Project Overview

Industrial Assessment (IA) Team
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Major: Mechanical Engineering
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Summer Projects

This summer's project included providing waste assessments to industrial companies within 150 miles of Lincoln, Nebraska. Tasks included providing secondary containment alternatives for a chemical and hazardous waste storage area, analyzing compressed air systems for leaks and more efficient practices, reassessing businesses visited by interns in past summers and providing assistance to Industrial Placement and Small Business interns that needed help.

Waste Assessments

One reassessment was performed for a manufacturing company in Nebraska City that had been visited by the entire Pollution Prevention Program (P3) class during the 2004 summer. This reassessment was performed to evaluate how the pollution prevention suggestions offered by the P3 class were being implemented and what kind of impact those suggestions were having. Two new waste assessments were also performed. One was for a manufacturer of electronic connections in Lincoln and the other was for the same manufacturing company in Nebraska City that had the reassessment performed.

Results

Some of the recommendations provided in management reports include:

- Fixing leaks in compressed air lines and equipment,
- Installing additional fluid storage capacity for secondary containment of spills, and
- Replacing wet pipe fire sprinklers with preaction or carbon dioxide fire suppression systems.

The most significant results from the summer come from the compressed air analyses that show that correcting the inefficiencies of compressed air usage could save significant amounts of electricity, which in return saves businesses large sums of money. Table 1 shows the pollution prevention suggestions given to industrial companies and the benefits that could be realized upon implementation.

Table 1: Pollution Prevention Suggestions and Potential Benefits

Pollution Prevention Suggestion	Potential Waste Reduction	Benefits Beyond Waste Reduction
Fix leaks in compressed air system and perform regular checkups and maintenance	• 648,272 kWh in reduced electrical usage	• Save up to $27,162 from reduced electrical costs • Reduce wear on compressors since they will run less often • Reduced noise pollution in plant
Add more fluid storage volume to current secondary containment	• Prevent 12,700 gallons of potentially contaminated water from release from the chemical storage room	• Prevents expensive cleanup costs • Improved regulatory compliance • Decreased company liability
Convert wet pipe sprinkler system to preaction or CO_2 fire suppression system	• Prevent 12,900 gallons of water from release and contamination	• Prevents expensive cleanup costs • Improved regulatory compliance • Decreased company liability