



Waste Minimization: Increased Profits and Productivity Harris Corporation

■ \$125K Savings

Annually

■ Exempted from CAA
and EPCRA Section 313
Requirements

Implementing small projects
that demonstrated the result-
ing savings to management
established credibility and
opened the door to greater
funding for waste minimization

What is the Harris Corporation?

The Broadcast Division of Harris Corporation manufactures radio and television transmitters. Their manufacturing process released several hazardous air pollutants and hazardous chemicals such as 1,1,1 trichloroethane (TCA), methylene chloride, and methyl ethyl ketone that were used as cleaning solvents, thinners, and degreasers.

What Did They Accomplish?

Harris implemented a broad range of waste minimization initiatives that reflect the company's environmental policy. Harris' savings resulting from all of its waste minimization efforts total about \$125,000 annually.

Environmental Achievements

Harris' pollution prevention and waste minimization program is broad in scope and has enjoyed numerous successes...

- Alteration of the paint mixing process to a batch process reduced wastes from 1/4 gallon to less than a cup per batch, contributing to a reduction in waste paint generation

from 3,000 gallons per year to about 900 gallons per year.

- Installation of a solvent distillation unit also contributed to waste paint reduction.
- Replacement of TCA with isopropyl alcohol during circuit board cleaning eliminated waste TCA.
- Replacement of methylene chloride in the vapor degreaser with an aqueous solution eliminated 25,000 lbs. of air emissions per year.
- Implementation of a closed-loop water supply for a spot welder cut water use.
- Replacement of an old, larger-than-necessary compressor reduced overall energy consumption by 4%.
- Replacement of two 45 kw water heaters with a single gas heater slashed energy use.

Regulatory Relief

Because they eliminated methylene chloride from their vapor degreaser, Harris avoided the need to apply for a Clean Air Act (CAA) Title V Permit and is not subject to Emergency Planning and Community Right-to-Know Act

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(EPCRA) Section 313 requirements. The company is now on its way to being regulated as a RCRA small quantity generator. Also, by not using chlorofluorocarbons or Class I ozone depleting substances, Harris avoided the mandatory labeling requirements under the CAA. The elimination of methylene chloride obviated the need for additional ventilation in the metal finishing room.

The Implementation Process

The driving force behind implementation of Harris' environmental efforts was a corporation-wide emphasis on the need for quality environmental compliance. As those efforts matured, Harris transitioned from a regulatory-based approach to waste minimization and pollution prevention, whereby the environmental health and safety organizations contribute to the company's bottom line.

Harris continuously evaluates its waste streams and processes, and performs annual formal evaluations to develop three-year, rolling strategic plans. Pollution prevention and waste minimization efforts are incorporated into the business unit's overall annual operating plan. The plan is considered a living document and its goals are subject to change. Current goals are to:

- Reduce solid and hazardous waste;
- Continue compliance with environmental safety regulations;

- Reduce toxicity of metal finishing chemicals;
- Reduce utility costs by 10% per year; and
- Increase quality.

Most ideas were generated in house. However, when the company eliminated its methylene chloride vapor degreaser and switched to an aqueous degreaser, it contacted the Illinois technical assistance program for an analysis of available aqueous degreasers.

Economics: Costs and Payback

Reductions in paint waste have resulted in enough savings to pay for the changes several times over since 1992. Reduction in water consumption resulting from implementing a closed loop system on the spot welder has saved about \$14,000 in water and sewage fees per year, cutting the division's annual water costs by 15%. The spot welder project paid for itself in less than three months. Savings in the electric bill resulting from replacement of the oversized compressor are about \$20,000 per year, representing 4% of the division's electric bill. Replacement of the two 45 kw water heaters saves \$5,100 per year.

Hurdles

The biggest difficulty was in securing project funding from upper management. Manager of Facilities and Environmental Compliance Andy Edgar's solution was to establish the necessary credibility for

obtaining project funding. He accomplished this by implementing small projects that targeted "easy money" and demonstrated the resulting savings to management. This established credibility and opened the door to greater funding.

Words to the Wise

Mr. Edgar advises that managers wishing to implement waste minimization **focus on trying to add value to the company.** This helps to keep the projects from being viewed as a necessary evil.

In addition, he is a proponent of tapping non-management employees who "...have a thorough knowledge of their job, and credible ideas of how to develop and implement improvements."

