



Pollution Prevention News



Inside:

**Multi-media Pulp
and Paper Rule
Announced 3**

FOCUS ON ENERGY:

**Utilities Qualify
for Bonus SO₂
Allowances 4**

**New EPA Program
Targets Buildings 5**

**Hazel O'Leary
on Energy Efficiency . 6**

Solar Living 7

**Erie County's
Prevention Program 9**

Calendar 12

President Announces Global Climate Change Action Plan to Reduce Greenhouse Emissions

The White House has announced a detailed strategy to combat global warming. President Clinton and Vice President Gore joined with industry and environmental leaders on October 19 to announce the Climate Change Action Plan, which will return greenhouse emissions to 1990 levels by the year 2000, and in the process, expand markets for U.S. technologies and services, create jobs and reduce the deficit.

This strategy is a critical step in addressing climate change, the highest risk environmental problem. The plan consists of 50 new or expanded programs to reduce all types of greenhouse gases. It

establishes groundbreaking public-private partnerships with key industries across all sectors of the economy. The announcement fulfills the President's Earth Day promise to return U.S. greenhouse emissions to 1990 levels by 2000 through American ingenuity and creativity, not bureaucracy and regulation. The United States emits about 20 percent of the global total of greenhouse emissions, more than any other country.

The partnerships and programs resulting from the Climate Change Action Plan will stimulate more than \$60 billion over the next six years in private investment in

(Continued on page 6)

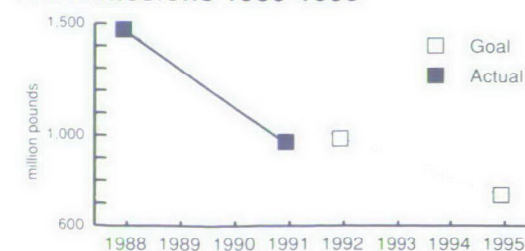
33/50 Program Exceeds Interim Goal

Data released by EPA show that the 33/50 Program met its 1992 reduction goal one year ahead of schedule. The 33/50 Program is a voluntary pollution prevention initiative which derives its name from its overall goals—a 33 percent reduction by 1992 and a 50 percent reduction by 1995 of emissions nationwide of 17 high-priority toxic chemicals. The latest Toxics Release Inventory (TRI) reveals that releases and transfers of the 33/50 Program chemicals declined by 34 percent since the program began, falling from 1.474 billion pounds in 1988 to 973 million pounds in 1991. This reduction exceeds the 1992 goal by 15 million pounds, one year ahead of schedule. EPA's analysis of the facilities' projections indicate that the 1995 goal of a 50 percent reduction is attainable.

As of August 1993, 1172 companies have chosen to participate in the program, promising to eliminate nearly 355 million pounds of pollution by 1995. EPA sends all participants a Certificate of Appreciation and recognizes the companies when they achieve their reduction goals. More than 200 companies have

(Continued on page 10)

TRI Emissions 1988-1995



Agriculture

ACE Grant Recipients Cut Pesticide Use on Cranberries

Good news for cranberry lovers this holiday season: A three-year study jointly funded by EPA and USDA has been successful in substantially reducing the use of synthetic pesticides and fertilizers in cranberry bogs with no significant increases in pest damage or soil fertility problems. The study was awarded an ACE (Agriculture in Concert with the Environment) grant in 1988. Over the three years of the study, synthetic pesticide use was reduced 60 percent and fungicide use was reduced 28 percent relative to previous practices.

Because there has been little research done on cranberry production compared to more widely grown crops such as corn and soybeans, the project is significant to the cranberry industry. According to the study coordinator, Prof. Anne Averill of the University of Massachusetts, one of the goals of the study is to create demonstrably successful techniques for reducing synthetic inputs. Without a proven alternative, growers cannot afford to risk their crop by altering growing methods.

Old Practices Revived

Researchers achieved the pesticide reductions through the use of cultural practices and an integrated pest management strategy. A practice called "late water" was used to significantly reduce pesticide use. This technique, which was used widely in the past and abandoned with the advent of cheap chemicals, involves reflooding the bogs for one month in the spring. "The late water causes a tremendous decrease in the level of fruit rot and enhances the keeping quality of the fruit," said Prof. Averill. Other benefits include drops in insect pressure and reduced weed problems. Late water is used every third season and may cause a decreased yield in some bogs during that one year. The research team hopes to demonstrate that even when the yield does dip, the bogs rebound in the following year and that overall, the health of the



Workers harvest cranberries grown as part of an ACE-funded study to reduce the use of synthetic pesticides and fertilizers.

plants and quality of the fruit is enhanced by the late water. Another aspect of the research is the development of strains of cranberries which show a natural resistance to fruit rot, rather than relying on synthetics.

Water Issues Play Key Role

Because cranberries are grown in wetlands and rely on redirected surface water, water issues are very important. A primary focus of the study is to reduce movement of fertilizer out of the bog. The research has shown that substances such as composted chicken manure and fish fertilizer can be effective alternatives to synthetic inputs. Because these natural fertilizers leach less readily, less total nitrogen phosphorous is used and runoff problems are avoided. Researchers noted that the nitrogen levels in some bogs were lower at the outlet than the inlet, indicating that the bogs may filter incoming swamp or pond water.

Currently, cranberry production in Massachusetts, which accounts for approximately 42 percent of the world crop, typically involves nine applica-

tions of pesticides per season. This results in approximately 150 tons of insecticide and 175 tons of fungicide being applied to the regions 15,000 acres of bogs under cultivation. Over the three years of the project, the five test sites used by the researchers reduced by 66 percent the use of EDBC fungicides and chlorothalonil, which are toxic to aquatic organisms and implicated elsewhere in groundwater contamination. Instead, the researchers used more environmentally benign copper-based mineral fungicides. Broadcast herbicide use was reduced 46 percent and fertilizer nitrogen 52 percent.

The researchers noted that the study has provided critical data by demonstrating that pesticide inputs can be reduced enormously with no reduction in yield. However, the study also points to the need for long-term studies on key weed, disease and insect pests for which no non-pesticidal controls exist.

For further information about the cranberry research, contact Anne Averill at 413-545-1054. For information on the ACE program, contact Harry Wells at EPA at 202-260-4472.

Rules & Regs

EPA Proposes Regulations for Pulp and Paper Industry

EPA proposed regulations on November 1 which will reduce significantly air and water discharges of dioxin and other toxic pollutants from U.S. pulp and paper mills. This proposal is the first time EPA has taken a multi-media approach to protecting public health and the environment by regulating air and water emissions in the same regulation. The rule promotes installation of state-of-the-art pollution prevention technology to further reduce future risks.

The rule, which could affect nearly 350 pulp and paper mills throughout the country, would eliminate nearly all

dioxin discharges to surface waters, and cut toxic air emissions by about 70 percent. This proposal is the result of a process in which EPA worked with industry and the environmental community to develop the rule.

"This historic and precedent-setting rule serves as a guide for incorporating ecosystem protection and pollution prevention into the regulatory process," said EPA Administrator Carol M. Browner. "It protects the public by fighting both air pollution and water pollution at once," she added.

Bob Perciasepe, EPA Assistant Administrator for Water said, "This is a milestone for using pollution

prevention as the basis for setting pollution discharge standards."

In addition to virtually eliminating the measurable discharge of dioxin,

(Continued on page 4)

Prevention Plans Form Part of Storm Water Proposal

EPA announced on November 10 a proposal to require industrial facilities to prevent pollution caused by storm water run-off, a leading cause of water pollution in the U.S. EPA would require industries that discharge storm water run-off to plan and execute comprehensive pollution prevention measures and ongoing monitoring. The proposal would affect industries in 29 industrial sectors, such as primary metals, textile mills, and chemical and allied products.

Run-off is a problem because it frequently is contaminated with pollutants. The polluted water then is released directly into rivers and other surface waters, posing a threat to drinking water, aquatic life, and other uses of the waters.

"Our nation's best hope for protecting water resources is to prevent this type of pollution from occurring in the first place," said EPA Administrator Carol M. Browner. "EPA's aim is to move forward quickly to reduce industrial pollution from storm water run-off, which is a major threat to the nation's surface waters."

The most important feature of the

(Continued on page 10)

President Signs Order Promoting Recycling

President Clinton has signed an Executive Order promoting recycling which will reduce solid waste, build markets for recycled products, and encourage new technologies by requiring federal agencies to use recycled paper and other recycled products. All federal purchases of printing and writing paper must contain 20 percent post-consumer material by the end of 1994 and 30 percent post-consumer material by the end of 1998. In order to further reduce the burden on landfills, paper made from 50 percent recovered byproducts from the production of goods other than paper or textiles may

be purchased, if the waste otherwise would end up in a landfill. EPA also will identify other types of recycled and environmentally preferable products for the federal government to purchase.

Paper accounts for 40 percent of all solid waste and 77 percent of government office waste. A number of local and state governments already purchase paper that contains 20 percent post-consumer material. Each year, the federal government uses approximately 300,000 tons of printing and writing paper, approximately two percent of the market.

(Continued on page 10)

EPA and GSA Evaluate Cleaning Products

EPA and the General Services Administration (GSA) will set new guidelines for the use of environmentally sound cleaning products in federal buildings under a memorandum of understanding signed by the two agencies. EPA will develop criteria for evaluating the effects of cleaning products on health and environmental safety. GSA and other federal consumers will use the information along with data on product performance in making purchasing decisions.

GSA manages buildings and buys materials for the federal government and is responsible for over 7700 government-owned or leased buildings nationwide. EPA and GSA also will coordinate an effort to establish networks with other federal agencies, private organizations and industry groups to build support and to solicit feedback for future efforts to promote environmentally preferable products.

For more information, contact Mary Ryan at EPA at 202-260-3898.

To be added to our mailing list, please write:
Pollution Prevention News
U.S. EPA
401 M Street SW (MC 7409)
Washington, DC 20460

Editorial Staff:
Polly Hunter, *Editor*
Gilah Langner
Joshua Katz

FOCUS ON ENERGY: ACID RAIN

Helping Utilities Profit from Energy Efficiency and Renewables

by Jennifer Selber

On November 17, 1993, representatives from utilities, public utility commissions, and the press gathered to hear EPA announce the first utilities to qualify for bonus sulfur dioxide (SO₂) emission allowances for their use of energy efficiency or renewable energy. Rewarding utilities for using efficiency and renewable energy is the goal of an innovative provision of the Acid Rain Program called the Conservation and Renewable Energy Reserve.

The Reserve is a pool of 300,000 allowances set aside to award to utilities that have jump-started pollution prevention efforts by reducing emissions before Clean Air Act compliance deadlines begin. EPA began accepting applications for the Reserve on July 1, 1993, and will award the 300,000 allowances on a first come, first served basis.

Reserve allowances can be used for compliance, or sold or banked for future use. The value of these allowances will better position efficiency and renewable energy as cost effective compliance strategies or energy resources.

The benefits of the Reserve allowances are just the tip of the iceberg for efficiency and renewables. The greatest benefit comes from the built-in incentive to reduce emissions in the Acid Rain Program. For each ton of SO₂ avoided through efficiency and renewable energy, one less allowance is used. Tradeable SO₂ emission allowances have put a dollar value on pollution prevention. This allows compliance planners to assess the financial benefit of reducing pollution through efficiency and renewables.

Before a utility can earn bonus allowances, the company's public utility commission must have policies in place that level the playing field between conventional electricity generation and pollution prevention strategies. By making this a requirement for the Reserve, Congress recognized that traditional ratemaking and planning policies

have been a barrier to aggressive utility energy efficiency and renewable energy programs. The Department of Energy (DOE) was charged by Congress to certify to EPA that ratemaking policies are in place that eliminate this barrier for energy efficiency programs. Other requirements to earn these special allowances include:

- Energy efficiency measures or renewable generation must be installed between January 1, 1992 and the date the utility is affected by the Acid Rain Program.
- The utility must own all or part of an electric unit affected by the Acid Rain Program.

The awards conference was held in New York City, at the National Association of Regulator Utility Commissioners (NARUC) convention. EPA and DOE jointly presented the Reserve allowances. Among those receiving awards were the City of Austin Electric Utility (18 allowances), ESI Energy Inc. (109), Massachusetts Electric (97), Granite State Electric (6), Portland General Electric (57), and Puget Sound Power and Light (245). All told, 532

SO₂ Allowances

The 1990 Clean Air Act created a market-based trading system in sulfur dioxide (SO₂) allowances. Each allowance gives its holder the right to emit one ton of SO₂ per year. EPA allocates the allowances yearly to affected sources (mainly existing electric power plants) based on specified emission rates and historic fuel use. Utilities must reduce their SO₂ emissions to the level of allowances they hold, or obtain additional allowances to cover their emissions. If utilities emit less than the allowance they have, they may sell or trade the allowances, or bank them for future use.

allowances were distributed to the qualified applicants. Approximately twenty other utilities are in the process of applying for Reserve allowances. EPA expects to award the next group of allowances early next year.

For more information on the Reserve program, contact Jennifer Selber, 202-233-9177 or the Acid Rain Hotline at 202-233-9620.

Regulations Proposed for Pulp and Paper

(Continued from page 3)

the water standards would reduce discharges of other toxic pollutants by 3,000 metric tons, and conventional pollutants by 200,000 metric tons annually. Dioxin levels in sludge may be reduced, which could enable industry to save money by eliminating the need for EPA to list the sludge as hazardous material.

The air standards will cut toxic emissions by 120,000 metric tons annually. Emissions of chloroform, a probable human carcinogen, would be reduced by approximately 80 percent. Air emissions of volatile organic chemicals (VOCs), the prime ingredient in ground-level ozone, or smog,

would be reduced by 715,000 metric tons annually. Also, the proposal would reduce total reduced sulfur (TRS) by 295,000 metric tons annually.

The estimated costs of compliance for industry are \$4 billion in capital expenditures, and \$600 million in annualized expenditures. EPA seeks broad comment on the proposal and is especially interested in comments on new pollution control technology that might further reduce toxic discharges.

For further technical information on the proposed water standard, contact Debra Nicoll at EPA at 202-260-5386; for information on the air standard, contact Penny Lassiter at EPA at 919-541-5396.

FOCUS ON ENERGY: NEW TECHNOLOGY

EPA Program Seeks to Reduce Energy Use in Commercial Buildings

EPA has created the Energy Star Buildings Program to promote profitable investments in energy efficient equipment and operations in commercial buildings. Increasing the efficiency of buildings not only can save money for the owners, but helps the environment by reducing direct and indirect combustion-related pollution associated with energy use.

The voluntary program will complement EPA's successful Green Lights Program. "One of the fundamental aspects of the Green Lights and Energy Star programs is getting a top-down commitment within an organization to energy efficiency, and evaluating energy efficiency on a level playing field with other capital improvements," said Chris O'Brien, Program Manager for the Energy Star Buildings Program.

Staging the Process

The program recommends that participants upgrade their buildings through a staged implementation program. The stages are:

Stage 1: Green Lights.

Stage 2: Building Tune-Up.

Stage 3: Heating and Cooling Load Reductions.

Stage 4: Improved Fans and Air Handling Systems.

Stage 5: Improved Heating and Cooling Plant.

By focusing on load reduction in Stages 1 through 3, the size and cost of the equipment associated with Stages 4 and 5 may be significantly reduced. This staged approach offers a framework for comprehensive efficiency upgrades in a variety of commercial buildings. However, the strategy is deliberately flexible to allow for cases where it makes sense to design and implement all stages at once.

EPA Resources

EPA will publicize the participation and energy savings realized by organizations through the program. In addition, EPA will provide technical resources to facilitate the planning and implementation of building upgrades. These resources will include:

- Building Upgrade Manual offering a step-by-step guide to comprehensive commercial building upgrade.
- Software to calculate savings from upgrade systems.
- Database of financing programs pertaining to building efficiency upgrades.
- Case studies documenting savings for specific technologies.
- Generic specifications for specific technologies.
- Information and guidance on indoor air quality issues.
- Guidance on using the CFC phase-out as an opportunity to increase building efficiency and reduce the cost of transition to alternative refrigerants.

EPA will work with a group of 20 to 30 buildings over the next two years to demonstrate that the Energy Star Program can maximize energy savings at a profit. These demonstration projects also will give EPA the opportunity to field test and refine the technical support materials.

To participate in the Energy Star Buildings Program, organizations must first join the EPA Green Lights Program, committing to identify and implement 90% of the profitable lighting upgrades in their commercial and industrial space within five years. Green Lights partners may then join the Energy Star Buildings Program, committing to survey all owned U.S. commercial and industrial space to identify profitable efficiency upgrades, and to complete 90 percent of all profitable upgrades within seven years. An improvement is considered profitable if it offers a rate of return greater than prime plus six percent.

For more information on the Energy Star Buildings Program, contact Chris O'Brien at 202-233-9146 (fax: 202-233-9578).

Commercial buildings are directly or indirectly responsible for

12% of NO₂
22% of SO₂
3% of CFCs
16% of CO₂*



Commercial buildings consume 15 percent of all U.S. energy.

* Percentages of total annual U.S. emissions

FOCUS ON ENERGY: CONSERVATION FORUM

Secretary O'Leary Addresses Energy Conservation Forum

Energy Secretary Hazel O'Leary stressed the economic and environmental benefits of energy efficiency at the Fourth Annual Energy Conservation Forum held in Washington, D.C. on October 21, 1993. "Sophisticated users have already seen that the bottom line is positively impacted by energy efficiency," said Secretary O'Leary at the conference sponsored by the Johnson Controls Company and the United States Energy Association. Over 250 people from government, industry, public interest groups and academia attended the conference which addressed domestic and international perspectives of energy efficiency.

Secretary O'Leary said that the Clinton administration is taking energy efficiency and environmental issues more seriously than past administrations. "This is an administration focused on issues involving the environment," said O'Leary. "We've looked to energy and the environment in a way that no other administration has." In order to have the largest impact, Administration efforts focus on large industrial and

commercial users. Secretary O'Leary noted that the best role of the federal government is to set priorities and allow business planners to respond to market economics. "We can meet our goals for the twenty-first century by letting industry do what it has to do (with government) quantifying the changes," said Secretary O'Leary.

American use of efficient technology and techniques has been spurred by tougher environmental standards and rising energy costs. However, Secretary O'Leary stressed that the potential for the economic benefits of energy efficiency technology goes beyond the energy savings and include jobs created by a growing global market for such American technology. She noted that "there are energy markets south of the border for energy efficiency (and) retrofiting. For applications in generation, the market is even broader." Secretary O'Leary stated that potential new markets include not only Mexico, but all of South America, as well as the states of the former Soviet Union. "If we don't get those markets, someone else will," she said.

John Hoffman, Director of the

Global Climate Change Division at EPA participated in the Forum and spoke of the importance of the new generation of EPA efforts such as the Green Lights, Energy Star and Golden Carrot programs. EPA has achieved greater results than with past efforts by becoming more customer oriented. "We spent a lot of time trying to understand the barriers people have (to participating in efficiency programs)," said Hoffman. "Our programs are all sales programs, we are not preaching."

Hoffman also stressed the potential that energy efficiency programs have. "The benefits of better and more innovative technology are going to be much greater than ever before," he said.

For more information about the Fourth Annual Energy Conservation Forum, contact John Bernaden at 414-274-4546.

Administration Addresses Global Warming

(Continued from page 1)

technologies and services that allow for economic growth without harming the environment. These investments will not only yield energy and cost savings, they also will expand global markets for American manufacturers of energy-efficient technologies.

The plan should save the government an estimated \$2.7 billion between 1994 and 2000. It will give private developers an opportunity to invest in efficiency upgrades at federal hydroelectric dams and market the additional power in exchange for lease payments. A reduction in transportation-related pollution will be created by allowing workers to take the cash value of

employer-paid parking as increased income instead—an incentive to take public transportation or car-pool.

A White House-led task force will prepare a long-term strategy to develop additional measures that continue the trend of reduced emissions beyond the year 2000. The task force will develop within one year a strategy to reduce significantly emissions from personal vehicles.

Greenhouse gases include carbon dioxide, methane, nitrous oxide, and other gases, all of which threaten to change the global climate system, raise sea levels and inundate coastal areas, destabilize agricultural production, and inflict irreversible damage to ecosystems.

EPA Awards \$4.5 Million in State Grants

EPA's Office of Pollution Prevention and Toxics, in conjunction with the ten EPA Regional Offices, has awarded \$4.5 million to 52 state and tribal organizations under EPA's Pollution Prevention Incentives for States grant program. These grants and cooperative agreements support state and tribal programs that address the reduction or elimination of pollution in air, land and water. Since 1989, over \$25 million has been awarded to support state and tribal efforts. The projects may last up to three years and recipients of the grants are required to match at least 50 percent of the federal funds through dollars, in-kind contributions, or third-party contributions.

For more information on the PPIS grants, contact Lena Hann at 202-260-2237.

FOCUS ON ENERGY: SOLAR LIVING

National Tour of Independent Homes

Owners of homes that use renewable energy opened their doors to their neighbors on October 16, 1993, as part of the National Tour of Independent Homes. Real Goods Trading Corporation of Ukiah, California sponsored the tour, the first of its kind on a national scale, in order to educate the public about technologies available to harness energy from the sun, wind and water. More than 150 homes across the country were open to visitors. The homes use both active and passive energy design features; some homes use a mix of renewable and non-renewable energy, while others are completely "off the grid," that is, not connected to power lines.

Less than a century ago, households generated and managed their own power needs. Yet today's energy efficient and energy independent homes have little in common with their ancestors. "People visiting an energy independent home often think they will be stepping back into the nineteenth century. Instead, they step forward into the twenty-first," says Michael Potts, author of *The Indepen-*



Stephen and Paula Alexander of Centenary, VA moved into their solar powered home in February 1993.

dent Home: Living Well With Power From the Sun, Wind and Water (Chelsea Green Publishing). Potts traveled over 20,000 miles and interviewed people living in independent homes in order

to write the book. He estimates that the number of independently powered homes in this country has increased from fewer than 1000 in the mid-seventies to more than 100,000 today.

Stephen and Paula Alexander of Centenary, Virginia were two of the participating homeowners. They allowed visitors to tour their 2500 square foot home and view its many energy saving and energy efficient features. The house, finished in February

1993, has 32 photovoltaic panels for electricity and 5 solar thermal panels for hot water for household use and heating. Without the solar panels on the roof, the Alexanders' home, with its dishwasher, washer and dryer, and central heating, would look like any other home. In fact, when Mr. Alexander designed the house, he assumed that it would be connected to the local utility. It wasn't until the Alexanders got the estimate for hooking up their rural home that they began to look for other options.

The Alexanders, who estimate an 8 to 10 year payback for their investment, have had no problems adjusting to the new technology. In addition to the lack of utility bills the Alexanders have an added benefit—when a late winter storm last year caused widespread power outages, the Alexanders didn't know that power lines were down in their area until someone told them.

Real Goods sells renewable energy products and has helped to equip more than 20,000 homes. For more information about the tour or renewable energy, contact Real Goods at 1-800-762-7325.



Solar power provides all the electricity for the Scottsville, VA home of Kate Rander and Bill Sams.

Case Studies

University-Based Assessments Program: Big Gains from Small Operations

The January-February issue of PPN profiled the progress being made under four EPA technology evaluation and assessment programs. One of these programs, The University-Based Assessments Program, is unique in that it specifically targets small and medium-sized manufacturers that do not have in-house expertise in waste minimization. The program is implemented by three waste minimization assessment centers (WMACs) established by the Industrial Technology and Energy Management (ITEM) division of the University City Science Center (UCSC) (under agreement with the Risk Reduction Engineering Laboratory of the U.S. Environmental Protection Agency). The goal of WMACs pilot effort is to conduct waste minimization opportunity assessments at 100 facilities.

Who Can Benefit

The WMACs provide their services free-of-cost to qualifying facilities. To qualify, a facility must have an SIC Code between 20 and 39; have gross annual sales of not more than \$50 million; have no more than 500 employees; and lack in-house expertise in waste minimization. The benefits of the WMAC assessments can include reductions in the amount of waste generated, reductions in waste treatment and disposal costs, educational experience for participating students, and a cleaner environment without associated regulations or high costs.

What is Involved

A company selected for assessment will receive several site visits. The WMAC staff characterize the sources of hazardous waste, the treatment and disposal methods used, and their associated costs. The staff then identify and analyze ways to reduce or eliminate the waste. The staff recommend specific measures to achieve the waste reduction goal and provide supporting technical and

economic documentation. The WMAC prepares a confidential report for each client detailing anticipated cost savings, estimated implementation costs, and payback times. The WMAC later conducts follow-up interviews to determine actual costs and benefits of the recommendations, and prepares a research brief to transfer the technical information to others. Full reports of their research are available from the University City Science Center, Philadelphia, PA 19104.

An example of a university-based assessment follows.

Case Study: Dairy Plant

A dairy plant produces 23.4 million gallons of milk and milk products and fruit juice drinks, as well as high density polyethylene jugs (from pellets). Raw milk is received and processed into cream, various mixtures of milk ranging from whole to skim, buttermilk, chocolate milk, and ice cream. Fruit drinks are produced by mixing filtered city water with liquid juice concentrate, preservative, and sucrose or fructose. Plastic jugs are produced by melting HDPE pellets and extruding them in molds for blow-molding gallon and half-gallon jugs.

Waste Generation and Management

The wastes generated by the dairy and the methods and costs for managing them are as follows:

- 394,000 gallons of uncontained spills and leaks of contaminated and uncontaminated milk is collected annually in the waste pit and sewer.
- 37,299,660 gallons of wastewater from cleaning the containers and processing machinery, from cleaning the plant, and from pasteurization and cooling processes are sewer annually at a cost of \$194,190.
- 6,300 gallons of fruit juice spills are sewer annually.

Waste Minimization Opportunities

Since the dairy was already giving away reusable products for local agricultural uses and diluting milk-contaminated waste streams with other wastewaters prior to sewer, the research staff focussed on waste-water minimization opportunities. Recommendations included:

- Conducting an employee awareness program about wastewater reduction (e.g., proper placement of drip pans);
- Using high-pressure and automatic shut-off hose nozzles to minimize cleanup water;
- Installing an activated sludge treatment system to treat the pit-collected wastewater before it is sewer to avoid disposal surcharges.

It was estimated that these recommendations would reduce the uncontained milk waste by 38% and the wastewater by 90%, for an annual savings of \$320,810. The total implementation cost of \$661,200 would be paid for in 2.1 years by the associated savings.

The EPA Project Officer for this study was Emma Lou George. The project summary entitled: "Waste Minimization Assessment for a Dairy", was prepared by the University of Tennessee Waste Minimization Assessment Center in March, 1992.

In the States

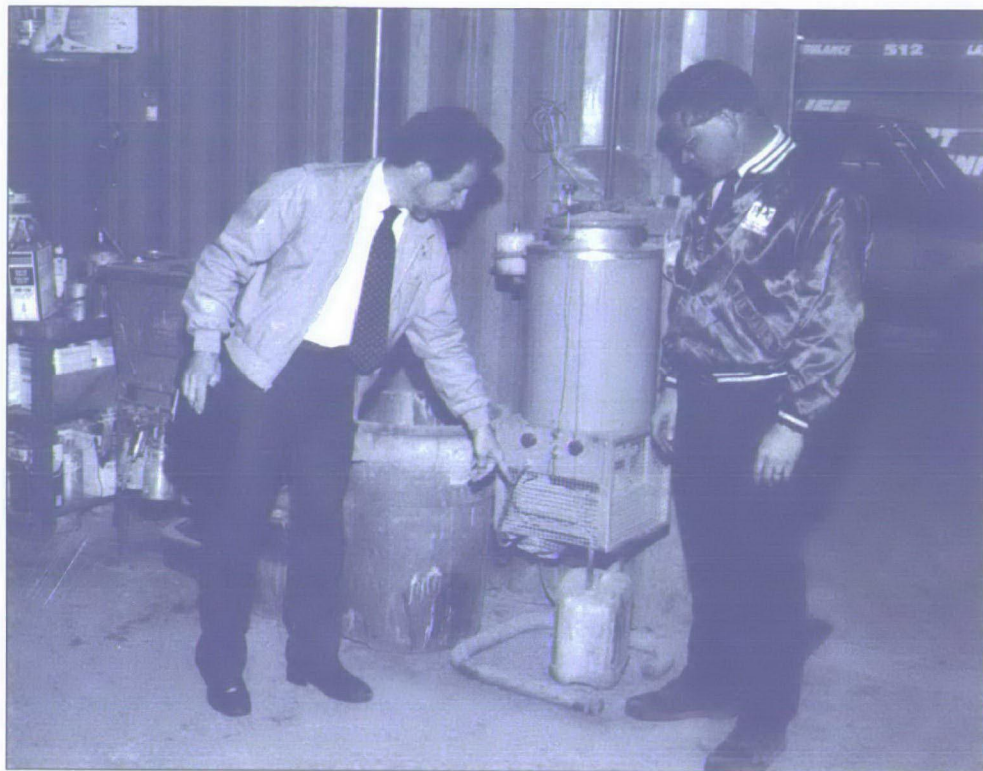
Small Dischargers Catch Erie County's Attention

Erie County, New York has demonstrated that a pollution prevention program directed at smaller businesses can yield large results. Although small businesses discharge pollutants, their small volume of waste means that they are not often the target of source reduction efforts. In order to reduce the amount of waste generated at Erie County's more than 4000 small and medium sized dischargers, the county in 1990 established the Erie County Office of Pollution Prevention (ECOPP), to assist industry, public institutions and local governments in finding ways of doing business that are less hazardous and produce less waste.

ECOPP, which is managed by the Erie County Department of Environment and Planning through a \$300,000 grant from EPA, brings pollution prevention and regulatory information to waste generators overlooked by state and federal efforts. Although many of these small generators do not require permits, taken together they contribute significantly to the overall pollution problem.

ECOPP is attractive to small businesses because it is not an enforcement agency. Its confidential and free services include: on-site reviews of operating processes and equipment; site specific recommendations for implementing pollution prevention concepts; industry and trade group workshops and presentations; and publication of quarterly newsletters for specific industries.

ECOPP has an advantage over state and federal programs because it is part of local government which is closer to the community and has established relationships with local industry. By educating businesses about their regulatory responsibilities and the benefits and techniques of pollution prevention, ECOPP facilitates compliance with state and federal requirements, improving worker and community safety and



Rick Rutkowski (left) of ECOPP reviews the operation of a solvent recycler at an Erie County auto dealership with employee Al Killian.

helping local businesses succeed economically.

ECOPP has demonstrated that a good outreach program and positive incentives can yield strong results and that small companies are as receptive to pollution prevention as large corporations. "We found that once we provide small businesses with pollution prevention information, there isn't a need for any new requirements or regulations," said Thomas Hersey, Jr., ECOPP Coordinator. Approximately 80 percent of the 150 companies which ECOPP has assisted have implemented at least one of the pollution prevention techniques recommended by the inspectors. Nearly 70 percent of these companies perceived a reduction in the amount of waste generated, and 43 percent realized a reduction in waste management costs. ECOPP has demonstrated to many businesses in Erie County that pollution prevention is not only a waste management

technique, but may eliminate waste altogether.

In order to increase the effectiveness of its pollution prevention efforts in a time of shrinking budgets, ECOPP now plans to "look at other local government agencies that deal with local industries and train them to provide pollution prevention information," said Hersey. Under this approach, local government employees such as economic development personnel and POTW inspectors will be able to offer pollution prevention assistance and make pollution prevention part of daily business practices. "We have found, as we thought when we started, that pollution prevention makes good financial sense," said Hersey. "Now we need to get more people to recognize the value of pollution prevention programs."

For more information regarding the Erie County Pollution Prevention Program, contact Tom Hersey at 716-858-7674.

TRI Reductions Ahead of Schedule

(Continued from page 1)

already achieved all or some of their 33/50 Program reduction goals. EPA also is planning a national 33/50 Program Conference in 1994 to showcase the accomplishments of the Program's company, state and community partners.

Twenty-six states had established toxics use reduction and pollution prevention programs prior to the 33/50 Program, and these contributed to its design. Others have used the 33/50 Program as a model. Some industry associations and many private companies include a 33/50 Program within their own reduction programs. EPA views the 33/50 Program as an umbrella under which the federal government, states, industry and

communities work in partnership to achieve common goals. The success of the 33/50 Program reflects the efforts of all these partners.

The 33/50 Program is being evaluated by Hampshire Research Institute under a grant from EPA. Preliminary results will be available in the Spring of 1994.

Tell Us How You Did It!

If your organization met its 33/50 goal, drop us a line and tell us how you did it. Send your success stories to:

U.S. EPA/Pollution Prevention News
401 M Street, SW (MC 7409)
Washington, DC 20460

EPA Plan Reduces Pollution from Run-Off

(Continued from page 3)

multi-sector permit is a pollution prevention plan, which would require operators of facilities to develop and implement a site-specific plan to control storm water discharges. The pollution prevention plans will identify pollutant sources, then select and implement site-specific, best management practices to prevent or minimize storm water pollution.

The plans will provide for regular inspections and site compliance evaluations and must include, among other measures: proper upkeep of areas exposed to storm water; preventive maintenance of storm water controls; spill prevention and response procedures; and pollution

prevention training for employees. Facility operators also would have to stabilize areas vulnerable to erosion and use traditional storm water management controls (e.g. oil/water separators, retention ponds) where appropriate.

The general permit, when final, would become a National Pollutant Discharge Elimination System (NPDES) permit under the Clean Water Act. EPA has proposed this permit for the states and territories that do not have authorized state NPDES programs. EPA also has issued the permit to NPDES authorized states to use as a model for their permitting.

For information, contact the Stormwater Hotline at 703-821-4823.

Government to Purchase Recycled Products

(Continued from page 3)

The Executive Order will create a strong market for the paper being collected by more than 5,500 community recycling programs and will spur investment in recycling technology and create jobs in the recycling industry. To stimulate the market immediately, federal agencies will begin seeking bids for recycled paper now, in advance of the actual purchasing require-

ments. The General Services Administration will revise paper specifications that currently prevent the purchase of paper made through the most environmentally sound processes.

The Order also requires federal agencies to replace motor oil with re-refined oil and to replace virgin tires with re-tread tires. All federal agencies must revise their specifications and standards so that recovered materials

Two New Reports On Environmental Labeling from EPA



The Use of Life Cycle Assessment in Environmental Labeling (EPA/742-R-

93-003, Sept. 93) addresses the extent to which life cycle assessment (LCA) methodologies are being used in environmental labeling programs worldwide. The report also describes the alternative methodologies that are being used or considered for environmental labeling. The key methodologies outlined in the report are: LCA, streamlined LCA, single use certification, product environmental information labeling (or report cards), and expert system evaluations.



Status Report on the Use of Environmental Labels

Worldwide (EPA/742-R-93-001, Sept. 93) examines public policy issues relating to environmental labeling and the status of environmental certification programs (ECPs) around the world. The report gives an overview of the status of environmental marketing in the U.S., summarizes the existing ECPs in the U.S. and abroad, and discusses the existing research relevant to projecting the effectiveness of U.S.-based environmental labeling initiatives. In addition, the report provides details for each of the labeling programs included in the report and includes a selected bibliography covering a number of labeling initiatives and life cycle analysis issues.

Copies of both reports are available from the Pollution Prevention Information Clearinghouse, 202-260-1023.

can be used to produce the products they purchase. The Order also streamlines the process by which EPA issues standards for recycled products and designates criteria for the purchase of environmentally preferable products.

From Our Readers

Using Incentives to Meet WR Goals

Steve Hillenbrand
Tennessee Valley Authority

An important tool to aid in reaching waste reduction (WR) goals is incentives. Some innovative incentives that are in use include:

- *Recognize WR ideas.* Company hats, WR logo items (hats, coffee cups, etc.), gift certificates, money (always popular), recognition at company or departmental functions are proven ways to inspire employees (and managers) to contribute WR ideas. To be successful, each idea must be taken seriously and feedback given to the contributor.
- *Share WR savings with employees.* Award of 30% of the verifiable first year's savings for a WR idea that saves the company \$1,000,000 may seem high. But it is \$700,000 that the company would not have had the first year; future year's savings will still accrue, and other employees will be highly motivated to participate. A variant of this incentive is to promise to share with all of the employees a percent of the first year's savings in form of a bonus from all submitted WR ideas.
- *Celebrate with a free lunch for meeting WR goals.* Provide a free lunch for employees when a monthly goal is met. This may be done on a facility or departmental level. It is usually beneficial to post the current WR results in a conspicuous place for employees to keep track of their progress. A simple, easily measured goal works best, such as a gradual reduction of the waste generated in relation to total incoming raw materials.
- *Challenge Management with WR.* Challenge managers to find three times their salary each year in WR savings. This causes managers to take WR seriously. In most departments, this is a readily attainable

goal. Managers might trade WR savings (allowances) from their department to managers in other departments that find it more difficult to meet their goal. This can also enhance cooperation between departments.

(The author of this article would like to express thanks for the ideas in this article to the participants of the First Annual South-eastern Waste Reduction Retirees Conference)

Empowering Grassroots Efforts

Beverly Mosely, 33/50 Coordinator
EPA Region IV, Atlanta, Georgia

Administrator Carol Browner has announced a policy to facilitate a cultural change — making pollution prevention the first environmental choice throughout EPA.

I believe that within EPA, the Emergency Planning and Community Right-to-Know Act (EPCRA) program is a key vehicle to begin accomplishing this cultural change. The program operates with true grass-roots and volunteer efforts. The most important aspect of EPCRA is that it requires community involvement in the decision-making process. Lee Thomas, former EPA Administrator, described the intent of EPCRA back in 1988: "The law establishes an ongoing forum at the local level for discussion and a focus for action — the Local Emergency Planning Committee (LEPC)."

The role of the LEPC is even more important today. With the number of hazardous materials accidents and releases growing, the LEPC structure needs funds, equipment, training and resources more than ever.

I propose that pollution prevention (P2) can be effectively implemented through environmental education (E2) at the LEPC grass-roots level. I envision locals teaching locals. Technology exchange can be accomplished at this level with the cooperation of citizens, industry, government,

and academia. EPA, through the Intergovernmental Personnel Agreements program and detailing staff can help assist the LEPCs on environmental education.

For example, the Water Sourcebook project, developed by the Alabama Department of Environmental Management, EPA, and the Tennessee Valley Authority will soon be available from Region IV. The Water Sourcebook is designed to begin in kindergarten and educate students through the twelfth grade about key water management concepts and issues. A similar Air Sourcebook is under development.

I envision top EPA management becoming actively involved in the Governors' Association Meetings encouraging support for the State Emergency Response Commissions (SERCs) and the Local Emergency Response Committees. The National Association of SARA Title III Program officers, an association of individuals who have state and tribal level program responsibilities in emergency planning and community right-to-know issues, would serve as another EPA partner for the promotion of P2 and E2.

The newly established Richmond County, Georgia LEPC is working with the Region IV EPCRA staff to initiate Administrator Browner's policies. Our goal is to work with the SERCs and LEPCs to provide them with information and support, and at the same time, allow the SERCs and LEPCs to take the lead on promoting environmental education, pollution prevention, and the 33/50 program to their communities.

The EPCRA program at the state level is working because of dedicated people willing to take this mission on a voluntary basis. Empowering the SERCs and LEPCs will bring the community into a valuable position to work with EPA, industry, and academia. Communications and outreach should be at the top of the EPA agenda in all programs. I believe that keeping communities well informed of EPA programs is the best "source reduction" tool EPA has.

Calendar

Title	Sponsor	Date/Location	Contact
Water: Our Next Crisis	Academy of Natural Sciences	Jan. 12-13, 1994 Philadelphia, PA	Rob Goldberg 215-299-1108
Waste Tech '94	National Solid Waste Management Association	Jan. 13-14, 1994 Charleston, SC	202-659-4613
Pollution Prevention Conference for the Surface Finishing Industry	American Electroplaters and Surface Finishers Society, EPA	Jan. 24-27, 1994 Kissimmee, FL	Anne Gaither 407-281-6441
Green Building Conference	Nat'l Inst. of Standards and Tech. and U.S. Green Building Council	Feb. 16-17, 1994 Gaithersburg, MD	Lori Philips 301-948-2067
Environmental Management and Technology Conf. & Exhibition	Hazmat World Magazine	Feb. 16-18: Orlando, FL April 26-28: Long Beach, CA	708-469-3373
Fifth Annual International Recycling Symposium	Solid Waste Association of North America	Feb. 22-24 Baltimore, MD	301-585-2898
17th Annual Landfill Gas Symposium	Solid Waste Association of North America	March 22-24 Long Beach, CA	301-585-2898
Global Climate Change: Science, Policy and Mitigation Strategies	Air & Waste Management Association	April 5-8 Phoenix, AZ	412-232-3444
5th Annual March for Parks	National Parks and Conservation Association	April 22-24 Organized locally	1-800-NAT-PARK (ext. 222)
IEEE International Symposium on Electronics and the Environment	IEEE	May 2-4 San Francisco, CA	908-562-3878
First International Congress on Liquid Waste Recycling	National Oil Recyclers Association	May 23-27 San Francisco, CA	216-791-7316
SUR/FIN Surface Finishing Industry Conference	American Electroplaters and Surface Finishers Society	June 20-23 Indianapolis, IN	407-281-6441

Moving? Please enclose mailing label!

United States Environmental
Protection Agency (MC7409)
Washington, DC 20460

Official Business
Penalty for Private Use \$300

Forwarding & Return Postage Guaranteed
Address Correction Requested