



## PLASTICS MANUFACTURER FINDS LARGE SAVINGS IN IMPROVING OIL HEATER BURNER EFFICIENCY

### Summary

The North Carolina State University Industrial Assessment Center was asked to perform an energy assessment at the Intertape Polymers manufacturing plant in Danville, VA. This assessment was done in conjunction with Danville Utilities, the local municipal electrical and gas supplier. Opportunities for saving electricity and natural gas were identified by the assessment team and reported to plant management. After review, several recommendations were selected for implementation, resulting in a natural gas cost savings of over \$200,000/yr. (or about 30% of the annual natural gas bill). Spurred on by this success, the plant then formed an energy team that has identified many more projects, of which over \$100,000/yr. in additional savings have already been implemented.

### Company Background

Intertape Polymers is a manufacturer of packaging tape, located in Danville, VA. With the state of Virginia transitioning to a deregulated electrical power market, Danville Utilities was faced with wholesale electric costs that rose 80% in one year, which equated to a retail electric rate increase in excess of 40%. To alleviate the impact, Mr. Kevin Martin of Danville Utilities asked the NCSU IAC to work with its largest customers, including Intertape Polymers, to identify opportunities to reduce energy

### **BENEFITS:**

- ◆ Burner tune-up program, combined with a general cleaning of the heat transfer surfaces reduced gas usage by 30%, or \$200,000/yr.
- ◆ Formed an energy conservation team to spearhead additional savings opportunities. To date these additional savings have totaled more than \$100,000/yr.
- ◆ Conservation team model expanded corporate wide, multiplying the savings.

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consumptions and costs. A team from NCSU, led by Drs. Herbert Eckerlin and Stephen Terry was brought in to help.

## Assessment Approach :

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The rising cost of electricity made identification of electrical savings opportunities a priority. With the NCSU IAC's expertise in combustion and boilers, Dr. Eckerlin also lead a team to investigate conservation opportunities for the oil heaters, the major user of natural gas in the facility. The additional focus on natural gas savings proved to be as beneficial with the increased volatility in natural gas markets spurred by hurricane Katrina shortly after the study was complete. Volatility in the natural gas markets persist, further enhancing the potential savings.

### Oil Heaters

Extensive measurements of stack temperature and flue gas composition were made for each oil heater. High stack temperature and low excess air was measured for most of the units. The results suggested that a burner tune-up and removal of soot would be in order for each unit. The recommendation was made to have tune-ups performed and for the heat transfer surfaces to be cleaned. This was accomplished, resulting in a \$200,000 reduction in the cost of gas.

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## **Energy Teams and Replication of Results**

In addition to the savings resulting from improving the oil heater efficiency, management from the plant formed an energy conservation team, as a direct result of the IAC assessment. The process has resulted in a cultural change towards energy that has been adopted as a new corporate philosophy across the entire organization. The team has been very proactive in identifying projects, and to date has implemented additional projects with savings of over \$100,000/yr.

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## **More projects are in the works, including:**

- Installation of T-5 lighting in place of metal halide fixtures,
- Modifications to the solvent still,
- Occupancy sensors in areas, and
- Measures to reduce plant electrical demand

Corporate management has taken notice and is creating teams at plants around the country. Training for this team was performed at the Danville Regional Center for Applied Technology and Training. The City of Danville and Virginia Philpott Manufacturer's Extension Partnership program also scheduled a boiler efficiency improvement workshop, presented by NCSU IAC Director Dr. Herbert Eckerlin, concurrently to maximize the benefits of the training sessions.

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