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An Ounce of Prevention Is Worth a Pound of Cure

Earl Evans

Is it possible that Bracton coined this ancient proverb in 1240 A.D. to help promote an environmental message? Probably not, but of all the countless situations to which it has been applied, the wisdom of its message has never been more appropriate than in the case of waste treatment and disposal, especially in today's regulatory framework. Why? Because if an industry generates waste products, the best way to lower disposal cost, reduce potential legal and regulatory liability, and decrease pollution is to focus on that ounce of prevention (i.e., reduce the amount of waste generated).

The idea of pollution prevention (waste reduction) is a proven concept long recognized as the optimum approach for pollution control. Waste exchange is also important. One company's waste may be another company's raw material, resulting in lower costs for both companies. There are numerous examples of those who have drastically reduced their waste disposal costs and their liability by adopting waste reduction or waste exchange practices in their plants. If a business has not already investigated the idea of waste reduction or waste exchange, it should. In fact, Waste Reduction and Technology Transfer Foundation will do it for them and will do it for free. Be assured, this service is no obligation, voluntary, noncompliance, nonregulatory, and confidential. In most cases, waste reduction also reduces costs and increases profits.

Background

In 1990, Congress established a national policy that pollution should be prevented or reduced at the source whenever feasible. Responsibility for implementing this policy fell primarily to state and federal environmental regulatory agencies. Most agencies recognize that many businesses lack sufficient technical resources for the in-house identification of waste reduction opportunities. While many of these agencies are willing to allocate resources to waste reduction technical assistance, businesses have demonstrated a reluctance to request such assistance from regulators. This reluctance has created a gap between the agencies that have the mandate and resources to provide the technical assistance and the companies who most need the assistance.

Operating as an independent organization since 1989, the Waste Reduction and Technology Transfer (WRATT) Foundation was incorporated as a 501(c)(3) not-for-profit foundation in 1993 to fill this gap by offering technical assistance in a nonthreatening way to businesses that need but cannot always afford to pay for it.

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The WRATT Foundation is a public/private partnership committed to enhancing economic development by helping business and industry reduce waste. The foundation provides free, confidential, voluntary, and nonregulatory waste reduction on-site assessments to industries, utilizing retired engineers, scientists, and senior managers. This unique approach is referred to as the WRATT model. On-site assessments identify waste reduction opportunities, including reduced utilization of energy and water, which the industry can implement with confidence and cost-effectiveness.

The WRATT Foundation’s principal office is in Muscle Shoals, Alabama, with satellite offices in Birmingham and Mobile. The foundation uses approximately sixty retired engineers and scientists resident in Alabama, each having thirty to forty years of industrial experience, bringing immediate credibility to the foundation’s work.

The governing Board of Directors represents industry, utilities, professional and business associations, and other organizations committed to the support of pollution prevention and environmental technology transfer. WRATT does not compete with other organizations; in fact, identification of cost savings and waste reduction options create research and development opportunities for private consultants, agencies, and the like. The foundation recently received Renew America’s National Award for Environmental Sustainability, and in 1995 received the Alabama Environmental Council’s award as Outstanding Conservation Organization.

The foundation receives a small annual appropriation from the state of Alabama, grants from private foundations, grants from U.S. EPA Region 4, grants from the Appalachian Regional Commission, contributions from corporations, and overhead charges received on contracted services. WRATT also receives “in-kind” services such as office space, furniture and equipment (including PCs), mail service (including postage), telephone and fax, copier usage, and printing from various supporting institutions. Retirees are paid $12 per hour when working on an assessment, plus expense reimbursement associated with necessary travel.

On-site assessments are performed at no charge for Alabama’s small and medium-sized businesses, communities, and governmental entities, such as schools. Large businesses are asked, but not required, to make a contribution to help finance other assessments. No regulatory agencies receive any information from WRATT as to the businesses who have inquired about or arranged for a WRATT assessment—nondo they have access to the reports prepared. An exception to this policy of confidentiality is made when the business agrees explicitly and voluntarily to allow WRATT to use their assessment in a presentation or as a case study. The decision to proceed with a WRATT on-site assessment is strictly up to the business or institution involved. WRATT’s findings and recommendations are not compliance oriented. It focuses on pollution prevention, waste reuse, waste reduction and resource conservation. Businesses can implement or ignore any or all of the WRATT recommendations.

Since 1989, foundation engineers with career experience from more than sixty-five different types of businesses and industries have conducted more than 700 on-site assessments in Alabama.

In two surveys of WRATT assessment clients, documented annual cost savings (allowing time for implementation of recommendations) averaged $1,12,000 per assessment and totaled $8,056,000 for the seventy-two companies that responded. The benefit/cost ratio was 51 to 1. Total savings would be more, probably much more. The survey indicated that significant reductions in waste (solid, liquid, and air emissions) were achieved. Results indicated by one survey were:

- Savings from $10,000 to more than $1.5 million per year;
- A total of twenty-two companies reported combined savings of more than $2.6 million by reducing the amount of solid waste produced by more than 36,000 tons per year;
- Eight companies reduced hazardous waste by almost 79 tons per year, saving more than $174,000; and
- A total of ten companies saved more than $630,000 through better use of energy and other resources.

A Pollution Prevention Assessment is an investigation to survey current waste management programs and practices; evaluate manufacturing/production processes and quality control; identify and recommend practices that reduce or eliminate wastes and pollution and increase energy efficiency; and provide contacts and resources to assist in investigating and implementing recommended waste reduction alternatives.

A good Pollution Prevention Assessment increases knowledge of the manufacturing or industrial process; defines sources, quantities, and types of waste being generated; collates information on unit operations, raw materials, products, power consumption, water usage, and wastes; highlights process inefficiencies and areas for management improvement; identifies technologies for process improvements; helps set targets for waste reduction; raises awareness in the workforce regarding the benefits of waste reduction; enhances public image; and permits the development of cost-effective waste prevention strategies.

The major elements of an on-site assessment are pre-assessment activities, an on-site assessment, preparation of a professional report, and follow-up. The preassessment begins with the receipt of an invitation from a business contacting WRATT and an appointment to send a retiree assessor to the business. The retiree assessor sent on the preassessment usually becomes the team leader for the on-site assessment. The preassessment establishes WRATT’s credibility, obtains information and data, and consists of a brief tour of the business to identify possible waste streams and the scope of manufacturing or industrial operations. Following the preassessment, a team is selected (including a team writer) and research is performed on the company and industry. All available information is sent to team mem-
The WRATT model has been universally characterized as “win/win” for Alabama business, industry, and environment. WRATT has recently begun assisting other states in implementing retiree programs by recruiting and training assessors. WRATT trainers have also been sent to Tunisia, Morocco, and Bangladesh. Foundation proposals to assist in the development of WRATT-style programs are presently being considered in other states and in foreign countries from Europe, Asia, and the Orient.

Presently, the foundation has a contract to administer on-site pollution prevention technical assistance for the Michigan Retired Engineer Technical Assistance Program (RETAP). This program is managed by the Michigan Department of Environmental Quality. WRATT recruits and trains Michigan retirees and markets and administers the technical assistance program for Michigan according to the WRATT model. The Michigan program has been so successful that funds for the program were included in a recent state bond issue to increase the number of annual assessments from forty per year to one hundred per year. Through RETAP, Michigan businesses and institutions have saved money by:

- substituting natural gas heat for electrical heating of process tanks, to save as much as $100,000 per year;
- purchasing a small distillation unit to recycle mineral spirits on-site and save about $1,500 per year;
- substituting aqueous cleaners for hazardous solvents to save about $8,000 per year; and
- implementing sixteen recommendations related to process water use, such as recycling, metering, modifying processes and equipment to reduce quantity required, and utilizing purchased water to reduce sewer costs, for a potential annual savings of more than $80,000.

RETAP has completed approximately two hundred assessments through June 30, 1999. In sum, the following quote from Winston A. Smith, director of EPA Region 4 Air, Pesticides and Toxic Substances Management Division, captures what the WRATT Foundation tries to achieve yearly: acknowledgment by government, business, and the community that pollution prevention makes sense and can save money, and that the WRATT model is an effective and efficient method for getting full consideration of all waste reduction and reuse alternatives:

One of the more successful of the State Programs is the Alabama Waste Reduction and Technology Transfer (WRATT) Foundation. The WRATT Foundation performs approximately 80 P2 assessments per year and has a long record of identifying savings to companies through reduction of waste and P2. Their status as a nonprofit 501(c)(3) corporation has allowed the Alabama WRATT to provide assistance outside of Alabama. For example, they have played a key role starting and operating the State of Michigan Retired Engineer Technical Assistance Program (RETAP). Alabama WRATT helped train the retirees and coordinates assessments by the Michigan retired professionals (30-40 per year) under contract. The RETAP program has recently received an endowment of $10 million through the Clean Michigan Initiative and will increase assessments to 100 per year.