

Industry Experience With Pollution Prevention Programs

Pollution prevention is a multimedia concept



that reduces or eliminates discharges to air,



water, or land and includes the development



of more environmentally acceptable products,



changes in processes and practices, source



reduction, beneficial use, and environmentally



sound recycling.

Management support can help overcome a number of cultural and organizational barriers that can hinder a pollution prevention program. The following are elements which historically have been used successfully to demonstrate management support to address such barriers:

Support by management at all levels, made evident to the organization.

- A clearly-stated policy of top management support for pollution prevention, including the expectation that all levels of management will seek appropriate pollution prevention opportunities in their operations.
- An elevated internal appreciation of environmental issues in general and pollution prevention in particular, by including these issues in the assessment of goals and the performance of operating organizations.
- An employee recognition program to promote and reward new and innovative ideas that lead to pollution prevention.

Candor in dealing with internal and external perceptions and expectations regarding industry's environmental performance.

- Recognition that actions of the government and the public are guided by a belief that industry should do much more to protect and improve the environment.
- Recognition that more environmental regulations and restrictions may be tempered by voluntary actions on the part of industry.

Management Support

Recognition that concerns may arise over changing from the familiar approach of compliance with command-and-control requirements to an approach which emphasizes pollution prevention; however, this change can also offer opportunities.

- Acknowledgement that command-and-control requirements can provide certainty, but require specific performance which can also stifle creative and cost-effective solutions. Voluntary pollution prevention offers greater opportunity for flexibility, creativity and optimization of solutions.
- Recognition that a pollution prevention approach provides the greater opportunity to identify and exploit competitive advantages which may not be available under a command-and-control approach.

Internal practices requiring that cost-effectiveness evaluations be performed for potential pollution prevention actions, including appropriate consideration of long-term benefits and otherwise historically hidden costs.

- Guidelines to assist in identifying and quantifying to the extent possible the long-term benefits of potential pollution prevention actions, such as reduced liability, improved community relations, and improved employee attitudes, etc.
- Requirements to perform cost-effectiveness evaluations which recognize long-term benefits as well as short-term costs and benefits including a full accounting of potential "hidden costs" (costs billed to other cost centers, etc.) for all pollution prevention activities.

Operating Practices

A number of practices in operating organizations have been used to successfully identify, evaluate, plan, and implement pollution prevention activities. Building on management support, these practices form the nucleus of the program. Specific practices which have been found to be effective include:

Organizing to carry out the program.

- Establishing a steering committee, including knowledgeable representatives from operating functions and appropriate administrative areas, to develop and coordinate the overall company program.
- Establishing implementation teams or quality teams (or circles) in the operating organization to identify, evaluate, plan, and guide the implementation of pollution prevention activities in their areas.

Implementing the program in each operating function on a facility-specific basis.

- Developing an inventory of releases to all media. Concentrate efforts initially on the most significant releases, including information about where and how each release originates, any intermediate handling or processing, and its ultimate disposition.
- Evaluating each inventoried waste stream and emission in order to develop plans for reductions. Evaluation criteria might include quantity, toxicity, safety or health risk, potential liability, level of public interest, technological feasibility and anticipated cost of reduction, and availability of the resources necessary to accomplish the reduction. Opportunities should be identified to move up the waste management hierarchy (from treatment and disposal to recycling or reuse to source reduction) when feasible and justified.
- Setting realistic reduction goals, both short-term and long-term (e.g., one and five years), using the evaluations of inventoried releases to identify and prioritize the reduction steps which will attain the goals. Combining the goals and the individual reduction steps can form an overall pollution prevention plan for the facility.
- Accomplishing reductions, including those identified in the plan, and monitoring and reporting progress. The plan should be flexible and therefore, should be updated periodically to reflect new information or changing situations.

Communicating plans and results of facility pollution prevention programs.

- Establishing networks for sharing information among all company facilities about plans, successful (and unsuccessful) reduction techniques, and progress.
- Reporting to the company steering committee regularly for consolidation of plans and results for communication to management and others.
- Providing feedback to employees on successful pollution prevention activities.

The API Pollution Prevention Task Force has been actively involved in promoting pollution prevention within the industry since 1990. During that period, the members of the Task Force have accumulated a comprehensive body of knowledge on the subject of pollution prevention along with an appreciation of many of the key elements that make pollution prevention programs successful. The following resource document is a work product of the Task Force aimed at capturing their experience and knowledge and passing it along to API member companies. It is intended only as a summary of elements that have proven to be successful for others.

Benefit Overview

- Pollution prevention can be a cost-effective means of reducing releases (air, water and waste).
- Pollution prevention can reduce the cost of operating and maintaining existing release control equipment as well as costs associated with the rerunning of off-test and slop materials.
- Pollution prevention programs integrate well with new or existing "Quality Management Programs".
- A pollution prevention program can be an efficient means to consolidate and extend release reduction activities already underway.
- Pollution prevention can provide a less costly alternative to the traditional government command-and-control approach.
- Successful industry pollution prevention programs could act as models for such programs that may be developed by states and the federal government.

Element Overview

Elements Historically Found in Successful Pollution Prevention Programs:

Management commitment and support to help overcome cultural and organizational barriers

- Supportive policies, reinforced by actions
- Realistic handling of environmental performance perceptions and expectations
- Emphasis on potential benefits of pollution prevention vs. traditional waste management methods
- Insistence on complete evaluations of cost-effectiveness

Operating practices to identify, evaluate, plan, and implement the program

- Organizational steps to carry out the program (establishing teams, empowering team members, setting aside resources, etc.)
- Procedures to implement the program on a facility-specific basis
- Information sharing among affected parts of the company

Administrative, accounting, and communication practices to facilitate the program

- Processes to encourage identification of pollution prevention opportunities
- Cost accounting and stewardship systems
- Communication with employees and other interested parties

Administrative, accounting, and communication practices can be established or modified to facilitate the adoption and implementation of a pollution prevention program. Such practices can serve to reinforce management's commitment and to provide tools which support the program. Actions which can be taken in these areas include:

Establishing administrative processes to encourage the identification of pollution prevention opportunities.

- Instituting practices to identify and evaluate pollution prevention opportunities in research activities, designs for new or modified facilities, maintenance turnarounds, and reviews of proposed projects.
- Broadening environmental compliance audit programs to include assessments of the extent to which pollution prevention opportunities are being identified, evaluated, and pursued when appropriate.

Administrative, Accounting, & Communication Practices

Fully utilizing cost accounting and stewardship systems to support pollution prevention.

- Within a plant's cost accounting system, fully identifying costs for controlling emissions and treating/disposing of wastes and allocating them to the operating units which generate the emissions and wastes.
- Including accountability for the above costs, along with pollution prevention activities and progress, in stewardship reports and reviews by all levels of management.

Undertaking communication activities to increase pollution prevention awareness on the part of employees and others.

- Emphasizing the importance of pollution prevention in applicable training programs and in various forms of communications with employees.
- Establishing employee incentive programs encouraging the generation of pollution prevention ideas.

For more information consult the following:

- STEP: Strategies For Today's Environmental Partnership. To change how our industry is perceived we must demonstrate that we are serious about protecting the environment. American Petroleum Institute Publication Order No. 877-69050. For copies call 202-682-8375.
- API Recommended Practice 9000, Management Practices, Self-Assessment Processes and Resource Materials. American Petroleum Institute Publication Order No. 878-90000. For copies call 202-682-8375.
- Pollution Prevention Act of 1990, Enacted by Public Law 101-508, Nov. 5, 1990; 104 Stat. 1388, 42 U.S.C. 13101 et seq.
- U.S. Environmental Protection Agency. Facility Pollution Prevention Guide, Office of Research and Development, EPA/600/R-92/088, May 1992. For Copies Call 513-569-7562.
- Total Quality Management: A Framework For Pollution Prevention. President's Commission on Environmental Quality, January 1993. For copies call 202-395-5750.
- "Environmental Dividends: Cutting More Chemical Wastes", M.H. Dorfman, W.R. Muir, C.G. Miller, INFORM, Inc., (1992). For copies call 212/689-4040.

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