The Environmental Evolution of a Manufacturing Firm

RACHEL ROGERS

For a Connecticut firm that manufactures close-tolerance precision parts, environmental responsibility has evolved in the last 20 years from something imposed by regulators to a way of life embraced by the company and celebrated as a key differentiator. Now the company has positioned itself as a vendor that can meet or exceed all U.S. and European environmental standards, placing it at a distinct competitive advantage.

Catalyst for Environmental Change

Connecticut Spring and Stamping (CSS) is a Farmington, CT-based company that manufactures springs, metal stampings, fourslide/multislide/vertislide, and assemblies from both wire and sheet metal. After winding, bending, stamping and grinding operations, many of the products must be cleaned and degreased before a final finish is applied.

By the mid-1990s, the parts degreasing operations had become a financial and environmental burden. The 1960s-era vapor degreasers necessitated purchase of huge quantities of expensive virgin tetrachloroethylene (perc), new regulations tightened permissible air emissions and made waste perc disposal much more costly, and concerns about the health implications of worker’s exposure to perc meant reducing emissions or installing a venting system.

Facing tightening air emission regulations, CSS made a serious effort to find alternatives, eventually deciding to purchase two state-of-the-art Pero Model 2501A batch vacuum degreasers with an in-line still to recover valuable perc from the unit's waste. The new units' improved design halved virgin perc purchases and cut perc vapor emissions by 70 percent. The fully contained unit discharges no water, producing only a very small chemical residue that is processed in accordance with hazardous waste disposal regulations.

The new turnkey system allowed CSS to change its hazardous waste generator status from large-quantity generator to small-quantity generator, which came with very welcome reductions in overhead and regulatory requirements. Reduced tetrachloroethylene purchases netted savings of nearly $40,000 a year, and hazardous waste disposal costs were reduced by $7,500. In addition, CSS virtually eliminated air emissions from the prior system. Finally, dramatically reduced odors removed the need for personal protective equipment or an exhaust system.

The results of the new system far exceeded expectations, and are seen by Chuck Thomas, CSS's vice president of operations and environmental officer, as the single most significant factor that shifted the company's thinking, and set it on its current path of going above and beyond requirements to doing what is best from an environmental point of view.

"We knew our old equipment needed to be replaced, and we had a variety of lower cost options, but we decided to go for this top-of-the-line system for the sake of our employees, the environment and to set us up for improved manufacturing processes to keep up with the times," said Thomas. "The results opened up our eyes to the extended benefits of environmental compliance."

In a final testament to the importance of the achievement, the Connecticut Department of Environmental Protection wrote a Pollution Prevention Study about the system in 1998, making CSS a veritable poster child for investing in environmental excellence.

CSS Extends Success

After its success with its foray into cutting-edge environmental equipment, CSS has moved to a situation in which it goes over and above every existing Connecticut requirement, actively looking for an environmentally preferable alternative for every chemical or substance used in the plant. It has been cited in numerous customer audits as well ahead of other similar vendors in environmental compliance.

"We do not ship anything that is not environmentally compliant, nor do we allow any chemical in the plant that is dangerous to employees or hazardous," said Thomas. "We do not even allow samples into the plant without first doing an MSDS review." Thomas explains that every hazardous substance brought into the plant increases the possibility of a spill, or emissions to the air or land, or exposure to workers. He gives the example of acetone, which is not allowed in the plant.

On a couple of occasions, CSS has turned away business when the customer insists

upon using a particular hazardous chemical, rather than a suggested substitute. Overall, the company believes it has gained more business than it has lost by being so attuned to environmental and hazardous waste concerns. Thomas adds that CSS is always looking for newer and better options for chemical substitutions, but is careful to make sure that new options are thoroughly vetted before being accepted for use.

According to Thomas, CSS used to require sewer permits to allow discharge of processed water into the sewer system, but now all processed water is evaporated into clean steam. Also, sludge is no longer placed in the sewer system, but is removed by an environmental disposal firm.

In addition to the attention paid to hazardous waste substitutions, and the reduction in wastewater disposal and air emissions, Thomas conducts weekly and monthly audits for storm water runoff, spill prevention control, drum area inspection and spill preparedness. Reuse and recycling of corrugated packaging materials is also an integral part of the facility's operations.

As a certified trainer, Thomas trains 40 people internally for annual hazardous waste materials certification, including such topics as hazardous communications, solvent safety, hazardous waste management, spill response and DOT security.

"We are continually looking to the next advance in environmental compliance, which is becoming increasingly important to many Fortune 500 companies," said Thomas. "In addition to U.S. rules, we comply with European Restriction of Hazardous Substances Directive (RoHS), as well as REACH (Registration, Evaluation, Authorisation and Restriction of Chemical substances) standards as part of our cost of doing business."

Source URL (retrieved on *07/28/2014 - 10:20pm*):
http://www.chem.info/articles/2012/03/environmental-evolution-manufacturing-firm