

Integrating P2 into the Permit Writing Process

Background

Although pollution prevention was first introduced with the Pollution Prevention Act of 1990, it was formally endorsed as a guiding principle for all EPA programs through a policy statement issued in 1993. These programs encourage sustainable development while continuing the agency's mission to protect human health and the environment. The *EPA Pollution Prevention Policy Statement* published in 1993 states that pollution never created avoids the need for treatment. It goes on to say that we need to encourage pollution prevention as a means of compliance through our permitting, inspection, and enforcement programs. This statement recognizes that:

“If we are to succeed, we must continually renew our commitment by questioning our established practices, working cooperatively across program and agency boundaries, and not hesitating to acknowledge shortcomings as well as success stories.”

In addition, a recently established EPA waste minimization plan sets national waste reduction goals as follows:

“To encourage waste minimization nationwide, the U.S. Environmental Protection Agency (EPA) worked with representatives from numerous stakeholder organizations to develop the Waste Minimization National Plan (WMNP), which focuses on reducing the generation and subsequent release to the environment of the most persistent, bioaccumulative, and toxic chemicals in hazardous wastes. The WMNP established three goals: To...

- reduce, as a nation, the presence of the most persistent, bioaccumulative, and toxic chemicals (PBTs) in hazardous wastes 50% by the year 2005;
- avoid transferring these chemicals across environmental media; and
- ensure that these chemicals are reduced at their source whenever possible, or, when not possible, that they are recycled in an environmentally sound manner.”

It is important to remember that you do not have to be a production process and P2 technology expert to promote P2 during regulatory activity. All it takes is a basic understanding and awareness of P2 concepts and the production processes that generate waste. However, top management support and policy that backs regulatory efforts to integrate P2 is critical for a successful program.

Is pollution prevention required?

National environmental acts such as the Clean Air Act (CAA), the Clean Water Act (CWA), and RCRA all encourage reducing the generation of pollution at the source rather than treating it or releasing it to the environment. In fact, the CAA sets as a primary goal to “encourage or otherwise promote reasonable federal, state, and local governmental action, consistent with provisions of this chapter, for pollution prevention.”

RCRA's goals state that preventing the generation of hazardous waste is of highest priority while treating and disposing of the wastes are the lowest priority; while the CWA seeks to eliminate discharges of toxic pollutants.

According to 1998 EPA data, 16 states require facilities perform P2 planning as part of the permit process, and several other states take steps to encourage P2 during the planning and permitting processes. These provisions tend to be flexible and provide incentives for instituting P2 options.

What type of facilities benefit most from P2 during the permitting process?

It is obvious that facilities that generate or manage air emissions, hazardous wastes, direct or indirect wastewater discharges, and storm water discharges offer ideal opportunities to integrate P2 into the permitting process. The following situations often lend themselves to pollution prevention as an effective choice:

- Facilities that generate emissions or wastes that exceed a regulatory threshold by a small amount may be able to use P2 to obtain a non-regulatory status.
- Facilities that have frequent compliance problems associated with their current pollution control technology may be in the position to consider a P2 process, or material or technology enhancement, thus eliminating the need for a control technology.
- Facilities that generate or emit PBTs.
- Facilities that meet emission requirements by shifting their pollutants to other medias may be better off changing their production process, material, or technology, rather than paying for air, water, and/or hazardous waste controls and emission fees.
- POTWs subject to tight limits on their NPDES permits might benefit from requiring or promoting P2 for some industrial dischargers.

As the permit writer, what is your role?

As the permit writer, your role may range from simply providing the business with sources of basic P2 information, to meeting regularly with the business to develop a P2 plan that determines key permit parameters. As mentioned previously, the permit writer does not need to be a process or P2 expert to help industries integrate P2 into their permit plans. Certainly, permit writers who have some knowledge and interest in P2 may have more success in promoting P2. However, regardless of your expertise and interest, your most important role is to use the permit process to encourage a cost-effective reduction in pollution generated by the company.

Basic elements of a required P2 permit

Many permitting agencies work cooperatively with their state pollution prevention program, and in states where P2 plans are required, during the permitting process, the following basic elements are usually included –

- A statement of the company's P2 goals and top management's commitment for implementing P2.
- A characterization of all emissions released or generated by the facility.
- A description of the process or operations at the facility that result in the generation and/or release of pollutants.
- An assessment of the technical and economic feasibility of alternatives that releases fewer pollutants through change of material, technology, or process at the facility.
- A plan to implement alternatives identified as technologically and economically feasible.

When in the permitting process should P2 be discussed?

Discussion that begins early in the permitting process and continues through each step will most likely produce the desired results. Generic steps that may apply in a variety of permitting processes are as follows:

- Pre-permit facility analysis. The CAA Title V Permit Process requires a compliance analysis of all emissions generated at the facility. Some companies take this opportunity to do a whole facility, multimedia audit in order to identify areas that need work. These audits may include emission inventories, chemical storage studies, stack or emission point testing, process-specific and facility-wide mass balance calculations, as well as other data collecting activities. The compliance audit can be limited to an end-of-the-pipe study, or it could be used to identify P2 opportunities.
- Pre-application meeting. These meetings provide an early opportunity to present P2 information and alternatives to the company. It is an excellent time to discuss regulations, expected outcomes, time frames, and resources that are needed to complete the review. The permit writer can point the applicant to resources like the SBEAP that can provide industry-specific P2 information.
- Permit application. Draft P2 plans and worksheets are part of permit applications in some states. The plan or worksheet can be used as a guideline or framework for the permit writer and the applicant, making the identification of P2 opportunities and their implementation tracking easier for both parties.
- Draft permit review. P2 opportunities can continue throughout this review process.
- Public comment. This step may offer opportunity for the integration of P2, especially if the public voices concern about the facility's plan. By utilizing pollution prevention opportunities, the company may be able to ease public concern, while elevating public perception as a "good or green neighbor."
- Final permit issuance. Some permitting agencies require companies to explore P2 alternatives as a condition of the final permit.
- Permit renewal. Renewal time is an opportunity for the permit writer and the company to review their P2 or waste minimization plans. Some renewals require that the company report its emission reductions and set goals for the following year.
- Permit modifications. This is another time when P2 cost-effective means to accommodate both production goals and emission-limit requirements should be reviewed.

Why promote P2 during the permit writing process?

Historically, our regulations have been based on environmental standards for end-of-the-pipe control technologies. The permitting process is an excellent time to introduce companies to opportunities to prevent or reduce the amount of pollution generated, rather than spend money on expanding single-media, end-of-the-pipe pollution controls. Prevention alternatives introduced at the start of the permit process can help companies make cost-effective decisions, possibly reducing their need for a permit at all. Unfortunately, once money has already been put into an end-of-the-pipe technology, companies are less likely to look at prevention. Reducing costs and improving compliance are key components to this approach, which

ultimately benefits the company, the regulating agency, and the public health and environment.

What are other states doing to integrate P2 into the permit writing process?

In 1998, EPA identified 16 states that require facilities to conduct some type of P2 planning. Listed below are some of the strategies along with specific examples that some of these agencies have used to promote P2 during the permitting process. Regardless of the strategy used, introducing P2 early is of key importance.

Pre-permitting interviews and information distribution:

- Within the air program at the Massachusetts Department of Environmental Protection, DEP, a voluntary P2 worksheet is included with permit applications. The checklist surveys the applicant related to change of process, change of material, and change of technology P2 opportunities. The tool is intended to plant the P2 seed, provide references to state technical assistance programs and provide a measurement of potential waste/emission avoidance. In some instances, permit writing staff have been reluctant to use the worksheet as it may hinder the permit review timeline. In other cases, P2 can actually help the system as it may decrease the need for facilities to have complex permits in the first place. Contact: Keith Anderson, Massachusetts DEP, 508-792-7692, www.state.ma.us/dep,
- The Michigan Department of Environmental Quality Surface Water Division has amended its NPDES permit language to include a pollution prevention statement that encourages P2 alternatives. It notes that in some cases P2 may allow the applicant to totally avoid a permit. It makes reference to the state P2 assistance program that includes a hotline, workshops and publications, and directs folks to a Web site for assistance as well.

Permit avoidance through P2:

- The Washington Department of Ecology (DOE) has been successful in helping companies use P2 to achieve zero discharge and eliminate their need for an NPDES permit. The following language is REQUIRED in all of their permits:
 - “The permittee shall provide a report on all wastewater discharges that at minimum includes:
 - A complete inventory of all waste streams
 - Daily average and maximum flow rates for each waste stream
 - A detailed investigation into the options available for reduction, recirculation, reuse, or elimination
 - Selection of preferred option
 - A schedule for implementation of the preferred option...”
- The report must show whether reaching zero discharge is feasible through the use of P2 strategies, and whether a final inspection during dry weather has resulted in the cancellation of NPDES permits for companies that have achieved zero surface water discharge. As a result of this approach, reductions have ranged from 4,000,000 gpd to zero discharge. Contact: Phil Kauzldric, WA. DOE, 360-407-6413, www.ecy.wa.gov/,

Pollution prevention pre-approval – Avoidance of permit modifications:

- Massachusetts DEP uses a general condition air permit to preapprove process or formulation changes that reduce VOC emissions, toxic chemical use, or hazardous waste generation.
- Both Minnesota and Oregon have issued permits to industries that allow for certain operational changes without triggering a permit modification or review. The permits encourage P2 strategies, while eliminating the need for additional permit review when companies need to make frequent operational changes.

Pollution prevention planning:

- The New Jersey Department of Environmental Protection requires a facility-wide pollution prevention plan be submitted with applications for air permits. The plan is required, but implementation is not required. However, simply having a plan has been instrumental in companies implementing P2 projects. Contact: New Jersey Dept. of Environmental Protection, 609-777-0518.
- North Carolina has made changes to their codes and regulations that give POTWs the authority to require their significant industrial users, SIUs, to develop a waste minimization plan and implement waste reduction technologies. As a result, some of the POTWs actually require the plans, while others simply encourage it. Most of the success has been with large companies with smaller companies being slower to implement P2. Some POTW programs also assisted businesses with the application of small business waste minimization grants and referred them for site assessments to the state P2 program. Contact: North Carolina Department of Environment and Natural Resources, 800-763-0136 or www.p2pays.org
- The North Carolina Department of Environment and Natural Resources gives air permit applicants a flier that documents the monetary and regulatory benefits of p2. The department also requires all water and air quality permit holders and applicants to submit a written description of current and projected plans to reduce the emissions and discharges of wastes and pollutants. The written description is not part of the permit and does not serve as a basis for permit denial. Contact: North Carolina Department of Environment and Natural Resources, 800-763-0136 or www.p2pays.org
- The Washington DOE has developed a general permit for dairy farming operations that requires development and compliance with a waste minimization plan. The plan must be developed and implemented by the dairy farm and is enforced by the DOE. If the farm adheres to the plan and has had no violations of the permit conditions for 36 months, the dairy farm may request a permit termination. The original permit plan is then reviewed and DOE inspects the farm. Termination of the permit is granted as long as all paperwork is in order and the farm passes inspections. This termination clause provides incentives for P2, and BMPs, and rewards responsible behavior. Contact: Phil Kauzldric, WA. DOE, 360-407-6413, www.ecy.wa.gov/.
- The Washington DOE has a model permit for wastewater and storm water permits with language that requires the permittee to develop and implement a P2 plan. The plan must be kept at the facility and submitted to the DOE within six months of the effective date of the permit. Contact: Phil Kauzldric, WA. DOE, 360-407-6413, www.ecy.wa.gov/.

- EPA Regions 2, 5, and 7, as well as the states of Ohio and Arizona, all require RCRA permittees have a program in place to reduce the volume and toxicity of hazardous waste that is generated, and to the degree determined by the generator/permittee, to be economically practical. This is known as the “program in place.” Some states in Region 2, such as New York, require the program only of their largest generators and TSDs, while other states such as New Jersey apply the “program in place” to their facilities that generate high priority pollutants. Ohio requires a “program in place” for its TSDs and has statutory requirement for P2 plans for facilities using deep well injection for disposal of their hazardous wastes. Arizona uses the Region 9 permit module that requires submission of a P2 plan and implementation of the plan by RCRA-permitted facilities. Contact: Gail Bliss, Arizona Dept. of Environmental Quality, 602-207-4212.
- The California Department of Toxic Substance Control used its authority to require its two TSDs to work with their generators to reduce wastes. The TSDs must submit a detailed description of any programs the permittee has in place to assist generators with volume or quantity reduction. The permittee must periodically name those who have received the P2 information and those who have a plan in place, and report the total volumes reduced. As a result, one TSD owned by Waste Management Inc., operates a waste minimization consulting service to assist its customers with pollution prevention and waste reduction evaluations. Contact: William Veile, California Department of Toxic Substance Control, 916-255-3545, www.dtsc.ca.gov/sppt/pptd/pp/.

Explicit pollution prevention conditions in permit:

- The Massachusetts DEP has agreed to allow for temporary increases in a company’s VOC emissions during an expanded production period in exchange for a permit condition that will result in greater long-term, facility-wide emissions reductions. The company must agree to an enforceable P2 implementation schedule. Contact: Keith Anderson, Massachusetts DEP, 508-792-7692, www.state.ma.us/dep.
- Several cities and states around the country have implemented the “Code of Management Practice” or CMPs for silver and mercury dischargers. This program, now implemented in some Kansas regions, the city of Wichita, and the water pollution control division in Wyandotte County, does not impose typical concentration-based (numerical) discharge limits, but rather establishes a set of operating procedures designed to reduce the overall volume and amount of pollutant (silver and mercury) discharged. This program gives businesses the choice of complying with the CMP operating practices or obtaining a permit that requires a numerical concentration be met that would include required laboratory testing. Contact: Sherry or Nancy at SBEAP 800-578-8898 for more information on these programs.

Permit process incentives:

- Several states use reduced permit fees as an incentive for the business to reduce emissions. In Michigan, businesses involved in the *Clean Cooperate Citizens* program benefit from permit process incentives by committing to a P2 plan. These businesses must identify P2 options, establish P2 goals, and report on

accomplishments along with other P2- related activities. In turn, the facility benefits from permit process incentives such as approval to begin construction while review is in process, an expedited decision on the business' permit application within 30 days, and eligibility for a facility-wide emission cap, which allows for some process changes without permit modifications. Contact: Valerie Hann, Michigan Dept. of Environmental Quality, 800-662-9278.

Whole facility permit:

- Several states have worked with whole-facility and multimedia permitting and inspection approaches. This approach has an obvious benefit as it allows the agency to look at all pollutant sources simultaneously. This approach has the potential to reduce emissions without shifting pollutants from one media to another, a problem associated with single media end-of-the-pipe control situations. Among the areas that have worked with this approach are New Jersey, Massachusetts, Delaware, and Dade County in Florida. Contact: Nicole Hefty, Dade County Dept. of Environmental Management, 305-372-6825.

According to the EPA, states that have moved from single-media to multimedia permit review processes use some or all of the following steps:

- Share information informally with permit writers from all media groups. Identify common sources of problems that can be dealt with simultaneously.
- Develop regular working groups of permit writers and or industry environmental managers from various media areas.
- Make use of resources such as facility P2 plans, and discuss such plans with staff that are reviewing the plans.
- Work together to use the earlier identified screening tools to identify candidate facilities that may benefit from multimedia approaches.

Some of the drawbacks identified by agencies that utilize multimedia permit review processes include increased initial time investment added to the permit review timeline, acclimating agencies and business to a new process, and overcoming differences between individual agencies need to be addressed prior to and during the move from single-media to multimedia review processes.

One state that has recently moved to a multimedia approach is Massachusetts. State officials there indicate the multimedia approach has worked well for them as approximately 75% of their inspected clients have 100 or fewer employees. Their clients appreciate the fact that only one inspector visits the facility instead of three or more separate inspectors, and state employees take the information gathered during the inspection back to a group of regulatory experts for review. Contact: Keith Anderson, Massachusetts DEP, 508-792-7692, www.state.ma.us/dep.

Notes Page