



Flex-N-Gate Forming Technologies, LLC

Karl Haapala, Mechanical Engineering Graduate Student
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Project Title: ISO 14001 Designation

Mr. Karl Haapala was assigned to Flex-N-Gate Forming Technologies, LLC, located in Warren, Michigan. The company is an automotive prototype shop that produces aluminum and steel automotive stampings. Major processes included pattern and mold making, casting and die-making, CNC milling, stamping, laser cutting, and polishing.

Karl was very successful at helping the company to develop and implement an Environmental Management System (EMS) for ISO 14001 registration, which resulted in the discovery of P2 and energy efficiency (E2) opportunities. Participation in the EMS development led to several additional recommendations to the company that improved production operations, monitoring environmental aspects, and a procedure is in place for chemical approval.

Karl also investigated a new technology application for facility lighting that resulted in potential energy savings of up to \$60,000 per year, with payback in two years of continuous operation. The strategy would involve changing exit light bulbs, front office, shop restroom fluorescent lamps and ballasts, and the installation of new fluorescent fixtures in the shop and warehouse. These recommendations for P2 and energy efficiency options mesh well with the continuous improvement of an EMS and show commitment to environmental responsibility. .

