OhioEPA

Office of Pollution Prevention

June 1997
Number 37

Governor's Pollution Prevention Award, 1996 Recipient

Chrysler Corp. Toledo Assembly Plant

Chrysler Corporation has demonstrated strong pollution prevention programs which show that pollution prevention is good for businesses' economic growth as well as for the environment.

Governor
George V. Voinovich

The Governor's Awards for Outstanding Achievement in Pollution Prevention have been presented since 1986. Chrysler Corp. Toledo Assembly Plant was one of eight recipients to receive the Award in 1996. These awards recognize outstanding commitment to improve Ohio's environment through pollution prevention. Evaluation criteria for the awards include: the reduction of waste at the source, recycle or recover materials, 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 (P2) 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 avoids cross media transfer (of wastes and/or pollutants) and is multi-media in scope, addressing all waste and environmental releases to the air, water and land.

Chrysler Corporation Toledo Assembly Plant

The Toledo Assembly Plant (TAP) is comprised of two facilities, the Jeep Parkway and Stickney Avenue Assembly Plants. These assembly plants produce the Jeep Cherokee and the Jeep Wrangler. The operations at the Jeep Parkway facility cover vehicle assembly, stamping, machining, welding, metal cleaning, coating, painting, assembly, wastewater treatment and electrical power generation. The Stickney Avenue facility operation is primarily assembly.

Chrysler Corp. Toledo Assembly Plant was recognized for implementing pollution prevention programs at every level in its organization. TAP's

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P2 policy was aimed at all employees. The company's programs fostered the development of pollution prevention innovations and provided incentives and awards for pollution prevention activities. TAP demonstrated a proactive environmental approach, beginning with pollution prevention as its first priority. TAP was committed to reducing wastes at their source. Their programs demonstrated this commitment.

The **spray primer** program prevented further pollution through reformulation. The **purge solvent recovery** system minimized cost and waste through increased efficiency and better management awareness. The **presoaked solvent rags** decreased worker health risk by changing a material usage process. The **summer intern** program was an educational program promoting pollution prevention practices. Lastly, the **body washer reformulation** project reduced a source of pollution through reformulation. These projects were developed from a committed effort by TAP to prevent pollution at its source.

Pollution Prevention Activities

TAP has demonstrated its environmental commitment through a successful, strategic approach to pollution prevention. This section briefly describes the major projects and initiatives that have been instrumental in the plant's pollution prevention success.

Spray Primer Reformulation

TAP replaced the existing primer with a new spray primer. The old primer formulation contained hexavalent chrome, making the process sludge hazardous and dictating the need for wastewater treatment. The new primer formulation does not contain the hexavalent chrome. This eliminated the need to treat the process effluent for chrome, and the sludge is no longer hazardous.

In addition, chip resistant characteristics of the new primer eventually led to the elimination of Stoneguard (a chip resistant coating). This further reduced VOC air emissions. The new primer has resulted in an annual savings of $21,00 in sludge disposal per year. There is also an added $115,200 in paint savings per year, for a total savings of $136,200 per year.

Purge Solvent Recovery

In the painting process, the paint must be flushed from the application equipment,when the colors are changed. To do this, the equipment is purged with solvent. The old practice was to fuel blend the solvent. The solvent now is collected in a holding tank and then picked up by the solvent supplier. The solvent is remanufactured and returned to the plant. This solvent recycle program with the vendor resulted in a cost savings of $163,240 per year.

Presoaked Solvent Rags

In the paint shop, solvent rags are used to wipe off excess sealer and adhesive. In the former process, the solvent rags were dipped in a open container of isopropyl alcohol. The open container was a constant evaporative source of VOCs. The new system uses presoaked/ prepackaged solvent rags. The packaging is resealable when the solvent rags are not in use. The evaporative source of VOCs from the open container of isopropyl alcohol has been eliminated. The most important benefit from the material change has been increased safety and health of plant personnel. They are no longer exposed to these evaporative VOCs.

Summer Internship

The 1996 summer intern position was created to establish a "best practice" report regarding pollution prevention at assembly plants. This program provided an educational opportunity for a student or recent graduate by introducing the student to pollution prevention projects in Chrysler assembly plant operations on a first-hand basis. The program also provided a mechanism to highlight successful waste minimization projects. The potential environmental, health and safety benefits from this project are great. The final "best practice" report will provide the 11 Chrysler assembly plants a corporate wide outline of successful waste minimization

projects. This information will be shared with automotive manufactures and other interested parties.

Body Washer Reformulation

Part of the automotive painting process is auto body surface preparation. Surface preparation is critical for intercoat adhesion as well as finished paint quality. Part of the surface prep process is the body washer. The body washer consists of a high pressure water and surfactant spray process used to clean the body of the vehicle. The purpose of washing the auto body is to remove drawing compounds, stamping lubricants, as well as dirt and debris that may be present on the metal surface of the body. This is done before to the body moves into the metal finishing area. Previously a surfactant mixture that contained glycol ethers was used for washing the bodies. Through product reformulation, a substitute surfactant was developed which contained no glycol ethers. The product reformulation has decreased glycol ether air and water emissions by 400,000 pounds per year. The economic benefit from this project is a material cost reduction of $43,584 per year.

Ohio Prevention First

TAP is an active participant in the *Ohio Prevention First* initiative. *Ohio Prevention First*, established at the request of Governor Voinovich, is a voluntary planning initiative seeking a reduction in pollution generated throughout Ohio. This initiative provides an important opportunity for business and industry to take a leadership role in environmental protection without the need for additional regulatory mandates.

Environmental and Economic Benefits

The projects have benefited the environment by either reducing the pounds of pollution that are released into the environment or replacing a toxic pollutant with a less toxic material. These changes have resulted in a total cost savings of approximately $343,063 per year.

Management Commitment and Employee Involvement

As a responsible corporate citizen, Chrysler Corporation has taken a proactive approach to pollution prevention and waste minimization. TAP's commitment to pollution prevention is characterized by a broad-based, dynamic policy. The pollution prevention policy is aimed at all employees of Chrysler Corp., from the hourly worker to top management. Programs such as the Product Quality Improvement Partnership foster the development of pollution prevention innovations, and programs such as "Chrysler Honors Environmental Excellence Recognition" provides incentives and awards for pollution prevention activities.

Transferability

The technology explained above has been adopted at other Chrysler Assembly Plants and could be transferred to other industries. Competitive assembly plants also have the potential to benefit from these projects.

For More Information

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This is the 37th in a series of documents 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 Office increases awareness of pollution prevention opportunities through education, outreach, and technical assistance programs directed toward business, government, and the public.

Office of Pollution Prevention WWW address: www.epa.ohio.gov/opp