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## Pollution Prevention

**Governor's Pollution Prevention  
Award Recipient  
Liebel-Flarsheim Company**

By reducing the use of certain chemicals and modifying manufacturing processes, the company is realizing its goal to do whatever is necessary to be environmentally responsible.

**Governor George V. Voinovich**

The Governor's Awards for Outstanding Achievement in Pollution Prevention have been presented since 1986. Liebel-Flarsheim Company was one of seven recipients to receive the Award in 1992. The sixth annual awards were presented in the Cabinet Room of the Statehouse on October 13, 1992, by Governor George V. Voinovich. These awards are designed to recognize outstanding commitment to improve Ohio's environment through pollution prevention. Evaluation criteria included: the overall effort to reduce waste at the source, recycle or recover materials, or conserve energy; soundness of approach; cost-effectiveness; ability of the program to serve as a model for others; and effectiveness in promoting prevention as the preferred long-term approach.

**What is Pollution Prevention?**

Pollution prevention is the use of source reduction techniques to reduce risk to public health, safety, welfare and the environment and, as a second

preference, the use of environmentally sound recycling to achieve these same goals. Pollution prevention includes waste minimization, avoids cross-media transfers (of wastes and/or pollutants), and is multi-media in scope, addressing all types of waste and environmental releases to the air, water and land.

**Liebel-Flarsheim Company**

The Liebel-Flarsheim Company, Cincinnati, Ohio, was recognized for facility-wide pollution prevention activities that emphasize employee awareness and involvement. Liebel-Flarsheim is a manufacturer of urological x-ray tables, grids, specialty x-ray products, head stands, angiographic injectors and syringes. The company was established in 1917 and employs about 300 people.

**Pollution Prevention Activities**

In 1987, Liebel-Flarsheim developed its own computer "right-to-know" material tracking system.

This led to a complete listing and description of the materials and waste in the plant, which triggered a plant-wide environmental management program. The company actively participated in U.S. EPA's 33/50 Program, prompting several pollution prevention efforts related to solvent use.

Liebel-Flarsheim asserts that the key to environmental responsibility is employee awareness and involvement. The company credits the employees for much of its waste reduction success. The past three years, workers have met each month with area supervisors in an environmental "quality circle." A quarterly vice presidential audit provides a direct input to manufacturing management.

The company has reduced the use of 1,1,1-trichloroethane by 40% since 1987. In 1987, 31,400 pounds of the solvent were released, compared to 19,000 pounds in 1991, and 5,000 pounds in 1992. Vapor degreasing is being replaced by aqueous

cleaners. When it is feasible, ultrasonic cleaning with an aqueous solution is used. Liebel-Flarsheim is also working with suppliers to manufacture parts in a process that minimizes cleaning prior to shipment. In addition, proper environmental controls used by suppliers are taken into account in Liebel-Flarsheim's purchasing process.

Although Liebel-Flarsheim switched to water-based paints in 1986 to eliminate volatile organic compounds, it still had significant waste from its painting operations. In 1987, spray painting was replaced with a powder electrostatic painting process. This process substitution resulted in an energy reduction of 1 million BTU's per year. The use of zinc chromate pigments in 1988 eliminated the generation of filters that were considered hazardous waste.

Plated parts have been replaced with stainless steel components, eliminating all plating waste. All finished products are sterilized prior to shipment.



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The ethylene oxide process has been replaced by irradiation with gamma rays. Coolants, solvents, machine oils, scrap metal and office waste are all recycled.

In addition to energy reductions achieved through the process changes, particularly the painting changes, a programmable climate control system was installed in 1989, and upgraded in 1992. Security guards and designated employees monitor compliance with the energy conservation program. Boilers are shut down during the summer. Energy use is a topic at monthly supervisor meetings.

Liebel-Flarsheim has engaged in a variety of activities to assure the facility is environmentally sound. It permits no new materials, not even in sample quantities, to enter the plant until an Engineering Specification, which includes an MSDS approval, is conducted. The company has also erected a cyclone fence to prevent dumping. The company has constructed a new Class 10,000 clean room with charcoal filters for final cleaning and sterilizing prior to shipment. This improves the capture and recycling of released materials.

Liebel-Flarsheim has taken several steps to share this information with others. It was an active participant in the City of Reading's residential recycling task force. The company supports the activities of the local Chamber of Commerce and provides requested data.

**Looking Ahead**

Liebel-Flarsheim is extending its pollution prevention activities. By 1993, the company achieved a 100% reduction in the usage of 1,1,1-trichloroethane. Freon releases are expected to drop from 32,190 pounds in 1987 to 12,000 pounds in 1993. Along with its conversion to vapor degreasing, the company is evaluating ways to reduce dust, fingerprints and skin oils. It is also evaluating new mold release compounds.

A project is underway to eliminate the lead foil/paper x-ray grids by moving to an aluminum grid. Customer tests are favorable but adoption of the change requires government approval. This change would eliminate the lacquers used to coat the paper, the adhesive containing methyl isobutyl ketone and methyl ethyl ketone, and the acetone used to clean the grid.

Liebel-Flarsheim's considerable efforts have earned them well-deserved recognition. The State of Ohio and Ohio EPA applaud their efforts and encourage others to meet or exceed their high standards.

**For More Information**

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**This is the thirteenth in a series of fact sheets Ohio EPA has prepared on pollution prevention. For more information, call the Office of Pollution Prevention at 614/644-3469.**

**The Office of Pollution Prevention was created to encourage multi-media pollution prevention activities within the state of Ohio, including source reduction and environmentally sound recycling practices. The office analyzes, develops, and publicizes information and data related to pollution prevention. Additionally, the section increases awareness of pollution prevention opportunities through education, outreach, and technical assistance programs directed toward business, government, and the public.**