

## Reducing Hazardous Wastes in Your Business

Pollution prevention is not a new concept; it has been conducted under the pseudonym of efficiency programs for years. Reducing waste by changing the processes that create wastes not only decreases your costs, it also improves efficiency making your company more competitive and profitable.

Waste reduction involves changing behavior and attitude of all employees. The first step of reducing waste is to rethink the way you look at waste. Don't think of waste as an unavoidable by-product essential to normal operations. Think of waste as evidence of a flaw in the process, which can be reduced or eliminated by proper control of the process. This does not change the manifestation and removal methods of the waste, but eliminates the introduction of the waste. This type of thinking means prioritizing reduction options toward preventing wastes; an attitude change from "how do I get rid of wastes?" to "how do I prevent waste?" The three key doctrines of waste reduction are:

1. **SOURCE REDUCTION** (Don't create waste in the first place)
2. **REUSE** (Give it a second life)
3. **RECYCLING** (Recover valuable resources)

This hierarchy establishes priorities for evaluating waste management options. Although your waste management strategies will be a blend of these practices, your goal is to attain the highest level. For example, solvent distillation (recycling) is an excellent practice because it returns the hazardous material to the process, but it ranks third on the list. Letting dirty solvent stand, settling out the heavy dirt, and then using the clean portion again (reuse) is a better option because it eliminates distillation, a waste generating process itself. Eliminating the solvent entirely, through substitution of a non-hazardous cleaner (source reduction), is the best option of all because it eliminates the generation or toxicity of the waste within the process.

Below are descriptions of some of the practices that make up pollution prevention. If you'd like more specific information that applies to your manufacturing processes, please call the NH Pollution Prevention Program at 1-800-273-9469 or 271-6460.

### SOURCE REDUCTION

**Source reduction is any activity that reduces the toxicity of a waste or eliminates the generation of a waste at the source of generation, usually within the process.**

Your most cost effective and desirable approach to sound waste management is to prevent wastes from being produced at all. Some general tips may be applied to a variety of waste streams to prevent waste generation. Some options are:

#### *Production process changes:*

- Substitution of non-hazardous for hazardous materials; improved employee practices and simplification of processing; alteration of product composition; elimination of process steps; optimization of reactions.

#### *Technology modifications:*

- Improved controls; energy and water conservation; improvements to existing equipment; replacement equipment and efficiency modifications.

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### *Good housekeeping practices:*

- Common sense items such as leak prevention; proper production scheduling; waste segregation; employee training; and inventory control.

## **REUSE**

**Reuse of a material at least twice, without changing its original form. The secondary user may be the same as, or different from, the original user.**

Each time a material is reused, a new one does not have to be manufactured, purchased or disposed. In other words, don't throw away a good thing! When establishing or modifying a manufacturing process, consider the potential reuse of the byproducts. Typical ideas are:

### *Direct reuse:*

- Waste materials such as process waters, waste heat or solvents are captured and reintroduced into the process without prior treatment.

### *Closed loop recycling:*

- A form of reuse where a process waste is purified and hard piped directly back into the process without any direct handling or storage.

### *Indirect reuse:*

- Materials such as solvents are reused without purification in a different process. For example, solvent used to clean an automobile carburetor may be used to clean a crankcase cover in a different part of the shop.

## **RECYCLING**

**Recycling is the collection, separation and recovery of useful materials that cannot be directly reused or would otherwise be discarded as waste.**

The waste streams of most commercial and industrial establishments contain high percentages of homogenous recoverable materials. Recycling can eliminate a substantial portion of purchase and disposal costs for those materials. Generally, recycling consists of:

### *On-site recycling:*

- The processing of scrap materials and wastes and returning the processed materials to the manufacturing process. This processing may be independent of the manufacturing process that generated the waste.

### *Off-site recycling:*

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- Materials not targeted for on-site processing may be collected and shipped to a recycling process off-site. This generally requires storage and shipment of hazardous waste although some waste management costs are eliminated.

### *Waste exchange:*

- Wastes and process by-products may be reused by another manufacturer. Swap listservs such as the N.H. Waste Exchange, or Recycler's World, are good avenues for businesses to keep unwanted materials out of the waste stream.

Well planned and implemented waste reduction efforts will yield specific benefits. When combined with other plant programs such as TQM, quality control or energy conservation the benefits can include:

- Reduced waste disposal costs
- Reduced purchase costs
- Reduced compliance costs
- Improved customer satisfaction
- Reduced liability costs
- Decreased employee health problems
- Higher production yields
- Improved corporate image

This brief overview of pollution prevention concepts is intended to provoke thought and initiate further action. The scope of your waste reduction goals will dictate the amount of effort you must expend in this area, which will in turn determine the amount of success you will achieve. A good waste reduction program takes careful planning, implementation and follow-up, as well as time and expertise.

### **New Hampshire Pollution Prevention Program**

While in-house process familiarity is crucial to implementing a successful pollution prevention program, operating in today's highly competitive, small profit margin atmosphere leaves most companies with little extra staff or time to explore pollution prevention options. The New Hampshire Pollution Prevention Program (NHPPP) is a non-regulatory technical assistance program providing New Hampshire businesses with the additional time and expertise they need to discover pollution prevention opportunities at their facility. NHPPP services are free, confidential and the scope of service is totally at the company's discretion.

The NHPPP provides customized technical and regulatory information services; maintains an in-house database of technical reports, vendor information and case studies; provides on-site assistance; conducts conferences and workshops; and develop curriculum. For more information, contact the NHPPP at (800) 273-9469 or [nhppp@des.nh.gov](mailto:nhppp@des.nh.gov).

### **Additional Information**

For more information regarding household hazardous waste, please contact [hhw@des.nh.gov](mailto:hhw@des.nh.gov), call (603) 271-2047, or go to <http://des.nh.gov/>.