

# NORTHEAST STATES POLLUTION PREVENTION NEWS

NORTHEAST WASTE MANAGEMENT OFFICIALS' ASSOCIATION (NEWMOA)

Vol. 3 No. 3 85 Merrimac Street, Boston, MA 02114, (617) 367-8558 Summer 1993

# NORTHEAST STATES POLLUTION PREVENTION ROUNDTABLE

# **NEW PAPER**

We published this newsletter on a different paper and would like to get your comments on it. The paper is 100 percent recycled content - 50 percent post consumer content and 50 percent publishers overruns. The paper is made completely from newspapers and magazines, i.e. 100 percent deinked fiber. It is bleached with non-dioxin producing hydrogen peroxide. Please call or write NEWMOA and let us know if you like this paper - its color, texture, etc. We like using paper with high post consumer content and non-chlorine bleach, but we also care about what you think.

#### ADDRESS CHANGE

NEWMOA manages the Northeast States Pollution Prevention Roundtable (NE Roundtable). NEWMOA will be moving its offices from its current address to 129 Portland Street, 5th floor, Boston, MA 02114-2014 on August 1. After that date, please address all correspondence to this new address. Our telephone number will remain the same.

# **NEW REPORTS**

Waste Reduction in New Hampshire

The Northeast States Pollution Prevention Roundtable and the New Hampshire

Department of Environmental Services (DES), Waste Management Division recently completed a report on hazardous waste generation in New Hampshire. Funding for the report was provided by the EPA Region 1 Waste Division. The purpose of the study, "Sources of Hazardous Waste Shipped for Incineration, Landfill or Stabilization: Using Biennial Report Data in the Design of Waste Reduction Services in New Hampshire," was to identify sources of hazardous waste shipments to landfills and incinerators, which are management techniques that may have a capacity shortfall. The study also developed and tested an approach to identifying the sources of shortfall waste shipments that might be appropriate for some or all states in the northeast.

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The NE Roundtable and New Hampshire DES conducted the study to assist in identifying potential participants in a pollution prevention workshop for selected hazardous waste generators. The workshop will be designed to educate generators in New Hampshire about waste reduction opportunities and to discuss barriers and incentives to achieving the waste reductions targeted in the state's Capacity Assurance Plan (CAP). The workshop should take place later this year.

#### Household Batteries

The NE Roundtable recently published an update to its 1991 report on pollution prevention strategies for household batteries. The update to the original report, "Source Reduction of Toxic Metals in Household Batteries: Federal, State and Industry Initiatives", covers recent activities by EPA and the northeast states to regulate household batteries. The report includes copies of legislation or regulations that were recently enacted by the northeast states to require reductions in the heavy metal content of household batteries and to require collection of certain batteries prior to disposal.

Copies of these reports are available by contacting the NEWMOA office for ordering information and their price.

For more information contact: Terri Goldberg, NEWMOA, (617) 367-8558.

# CONNECTICUT

#### CONNECTICUT DEP

# Best Management Practices for Industry

The Connecticut DEP Bureau of Water Management just published a handbook of best management practices that covers 20 small business segments, including drycleaning, non-agricultural pesticides, auto repair and auto body shops, and furniture refinishing. Industry profiles are provided. Basic operations and the associated best management practices are described in the form of a chart. For more

information about this publication, contact Oswald Inglese at the Department of Environmental Protection, 79 Elm Street, Hartford, CT 06106. The purchase price of the booklet is \$5.00 and it may be obtained by contacting the Natural Resources Center of DEP.

# Pollution Prevention Checklists for Industry

The Bureau of Waste Management recently compiled checklists of pollution prevention tips for 20 industries, from printing to circuit-boards. To obtain a copy of these checklists please contact Elizabeth Flores at the Department of Environmental Protection, 79 Elm Street, Hartford, CT 06106.

# Northeast States Pollution Prevention News

Northeast States Pollution
Prevention News is published on a
quarterly basis by the Northeast Waste
Management Officials' Association's
(NEWMOA) pollution prevention
program, called the Northeast States
Pollution Prevention Roundtable. It is
provided free to the northeast states,
EPA and other interested individuals.
The newsletter is supported by funds
from EPA Regions 1 and 2 and by the
northeast states.

We appreciate hearing comments and suggestion on the newsletter from our readers. Write or call NEWMOA at the address on the cover of the newsletter. Please use the form at the back of this issue to request an address change or to add your name to the mailing list. We appreciate your cooperation in ensuring that we have your correct address.

#### THE NORTHEAST WASTE MANAGEMENT OFFICIALS' ASSOCIATION

The Northeast Waste Management Officials' Association (NEWMOA) is a non-profit interstate governmental association whose membership is composed of the hazardous and solid waste program directors in Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island and Vermont. NEWMOA is a forum for increased communication and cooperation among the member states, a vehicle for the development of unified positions on various issues and programs, and a source of research and training on hazardous and solid waste management and pollution prevention. NEWMOA's pollution prevention program was established in 1989 to enhance the capabilities of the state environmental officials in the northeast to implement effective source reduction programs. The program is called the Northeast States Pollution Prevention Roundtable (NE Roundtable). The NE Roundtable involves four components: (1) establishing a clearinghouse of information (2) conducting training sessions (3) researching source reduction strategies and (4) organizing NE Roundtable meetings and committee activities. NEWMOA's PP program is supported by grants from the U.S. EPA and by NEWMOA member states.

### Training, Education and Outreach

Requests for coordination, training and information on pollution prevention from staff and the public have increased. Fact sheets were distributed to auto repair facility personnel at a regional trade show held in May. An introductory presentation on pollution prevention was conducted for the DEP's pesticides inspection staff in April, and follow-up sessions are planned for the summer.

# Small Business Assistance Program Ombudsman Hired

The Department recently hired Tracy Babbidge to assist small businesses in meeting the requirements of the Clean Air Act Amendments. She is developing the small business assistance program for the State Implementation Plan. For more information, contact Tracy Babbidge at the Bureau of Air Management, 79 Elm St., Hartford, CT 06106.

#### Address Change

For the first time since its inception, all the staff of the Department of Environmental

Protection will be housed in the same building. The Department's new address is:

Connecticut Department of Environmental Protection 79 Elm Street Hartford, CT 06106

For more information contact: Mary Sherwin, CT DEP, (203) 566-5217.

#### **CONNTAP**

# Presentations/Training

ConnTAP staff presented information on ConnTAP to representatives from the Department of Economic Development (DEP) Business Response Center (BRC). In the past year, BRC employees responded to over 12,000 calls from businesses requesting information on Connecticut's business assistance programs. The goal of the presentation was to educate BRC employees on ConnTAP's services and resources, and to provide guidance on what types of calls should be referred to ConnTAP.

- Staff gave presentations on ConnTAP's services/success stories at a Hamilton Standard/United Technologies pollution prevention committee meeting in Windsor Locks. Approximately 25 committee members attended.
- The second of two 1993 hazardous waste management conferences co-sponsored with the Waste Bureau of the DEP was held on May 14, 1993. ConnTAP personnel gave presentations at the event attended by approximately 250 people.
- Staff were interviewed by a representative from the Waste Reduction Institute for Training and Applications Research (WRITAR). The organization is preparing a document on effective pollution prevention outreach and training to industry.
- Staff attended the National Pollution Prevention Roundtable meeting in San Diego, CA. The three-day conference provided an opportunity for staff to learn of new pollution prevention goals, regulations, projects and case studies. Staff also contributed to the planning of future national pollution prevention efforts and established/renewed contacts nationwide.
- Staff gave a presentation on management/prevention alternatives for automotive oil at an EPA "Pit-Stops" meeting. The 25 attendees from across Region 1 met to discuss management/prevention options for the automotive repair industry and to plan for an upcoming "Pit-Stops" workshops scheduled for late fall 1993.
- Approximately 30 ConnTAP general information packets were distributed at the Valley Garagemen's Association (VGA) exposition. Over 100 representatives from Naugatuck Valley automobile repair/maintenance businesses attended the event to learn of products and services to benefit three operations.

#### Newsletter

The Spring 1993 issue of ConnTAP Quarterly was completed and distributed. The eight-page newsletter featured a new column with an interview of an industry representative

involved in pollution prevention efforts. The newsletter also contained an article evaluating the applications, advantages/disadvantages of numerous alternatives to ozone depleting solvent.

# Hazardous Waste Status Report

Three public hearings on the draft of the status report on hazardous waste generation and management in Connecticut were held in Hartford, Norwich and Waterbury. Staff gave presentations on the purpose/findings of the report, while the public was provided an opportunity to submit comments and ask questions. The report was put together by the Hazardous Waste Program of the Connecticut Hazardous Waste Management Service, which is ConnTAP's parent organization.

# Ozone Layer Protection Conference and Exposition (Solvents Bazaar)

ConnTAP's Ozone Layer Protection Conference and Exposition will be held on September 8 - 9, 1993 in Hartford, CT. The first day will feature presentations addressing nonozone layer depleting solvents. The second day will feature practical demonstrations of nonozone layer depleting solvents. The exposition/solvents bazaar will feature approximately 30 vendors and their equipment.

For more information contact: ConnTAP, (203) 241-0777.

# MAINE

# MAINE DEP

# The Maine Environmental Partnership Program

The Maine Environmental Partnership Program is committed to providing comprehensive, multimedia pollution prevention technical assistance to the regulatory community. Within the partnership program the Department of Environmental Protection staff has worked with eight facilities under the following projects:

- International Paper (IP) Called the Total Quality Environmental Management Project, this project involves DEP multimedia compliance and engineering teams working directly with IP to implement pollution prevention initiatives throughout its Jay mill. Early results include dramatic reductions in BOD loading to the Androscoggin River. This project is ongoing and future activities will be initiated to quantify environmental and economic gains from the P2 activities. The cooperative interaction among the Department and IP participants has been exemplary.
- Boise Cascade A Pollution Prevention Team, which includes DEP and Boise engineers, is reviewing a variety of program areas where the Rumford mill would like to improve environmental performance. Air related issues have been a primary emphasis although all media will receive attention as the project progresses.
- Maine Metal Products Association In a joint Maine Metal Products Association/Natural Resources Council of Maine (NRCM) sponsored project, the DEP, OSHA, the NRCM and Maine Waste Management Agency and consulting engineers recently completed pollution prevention audits at four metal products facilities. Companies transferred technology, learned from each other, and received engineering as well as regulatory assistance from the Maine Office of Pollution Prevention (OPP). A follow-up report on the project is due to be published within the next few months. The Department's submission to the report will identify significant opportunities for pollution prevention in all four facilities.

## **Future Projects**

The OPP staff is actively pursuing work with trade associations in order to increase the Department's outreach capacity. Two such projects are in the beginning stages of development.

• Maine Auto Dealers Association (MADA) - DEP and MADA are conducting a joint project to evaluate alternative solvents. Many "green" products are being marketed at this time, and onsite evaluation will help determine the

economic, environmental and practical efficacy of products in four to five auto repair facilities. Sampling and testing of products will be done by DEP at eight and twelve week trial periods. Dealerships will fill out evaluation forms on product quality issues. Results will be included in the first quarterly pollution prevention newsletter tentatively scheduled for publication in late July.

• Maine Marine Trade Association - DEP staff will be providing onsite assistance to marine industries for toxic and hazardous waste reduction and stormwater management. In addition, DEP, Bath Iron Works, and Portsmouth Naval Shipyard are linking up to host training for the Association on environmental programs and pollution prevention opportunities.

# State Agency Pollution Prevention Project

The OPP has identified and begun preliminary meetings with the following state offices: the Department of Transportation, the Bureau of Public Improvement and the Bureau of Purchasing. The project's goal is to identify and implement pollution prevention opportunities within state government wherever possible.

# **Pollution Prevention Awards Program**

On April 23, 1993 the Commissioner kicked off the Department's Pollution Prevention Awards Program at a breakfast meeting with business leaders. Specifics about the Awards Program are included in a brochure, and a press release was issued.

# **Pollution Prevention Training**

In February the OPP staff began a series of training workshops for industry on pollution prevention planning. A total of 12 sessions have been scheduled through May 1993. Seventy-eight companies have participated to date.

Participants received training on the planning and reporting for Ch. 26 specific to their industry. Pollution prevention staff have been surveying the technical assistance needs of

industry in these meetings. The results of this survey will be analyzed in June.

# Guidance Document and Report Form

A pollution prevention guidance document was published in late December and distributed to industry in January. A reporting form to track facility's progress in toxic use, toxic release and/or hazardous waste reduction is under development, with scheduled completion in July 1993.

#### **Quarterly Newsletter**

The first issue of a quarterly newsletter is tentatively planned for late July and will report on program progress and projects both within and outside the department. The newsletter will be mailed to the regulated community, and will be provided upon request to any other organizations outside the department. It will also be distributed to all DEP staff.

For more information contact: Ann Pistell, ME DEP, (207) 287-7881.

# **MASSACHUSETTS**

# MASSACHUSETTS DEP

Toxics Use Reduction
Planner (TURP) Certification Program

The Planner Certification Regulations (310 CMR 50.50) were published by the Secretary of State on May 7, 1993. We expect to mail the application package in late June of 1993 and begin accepting applications and issuing certifications shortly thereafter. TURPs can become certified by either demonstrating to the Department that they have two years experience in Toxics Use Reduction Activities or by completing the Toxic Use Reduction Planner Course offered by the Toxics Use Reduction Institute, and passing a uniform certification exam offered by DEP.

The first TURP certification examination was offered on June 5, 1993 at four locations across the state: Bridgewater State College, University of Massachusetts at Amherst, University of Massachusetts at Lowell, and Worcester Polytechnic Institute. Close to 200 individuals took the exam. We expect to grade them during July and August and mail the results in September.

# **Toxics Use Reduction Planning**

DEP is working with TURI and OTA in the development and implementation of the Plan Enhancement Project. One component of this will be the development of planning guidance that interprets the planning regulations. This guidance will feature "Model Plan Sections" designed to show by example the range of approaches that firms can take to the planning process. One contractor has just about completed work with us and volunteers from industry to prepare these model sections. We expect to have completed this work by midsummer.

#### **Annual Reporting**

MA DEP mailed the reporting package for calendar year 1992 to all TURA filers in early May. In addition OTA, TURI and DEP jointly offered six day long reporting and planning training seminars during May and early June.

#### Toxics Use Reduction Data

DEP has entered into the Facility Master File almost all of the calendar year 1991 TURA reports. (The only reports that have not been entered are those for which we are awaiting further information from a filer.) We expect to have all of the reports entered by early July. In addition, we have made all of the necessary corrections to the 1990 calendar year reports. We have worked with OTA and TURI to identify the list of reports from the data system that will be needed to evaluate progress in toxics use reduction and to further each agency's agendas, and have engaged a short term contractor to write the desired reports. We are about to offer the permanent data management position.

#### Waste Prevention F.I.R.S.T.

DEP is progressing on the TURA mandate to convert all of its inspections to a multimedia based approach. We have hired a contractor to develop the necessary guidance material and training program to insure that as of next fiscal year, all initial compliance inspections will be "multimedia". The next round of training is scheduled for August.

In addition DEP has completed a work plan for a "source reduction biased" permit project, which is designed to identify and evaluate modifications to our permitting process that will encourage firms to use "Toxics Use Reduction" as opposed to "Treatment" techniques to comply with environmental regulations. We expect to complete the design phase this summer, and begin trying to implement the modifications on September 1, 1993. The pilot project will run until winter of 1994.

Finally DEP is developing criteria for determining in which enforcement cases the agency should be encouraging firms to examine the feasibility of using source reduction or toxics use reduction techniques to return to compliance. We are also developing an alternative penalties policy that will be designed to encourage firms to use source reduction rather than treatment to return to compliance.

#### Reorganization

DEP is in the process of interviewing and selecting staff for the new Office of Program Integration. Directed by the new Deputy Assistant Commissioner, Lee Dillard, this office will work with the media programs to ensure that our compliance, enforcement, permitting, policy and regulatory development, non-facility pollution control program, program planning, and reporting programs are all run with a multimedia perspective and use pollution prevention as the main means of achieving environmental protection. We expect to have the unit fully staffed early this summer.

For more information contact: Suzi Peck, MA DEP, (617) 292-5870.

## MASSACHUSETTS OTA

Onsite technical assistance planning continues to be a focus for OTA staff and OTA's planning team. OTA, DEP and TURI have hosted six workshops over the past month to educate industry about the planning requirements and answer questions regarding the planning process.

In addition to the workshops, planning clinics are also being developed. Industries requiring planning assistance will be able to come to these clinics to receive more in-depth assistance with their particular planning needs. Staff from all TURA agencies will be available for assistance at the clinics.

# **Upcoming Workshops**

- \* "Roundtable on Military Specifications", September 15, 1993. The location will be announced. This workshop is a joint effort with EPA Region 1 to explore issues surrounding Mil-Specs and environmental compliance. Specific issues include Mil-Specs that: prevent pollution; do not comply with federal and state environmental regulations; and require the use of such chemicals as ozone depleters. Participants will include MA DEP, DOD, and local industry.
- "Conference for Printers", September 30, 1993 at the Royal Plaza Trade Center, Marlboro, MA. This is also a joint effort with EPA Region 1. Sessions will be held on such subjects as pollution prevention, cleaning principles, and regulation overview.

#### **Grant Projects**

The EPA-funded Critical Parameters grant continues to collect household hazardous materials for recycling. Fourteen households were served in April and 99 gallons of material collected for recycling, including oil, antifreeze, and photographic solution.

Consumer pollution prevention education moves ahead with the signing of a contract to produce a video on pollution prevention steps for households. Production should begin this month

on a video for cable television that will teach residents the steps they can take to reduce toxics use in the home. The video should be completed by the end of the summer, and broadcast on Cable TV through the end of 1993.

Microtox testing data from the Warren POTW continues to show good correlation between acute toxicity and industrial surfactant use as well as correlation between chronic kill and industrial salt usage. Industrial users of these chemicals have agreed to reduce inventory of problem surfactant and explore alternative losalt dyes. If the testing at Warren successfully identifies sources of aquatic toxicity and steps are taken by industry to reduce identified loads to the POTW, Warren could avoid expensive facility upgrades.

#### Clean State Initiative

On February 3, Governor Weld signed Executive Order 350 establishing Massachusetts' Clean State Initiative. Under this initiative, all state agencies are to work diligently to ensure they fully comply with all Massachusetts environmental statutes, including pollution prevention. Deadlines for the initiative include compliance audits of all state facilities by June 1, 1993 and Pollution Prevention Plans prepared by July 1, 1993.

OTA has been busy assisting state agencies to identify toxics use reduction opportunities as well as prepare pollution prevention plans. Assistance to date includes state facilities such as correctional institutions and hospitals.

#### Workshops on Video

The following videos are available from OTA on VHS. To receive a copy of any video, please send a blank tape and the name of the video you wish copied, along with your name and mailing address, to OTA.

- Total Quality Environmental Management 2 tapes
- Cutting Water Waste, Cutting Toxics,
  Cutting Costs 2 tapes
- Cooling Tower Workshop 2 tapes

- Pollution Prevention in Printed Circuit Boards - 3 tapes
- Focus on Silver, Pollution Prevention in Photoprocessing 2 tapes
- Technical Strategies for Waste Reduction in the Metal Working Industry and Machine Shops - 2 tapes
- Coatings Conference: P2 in the Coatings
   Industry 2 tapes
- Blackstone Project 1 tape

The following tapes are in the OTA library and can be viewed at OTA or borrowed.

- In Living Color Teleconference
- Solvents: The Good, the Bad, and the Banned Teleconference
- Water-Based Alternatives to Solvent Cleaning Teleconference

# Annual Report

The first TURA Annual Report is currently being prepared for printing and distribution. It will cover all TURA programs and work done by DEP, OTA, and TURI since passage of the Toxics Use Reduction Act. The Report should be available some time this fall.

## **Integrated Pest Management**

Work continues on an IPM pilot project in Boston schools. The working group is developing an RFP to hire an integrated pest control firm for five pilot schools. The contract for the IPM firm will begin this fall and last one to two years.

# TUR Package for High Schools

OTA now has available a package of information to assist agencies implementing pollution prevention in high schools. The information covers lab safety, chemical storage, microscale techniques, and chemical purchasing.

For more information contact: Lisa Dufresne, MA OTA, (617) 727-3260.

#### MASSACHUSETTS TURI

Activities of the Toxics Use Reduction Institute (TURI) in research, education and training, and technical support have included the following:

TURI recently participated in public hearings on chemical restrictions, published two substitution studies, and issued tentative Research Fellow and Matching Grants awards.

- TURI participated in two public hearings on its report: Toxic Chemical Management in Massachusetts: An Analysis of Further Chemical Restriction Policies. The hearings were held in Boston and Springfield, Massachusetts in June. Ten individuals testified at the hearings. They included Massachusetts citizens, and representatives from in-state trade associations, manufacturers, and public interest groups. Written comments are being accepted on the report and will be available to the public.
- TURI has published two case studies on alternatives to solvent-based paints and solvent-based inks: Substitution Case Study: Alternative to Solvent-Based Paints (Technical Report No. 4) and Substitution Case Study: Alternatives to Solvent and Petroleum-Based Paints (Technical Report No. 5). These reports are available for public distribution and can be requested from the TURI office.
- Funding for TURI's fiscal year 1994
  Matching Grants Program and Research Fellows
  Program were awarded. The Matching Grants
  Program provides direct funding to Massachusetts
  industries for toxics use reduction projects. For
  fiscal year 1994, approximately \$80,000 was
  awarded to Beloit Fiber Systems, Northrop
  Corp., Plastic Distributing Corp., The Robbins
  Co., Smith & Wesson, and Bay State Skills Corp.
- The Research Fellows Programs, which is designed to develop and test toxics use reduction technologies and methodologies through university research, was awarded to five fellows for fiscal year 1994. The five projects are "Non-Volatile Precursors to Olefinic Bromofluorocarbons as Alternative Fire

Extinguishing Agents with Reduced Global Environmental Impacts"; "Design for Environment Metrics and Fuzzy Logic"; "Impacts Analysis of Pesticide Bans"; "Evaluation of the Interaction of Supercritical Carbon Dioxide with Polymeric Adhesives"; and "Proposal for Formaldehyde Use Reduction in Mortuaries and Anatomy Laboratories".

# **Education and Training**

TURI has developed, conducted and cosponsored a number of training programs. These programs have included the following:

- Environmental Careers Organization (ECO) TAPTUR Training Program, designed for retired engineers hired by ECO to manage TUR projects around the country. This program was conducted in April in Cambridge, Mass.
- Toxics Use Reduction Planners
  Refresher Course, developed for individuals who
  took the Toxics Use Reduction Planners course.
  The refresher course was designed to prepare
  TURP course graduates for the Department of
  Environmental Protection Certification Exam.
  The course covered topics on process
  characterization, financial issues, and
  environmental regulations. The course was held
  in Lowell, Taunton, and Worcester between May
  and June.
- Reporting and Planning Workshops, developed for TURA Form S filers. The course included topics on TURA overview, introduction to reporting, advanced reporting, introduction to planning, and introduction to the Plan Enhancement Planning (PEP) Program, which is a new program developed by TURI and OTA. The course was co-developed and co-taught by TURI, OTA, and DEP.

# Other Training Sessions Planned

 Process Characterization Workshops focusing on production unit identification, preparing a process flow diagram, unit of product identification, materials accounting, and cost accounting. These workshops will be jointly sponsored by TURI, OTA, and DEP during the summer of 1993.

• The Toxics Use Reduction Planners
Course will be repeated in the fall of 1993 at
various locations across Massachusetts. A
registration package can be obtained from TURI.
Registrations by telephone will not be accepted.
To date, over three hundred individuals have
attended the course.

# TURI's Technical Support Group Activities

A two-hour discussion featuring Richard Simon of ECO Clean, a company that trains cleaners in a wet cleaning alternative to solvent-based dry cleaning took place on June 17. The discussion was part of TURI's Alternatives in Dry Cleaning Project. During the summer, the project will present several hands-on training seminars on pollution prevention for dry cleaners. Other alternatives to the traditional dry cleaning process will be investigated for economic and performance viability during the summer.

TURI is sponsoring a Technical Study of Press Washes for sheetfed offset lithography. This study is designed to assist commercial printers with environmental decisions. The Graphic Arts Technical Foundation will be conducting performance tests on fifteen commercially available press washes at the end of June, and results of the study are expected to be available by September.

- TURI's Technology Transfer Center continues its ongoing efforts to develop an integrated database of toxics use reduction information. The Center currently has over 1,500 documents and 800 vendors entered into the database and expects it to be fully functional by the end of the summer. All of the documents in the database are housed at TURI and are available for Massachusetts industry as well as all other TUR audiences. During the spring of 1993, the Technology Transfer Center responded to over 50 requests for information on various TUR topics.
- The next mailing for the Metal Surface Finishing Subscription Project (64 subscribers to

date) will take place in July. This project has been so successful that work has began to identify another industry for a similar subscription service.

• TURI's Industry Advisory Committee met in May and discussed a number of topics on which it is seeking input from industry.

For more information: TURI, (508) 934-3275.

# **NEW HAMPSHIRE**

# **NEW HAMPSHIRE DES**

#### Outreach

A team from the NHPPP, along with pollution prevention coordinators, Stephanie D'Agostino and Chris Simmers, from the DES attended a meeting at the Nashua POTW. This informational meeting was held to discuss the need for waste reduction at discharging industries. The wastes that cause most problems were high levels of grease and plating wastes. At present, they are experimenting with biological agents to digest the grease, but it has not been successful. POTW management personnel and NHPPP staff will arrange for workshops with their industry members to promote pollution prevention.

A two year biomonitoring project has been launched by the Merrimack Valley Initiative, the end result being to compare samples taken from the Merrimack River for determining the effects of pollution prevention over a period of time. In order to establish the health of the ecosystem, biological substrates were placed upstream and downstream of Nashua and Franklin POTW outfalls to collect samples of the water life at those points. Samples such as these will be taken periodically and compared during which time pollution prevention programs will be promoted in the area. The results should provide an indication as to whether industries are employing (or need) a source reduction philosophy.

#### Multi-Media Task Force

At the Multimedia Task Force meeting, a presentation of the Small Business Technical Assistance Program was made. This program will focus on helping businesses to comply with the requirements of the Clean Air Act Amendments. The NHPPP will provide technical support for the program and, hopefully, multimedia assistance will be provided through the program.

A study organized by Department of Public Health Services/Risk Assessment assessed the risk to public health associated with the release of certain air toxics. This project, based on TRI data, was beneficial in illustrating how an industry can lower discharge levels by converting to an alternative chemical. However, if this chemical itself is more toxic than the original, discharge levels are lowered but the danger from hazardous materials is increased. This study could be used to target particular facilities for source reduction, and to target the most important types of wastes for reduction assistance.

#### In-House Library

The compilation of 134 out-of-state case studies has been completed and successfully imported into the InMagic database. Full documentation of technical papers has now been achieved, and with the out-of-state case studies should be compiled, in-state case studies and vendor databases can now be developed. Several NH businesses have agreed to become case studies, and with available funding, graduate students from the University of New Hampshire Engineering School will begin research in September. It is expected that this small grant will generate approximately 12 case studies from NH businesses.

# Solvents Bazaar

The NHPPP is now concentrating on preparation for the Solvents Bazaar scheduled for August 12th. At the present time, close to 30 vendors are registered to attend and demonstrate their equipment and products. A mailing list has been compiled for participants attending the

conference, mostly targeting the metal manufacturing industries in New Hampshire and in the Merrimack Valley in Massachusetts.

Notification in the form of a "save this date" postcard is being printed with a full brochure under design. The Center of New Hampshire in Manchester where the Bazaar is to be held, has been reserved, and details are being finalized with a Hazardous Waste Hauler for removal of the wastes.

#### On-Site Waste Minimization Assessments

Requests for on-site waste minimization assessments have been few. A probable reason for this is the issue of the NHPPP being a non-regulatory program located in a regulatory office. The role of pollution prevention in enforcement activities is a matter of study by the Multimedia Task Force. While pollution prevention planning will be required as part of enforcement actions by the various divisions, other options are being considered to take advantage of the fact that the DES's regulatory agencies can provide the NHPPP's "white hat" services from within a regulatory setting.

The final assessment of one National Guard base has been completed and a walk through at an adhesives manufacturer is scheduled for the end of June.

# NHPPP/UNH Partnership

The NHPPP has just received word that its pre-application for the FY-93 Pollution Prevention Incentives for States (PPIS) Grant Program has been approved for final submission. EPA has determined that we are eligible for \$84,000 to create NH's first DES-NHPPP/University of NH Pollution Prevention Partnership. This partnership will provide for several activities, including the development of a Pollution Prevention Curriculum at the Chemical Engineering Department, "hands-on" experience for graduate and undergraduate students in the form of on-site assessments, case studies development, timely pollution prevention research, and participation in other outreach activities.

#### NHPPP Newsletter

The second issue of the NHPPP Newsletter, "Wastelines", will be distributed in July. If you would like to be placed on the mailing list, please contact the NHPPP.

For more information contact: Liz Todd, NH DES, (603) 271-2902.

# **NEW JERSEY**

#### NEW JERSEY DEPE

#### Policy Issues

The final two Memoranda of Understanding (MOU) for the facility-wide permit (FWP) program were signed by Schering-Plough and Fisher Scientific. Facilities are now preparing pollution prevention plans, which will be submitted as part of their multimedia permit application. The applications will be submitted at separate times throughout the program to pace the work of the single permit team that has been assembled to prepare all three FWP's.

OPP has secured \$60,000 of Region 2 monies to be awarded to a contractor of OPP's choice for the purpose of conducting pollution prevention training within DEPE. The training project will have three components: the first component will involve having the consultant provide, as needed, assistance to the DEPE facility-wide permit team in working with the three companies to develop their pollution prevention plans; the second component will be a training session in the fall for select permit and enforcement staff; and the third component will be the development of training materials that OPP will have on-hand for future training.

OPP staff met with the DEPE Bureau of Pesticides staff to discuss research efforts to encourage reduced pesticide use in NJ's agricultural community. OPP is developing a research proposal through the Division of Science and Research to explore regulatory incentives and disincentives for integrated pest management.

#### **Guidance Document**

Staff in OPP worked diligently on the Pollution Prevention Guidance Document and developed a case study demonstrating how the different steps of a Pollution Prevention Plan should be completed.

OPP staff, in conjunction with an outside contractor, have finalized the Pollution Prevention Plan Summary and Pollution Prevention Plan Progress Report forms. The Progress Report form is part of a combined reporting form with the Community Right to Know Throughput and Pollution Prevention Report (Form DEQ-114). These documents should be made part of the guidance document.

#### Training

Three half day workshops are scheduled for June, one with the Cook College Short Course Program and two with industry trade associations, to learn about pollution prevention planning and compliance with the New Jersey Pollution Prevention Act. Outreach efforts are currently targeted at facilities in the law's priority SIC codes (26, 28, 30, 33, 34) since these facilities are required to prepare Pollution Prevention Plans and submit Plan Summaries to the DEPE by July 1, 1994. OPP's outreach plans include. on-site visits and training for staff at individual facilities, additional workshops for members of relevant trade associations and technical assistance materials targeted at specific industries or users of certain chemicals.

# Right to Know Forms

Staff from the Office of Pollution Prevention worked closely with the Bureau of Hazardous Substance Information to develop the modified 1992 NJ Community Right to Know forms (CRTK). These forms are to be mailed out by the CRTK program with a July reporting date. Changes were made to improve clarity and reporting accuracy and to include new data elements mandated under the NJ Pollution Prevention Act.

Staff in OPP met also with staff from the Bureau of Hazardous Substance Information to discuss the database needs of each program. The Bureau of Hazardous Substances Information routinely collects state Right to Know data and has been responsible for developing systems to store data and have it entered. The two programs plan to dovetail reporting for Pollution Prevention Plan Summaries under the New Jersey Pollution Prevention Report (DEQ-114) since much of the information required by each is duplicative. The programs plan to develop bid specifications for a new system that will house the dovetailed data and allow for future data analysis.

#### Site Visits

Several site visits were conducted as part of the on-going research project on the effectiveness of materials accounting data for measuring pollution prevention. As part of these visits, evaluating 1989 and 1990 Toxics Release Inventory and NJ Right-to-Know reports, informal training on proper RTK reporting and future pollution prevention requirements were also covered.

#### Research Studies

OPP has begun study on approaches for building pollution prevention financial incentives into the state tax structure. The staff have begun another study on the impact of chemical sunsetting on pollution prevention and a method for anticipating secondary effects of chemical sunsetting policies. A third study will contribute to OPP's broader program evaluation, including developing a baseline for pollution prevention, measuring progress from 1994 through 1996 and studying the impact the pollution prevention regulatory program had on corporate decision-making.

#### **Industrial Profiles Project**

The industrial profiles project has revealed that, for most measures of release and throughout of hazardous substances, relatively

few facilities account for the bulk of the quantity. Another finding of interest is that, so far, source reduction efforts of covered facilities have been minuscule. Finishing touches are being made to the text of the project report.

#### Future of NJTAP

OPP spent considerable time planning a long term direction and short-term management needs for the TAP at NJIT. Meetings were held with NJIT representatives, and a paper was drafted that projects TAP's mission over the next 2-5 years. In addition, discussions were held between Environmental Regulation staff and NJIT about expanding the TAP's efforts to include other regulatory technology transfer needs including stormwater technology transfer and small business assistance pursuant to the Clean Air Act.

# Chemical Company TUR

OPP and the permit team met with representatives from Sybron Chemicals to discuss a potential pollution prevention option that could have a dramatic impact on reducing discharges of total dissolved solids (TDS) to the Rancocas Creek. The solution actually involves reducing the generation of acid gases that require neutralization (a real multimedia pollution prevention solution). It may take a year or so to complete R and D studies to get the new process working. Sybron is having problems meeting their TDS limits because sales of the products produced in these processes have increased significantly. Interim limits, which are above current limits, may be needed to allow Sybron to complete the R and D studies and remain in compliance. A meeting is scheduled with enforcement and permit staff from air and water to discuss strategies for the interim limits.

For more information contact: Deborah Milecosky, NJ DEPE, (609) 777-0518.

# **NEW YORK**

# NEW YORK STATE DEC

Toxic Chemical Reduction Plans Regulation (Part 378)

The New York State Department of Environmental Conservation (DEC) held three meetings of the Multimedia Pollution Prevention (M2P2) Advisory Group in May and June 1993 to obtain comments and input on the revision of the pre-draft of the proposed Toxic Chemical Reduction Plans regulation. The M2P2 Advisory Group comprises thirty members representing small and large businesses, environmental groups, the New York State Legislature and state agencies. The final draft of the regulation should be available for public review in late summer, and public hearings on the proposal will be held statewide in the fall. A final rule should be promulgated and in effect by the spring of 1994.

The Department welcomes comments on the final draft and questions regarding the Part 378 rulemaking process.

#### Pollution Prevention Conference

New York's Sixth Annual Pollution
Prevention Conference was held in Albany, NY
on June 7 - 9, 1993. This year's conference
theme was "An Integrated Approach to Pollution
Prevention" and focused on multimedia pollution
prevention issues. The conference was attended
by more than 300 individuals representing small,
medium and large businesses and industries;
environmental, engineering and legal consultants;
laboratories; local, state and federal governments
and others.

# **Pollution Prevention Bulletin**

DEC publishes a Pollution Prevention Bulletin twice a year to keep readers informed about DEC's activities related to multimedia pollution prevention and technical assistance opportunities.

For more information contact: Louise Inglis King, NYS DEC, (518) 457-2480.

#### ERIE COUNTY OPP

The Erie County Office of Pollution Prevention (ECOPP) continues to provide technical assistance and information to small and medium-sized businesses.

An ECOPP program evaluation has been completed, and the final report is available. The evaluation process provided ECOPP staff with the opportunity to review the way we were delivering services to our small business clients. The review of our services by an independent consultant and the additional input provided by industry through a telephone survey and focus group meeting identified objectives for fine tuning our program elements to maximize the effectiveness of our program. ECOPP will attempt to implement new program policies to address all of the recommendations outlined in the evaluation report.

As a result of the evaluation, ECOPP has instituted a routine call back system to track the implementation of our recommendations and identify the pollution barriers that exist for small business. This will also enable ECOPP staff to develop industry-specific case studies to encourage other companies to consider pollution prevention options.

ECOPP has completed a final policy report that defines the role of local government in pollution prevention and outlines initiatives for all levels of government to promote small business pollution prevention.

Erie County provided presentations for the local government session of the Spring 1993 National Pollution Prevention Roundtable Conference and the New York State Pollution Prevention Conference. Erie County continues to encourage state and federal support for the local government role in nationwide pollution prevention efforts. The Erie County program demonstrates the valuable resource local government represents in encouraging companies to prevent the generation of waste at its source.

For more information contact: Thomas Hersey, Eric County OPP, (716) 858-7674.

#### SUFFOLK COUNTY WATER AUTHORITY

The Suffolk County Water Authority on May 20, 1993 co-sponsored a workshop with EPA Region 2 on "Waste Minimization Opportunities for Metal Spray Painting Operations" at the Huntington Hilton in Melville, Long Island. The workshop was attended by over 45 participants from the automotive and industrial sectors in both Nassau and Suffolk Counties.

The workshop covered such topics as various spray painting systems and equipment options available to the different industrial sectors that could assist them in lowering the amount of solvent they use, paint waste generated and VOC emissions that are released during spraying operations. Additional informative presentations provided an overview on small quantity generator regulations, assistance available to local industries from the New York State Clean Air Act Small Business Assistance Program, how to determine the costs and benefits of pollution prevention measures, and financial assistance available from Long Island Development Corporation and the NYS Department of Economic Development.

Overall, the workshop was well received by those attending from both the automotive and industrial sectors, who expressed definite interest in participating in future workshops.

Other activities over the past few months have included providing assistance to the NYSDEC Natural Resource Damages Unit with information on Long Island drinking water resources to assist them in determining the value of the loss of drinking water to a community and geographic area due to contamination. In addition, assistance was provided to a local automotive dealership on regulations concerning disposal to floor drains (underground injection wells) in automotive shops.

For more information contact: Judy Jakobsen, SCWA Source Reduction Program, (516) 563-0308.

# **VERMONT**

# **VERMONT DEC**

The Pollution Prevention Division is continuing to focus its efforts on providing assistance to facilities that must develop Hazardous Waste Reduction Plans. As of July 1, large and small quantity generators should have developed plans. The division is now preparing to conduct plan reviews, follow-up on non-submittals, and will continue to provide assistance to facilities submitting deficient plans.

On June 17, the Division sponsored and organized a Solvent Alternatives Exhibition in Barre, Vermont. The exhibition attracted large numbers of both vendors and participants. Designed for anyone who cleans or degreases metal parts or products, the exhibition provided a hands-on opportunity for participants to evaluate different alternative chemistries and cleaning technologies. Participants brought many different types of dirty metal parts that challenged vendors of aqueous, semi-aqueous, jet-spray, and ultrasonic cleaning systems. Vermont-specific case studies provided participants the opportunity to better understand how solvent alternatives are working in Vermont, and John Sparks of the U.S. EPA provided a national perspective. The Division will be completing a summary report for the event sometime in July.

The Pollution Prevention Division continues to organize focus group meetings on pollution prevention planning and has recently met with dry cleaners, printers, hospitals, ski areas, and vehicle service interests. The dry cleaners focus group meeting was the first the Division conducted using interactive television. One-third of the state's dry cleaners participated in the televised session. Interactive T.V. can be an effective outreach tool for the Division to reach out to small businesses. The Division will likely conduct many future focus groups using this format.

In April and May the Division conducted a series of thirteen breakfast seminars for managers of automotive service and repair facilities. Over 250 businesses participated in those three-hour seminars held at local restaurants. The focus of these seminars was to discuss pollution prevention opportunities and OSHA and environmental regulatory compliance.

Through the Division's Pollution
Prevention Task Force, a multimedia inspection
checklist has been developed and is now being
used by all DEC inspectors. The effectiveness of
the checklist, to promote greater multimedia
awareness and cross-program coordination, will
be evaluated over the next few months.

The Environmental Leadership group of the P2 Task Force organized a week-long rideshare awareness initiative during the week of May 17. The group planned events each of the five days and provided incentives for employees to rideshare to and from work. Positioning the Agency as the environmental leader it should be, means practicing what we preach and more than one third of the Agency staff participated by committing to commute--with someone else.

Announcements for the 1993 Governor's Awards for Environmental Excellence in Pollution Prevention have been mailed, and the Division is working to prepare a conference in mid-September to present the awards and to discuss how pollution prevention can help Vermonters realize prosperity without pollution. More on this as the event nears.

The Division is also planning a statewide coatings conference for sometime in October. The conference will focus on pollution prevention opportunities and new technologies for industries that utilize coatings.

For more information contact: Doug Kievit-Kylar, Pollution Prevention Division, (802) 244-8702.

# **EPA REGION 1**

Browner Focuses EPA on Pollution Prevention

On June 15, 1993, EPA Administrator Carol Browner released a "Pollution Prevention

Policy Statement: New Directions in Environmental Protection" She described seven themes that will characterize and guide EPA's current and future prevention efforts.

- Regulatory and Compliance: The mainstream activities of the EPA, such as regulatory development, permitting, inspections and enforcement, must reflect our commitment to reduce pollution at the source and minimize the cross-program transfer of waste.
- State and Local Partnerships:
  Increasingly, these entities are the "face of government" for the public. We will strengthen the national network of prevention programs, and, seek to integrate prevention into state and local regulatory, permitting and inspection programs supported with Federal funds.
- Private Partnerships: We will identify and pioneer new environmental programs that emphasize cross-media prevention, reinforce the mutual goals of economic and environmental well-being, and represent new models for government/private sector interaction.
- <u>Federal Partnerships:</u> We must work closely with our counterparts in other agencies to ensure that pollution prevention guides our management and procurement decisions, and to pursue opportunities for reducing waste at the source in the non-industrial sector.
- Public Information/The Right to Know: We will collect and share information that helps identify pollution prevention opportunities, measure progress, and recognize success.
- Technological Innovation: We will try to meet high priority needs for new pollution prevention technologies that increase competitiveness and enhance environmental stewardship, through partnerships with other federal agencies, universities, states and the private sector.
- New Legislation: Where justified, we will not hesitate to seek changes in federal environmental law that will encourage investment in source reduction.

#### Transition

In late May, Robert Sussman was sworn in as Deputy Administrator of EPA. The process for identifying other appointees is moving slowly. Region I does not have a target for announcing a new Regional Administrator.

#### Strategic Planning

Region I Divisions and Offices have completed formulating activities to propose for next year's (FY94) Pollution Prevention Workplans. An initial review of the workplans indicates that activity and workplan quality was high; FTE levels were modest but reflected more solid estimates and commitments. In particular, the media divisions are making steady progress in incorporating P2 in core regional programs.

# Pollution Prevention Incentive for States (PPIS) Grants

Region I has completed review of the Pollution Prevention Incentives for States (PPIS) grant pre-applications. Region I will award \$450,000 in PPIS grants later this year. The Region received seven pre-applications from five states and one tribe, totaling \$550,000. All applicants were invited to submit full applications for all or part of the funds they requested.

#### P2 In Permits

Julia Haverland, a Yale graduate student working with Mark and Abby this summer on pollution prevention topics, will be conducting background research on ways staff in Region 1, other Regions, and the states have tried to incorporate P2 provisions in permits. The practices, policies and training curricula she discovers will be used as a foundation for proposing ways to promote "P2 permitting" in Region 1, and in developing any policy or training necessary. She may be contacting you or your staff!

For more information contact: EPA Region 1, Mark Mahoney, (617) 565-1155 or Abby Swaine, (617) 565-4523.

# EPA REGION 2

#### In-House Activities

Region 2's quarterly Federal Facilities Roundtable was held on June 3. Participants included staff from the Army, Air Force, Navy, DOE, USPS, and the Army Core of Engineers. A representative from GSA spoke to the group about the need for federal agencies to support GSA's efforts to procure "environmentally sound" products.

# Green Lights

During the quarter, Region 2 continued its recruiting and networking efforts with Green Lights. Significant recruiting milestones were the signing of a Green Lights Endorser Agreement by the New Jersey Business and Industry Association and the sponsoring of a Green Lights seminar for its membership with the participation of the four New Jersey Green Lights Utility Allies. Over one hundred member companies of the Association attended the seminar.

Mercer County became the first New Jersey County to sign a Green Lights MOU as a government partner. Region 2 co-hosted a signing event for Mercer County in which the Acting RA and Acting AA for OAR, Michael Shapiro, participated.

The Virgin Islands Water and Power Authority joined the Green Lights Program as a Utility Ally. Region 2 staff participated in a three day workshop conducted by the Virgin Islands Energy Office, also a Green Lights Partner on Green Lights as a Demand Side Management tool for the Water and Power Authority.

#### **Global Warming**

Region 2 staff participated in the preparation of a report to the Environmental Law Committee of the New York State Bar Association at a one day meeting at the New York City Bar Association to review the recommendations on energy efficiency at the

state and local levels of government to address climate change mitigation.

#### 33/50

The following is the emission reduction trends for the 33/50 chemicals comparing 1988 and 1990 Toxic Release Inventory Data (based on information provided as of February 1993):

New Jersey 42% New York 45% Puerto Rico 26% Virgin Islands 36%

EPA Region 2 decided to contact facilities in Puerto Rico that emitted 33/50 chemicals during calendar year 1988. Special attention was given to facilities whose corporate offices have committed to the program. A total of 41 facilities received letters requesting that they indicate if they were included in their corporation's commitment. As of May 4, 1993, the Pesticide and Toxic Substance Branch has received 17 positive responses and only one negative response.

A similar activity is being planned for the next fiscal year in New York State's Great Lakes Area.

#### Grants

Region 2 has received eleven applications for FY'93 Pollution Prevention Incentives for States (PPIS) grant funds. Decisions on awarding these funds will be made over the next few weeks by a multi-divisional panel.

For more information contact: Janet Sapadin, EPA Region 2, (212) 264-1925.

# NEW POLLUTION PREVENTIONS

The following is a list of new publications on P2:

"1993 Reference Guide to Pollution Prevention Resources," U.S. EPA Office of Prevention, Pesticides and Toxic Substances, EPA/742/B-93-001, February 1993. Call EPA's PPIC (202) 260-1023.

"Supercritical Carbon Dioxide as a Cleaning Solvent," The Massachusetts Toxics Use Reduction Institute, University of Lowell, 1992.

"Alternatives to Solvent Cleaning Methods," Rhode Island Department of Environmental Management, Office of Environmental Coordination, February 1992, (401) 277-3434.

"Opportunities for Pollution Prevention Research to Support the 33/50 Program," U.S. EPA Office of Research and Development, EPA/600/R-92/175, October 1992.

"Municipal Water Pollution Prevention Bibliography," U.S. EPA Office of Water, EPA 832B-92-001, April 1992.

"Pollution Prevention Research Branch, Current Projects," U.S. EPA Risk Reduction Engineering Laboratory, January 1993.

"1991 Toxic Release Inventory, Public Data Release," U.S. EPA Office of Pollution Prevention and Toxics, EPA 745-R-93-003, May 1993.

"Measuring Environmental Performance," Executive Enterprises Publications Co. Inc., 1993.

The following publications on P2 are available through the National Technical Information Service (NTIS). NTIS can be reached by calling (703) 487-4650.

"New Technologies for Refrigeration without CFCs," Greg Swift, DE92 018886, 1992.

"Energy and Global Warming Impacts of CFC Alternative Technologies for Foam Building Insulations," S.K. Fischer, P.D. Fairchild, and P.J. Hughes, DE92 019477, 1992.

"Pollution Prevention Opportunity Assessment, Geochemistry Laboratory, Sandia National Laboratories," Kurt Whitford and George Wahl, PB93-146900, September 1992.

"Pollution Prevention Opportunity Assessment, USDA Beitsville Agricultural Research Center," Stephen Sobol, PB93-146843, February 1993.

"Model Pollution Prevention Plan for the Kraft Segment of the Pulp and Paper Industry," U.S. EPA, PB93-145605, September 1992.

"Pollution Prevention for the Kraft Pulp and Paper Industry, Bibliography," U.S. EPA, PB93-145613, September 1992.

"Pollution Prevention Opportunity Assessment and Implementation Plan for Simpson Tacoma Kraft Company, Tacoma, Washington," U.S. EPA, PB93-145670, August 1992.

"The G.O.L.D. Plan, A Strategy for Waste Reduction and Recycling at State Government Facilities", Washington Department of Ecology, PB93-101418, January 1991.

"The G.O.L.D. Manual, Methods to Assist State Agencies and Institutions in the Development of Waste Reduction and Recycling Plans," Washington Department of Ecology, PB93-101400, January 1991.

"Ecology's G.O.L.D. Plan, A Model Waste Reduction and Recycling Plan for State Agencies," Washington Department of Ecology, PB93-118529, August 1992.

New Pollution Prevention Journal:

Journal of Cleaner Production, Volume 1 Number 1, 1993, Butterworth-Heinemann Ltd., Linacre House, Jordan Hill, Oxford, U.K. OX2 8DP.

# ADDITIONAL UPCOMING EVENTS

- Ozone Layer Protection Conference and Exposition, September 8-9, Hartford, CT, Andrew Vecchio (203) 241-0777.
- Pollution Prevention Assessment and Economics, October 7 Pease Education and Training Center, and November 18 at University of New Hampshire (UNH) Nashua Center, UNH Continuing Education (603) 862-1088.
- Pollution Prevention for Chemicals and Polymer Industry, December 13, UNH Nashua Center, UNH Continuing Education (603) 862-1088,
- Integrating Pollution Prevention Organizational Roles and Opportunities, November 4-5, 1993, Center for Excellance in Pollution Prevention Training, WRITAR, (612) 379-5995.
- Pollution Prevention Assessment Training, November 8-10, 1993, Center for Excellence in Pollution Prevention Training, WRITAR, (612) 379-5995.

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