuous improvement in providing customers with improved coatings solutions while continually reducing the costs and lead times.



Notable Observations

The IAC assessment was performed in 2005. A team of students and faculty from Oklahoma State University conducted an Industrial assessment funded through the DoE Industrial Assessment Center Program. The team leader was Dr. Wayne Turner, Assistant Director of the IAC. Team members were Scott Frazier, Wisit Kumphai, Haiyan Zhao. The team made use of infrared measurements and imaging as well as compressed air and blower technologies. The assessment was successful in identifying several energy savings recommendations. In addition, this student team all graduated with Ph.D.s in 2006 and 2007.

Results

Southwest United management was pleased with the assessment. The assessment produced nine recommendations. These recommendations included gas savings through improved boiler operations, additional insulation, steam trap maintenance, boiler water preheating, compressed air system management, adjustable frequency drives, and lighting upgrades. During the implementation report follow-up, the IAC team learned that Southwest United has implemented five of the nine recommendations for annual savings of approximately \$60,000.

“We all have the responsibility to save energy wherever we can as it is a benefit for the environment as well as for the bottom line. OSU’s team of industrial engineers was very thorough in assessing potential energy savings in our plant. I would highly recommend that every company take advantage of these services provided through the DOE.”

- Mr. Jon Barrows, Southwest United Industries

Table 1. Opportunities at Southwest United

Recommended Action	Annual Energy Savings	Annual Cost Savings	Implementation Cost	Payback (years)
Clean the boiler and install	3,077 MMBtu	\$23,600	\$18,000	0.8
Insulate condensate and makeup water tanks	148 MMBtu	\$1,135	\$587	0.5
Install boiler blowdown heat recovery system	460 MMBtu	\$3,531	\$5,250	1.5
Install adequate compressed air storage and loop air lines	756 MMBtu	\$13,876	\$18,230	1.3
Install variable frequency drives on thermal spray dust collectors	1,259 MMBtu	\$23,096	\$42,002	1.8
Totals	5700 MMBtu	\$65,238	\$67,869	1

FOR ADDITIONAL INFORMATION
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