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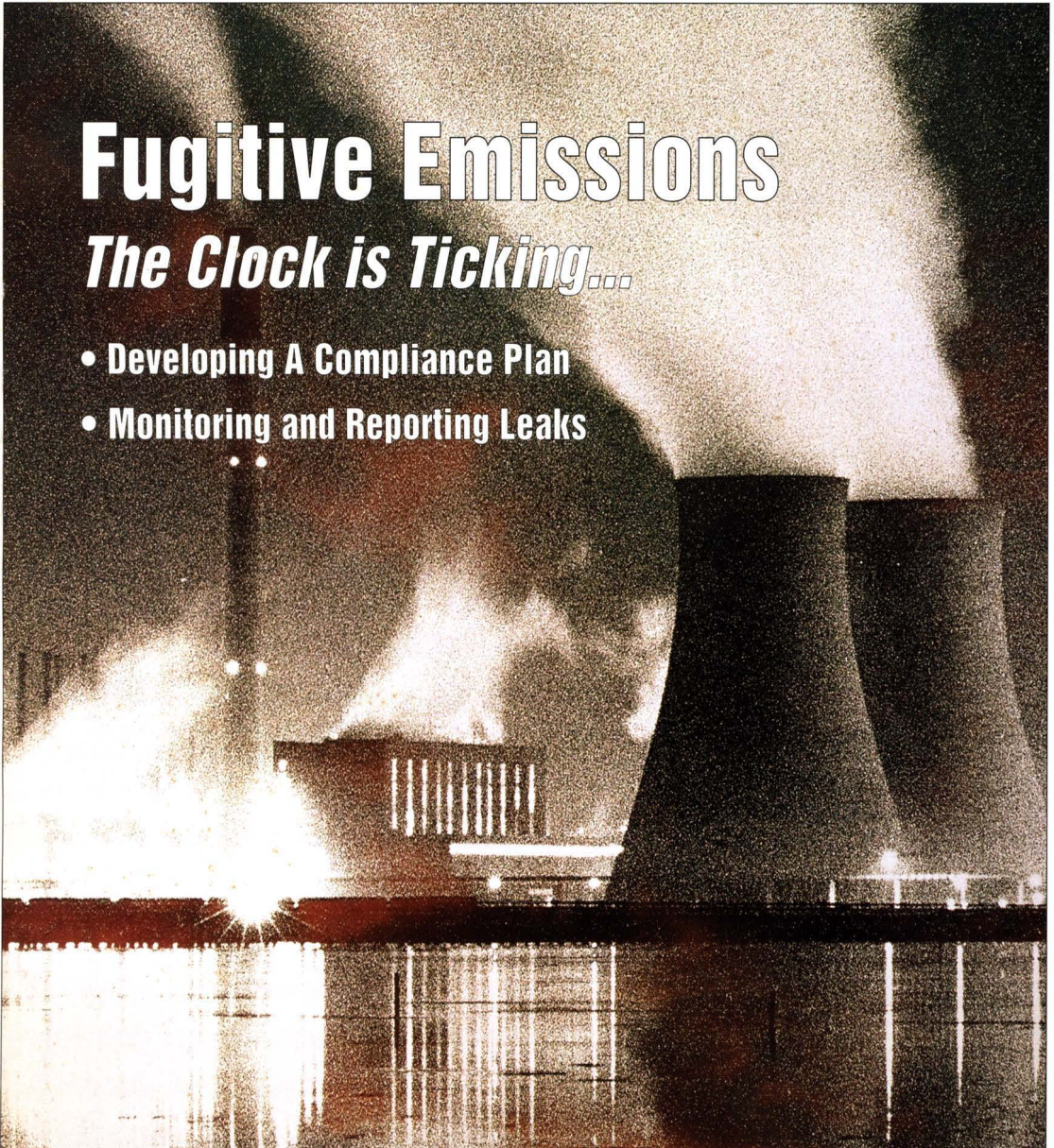
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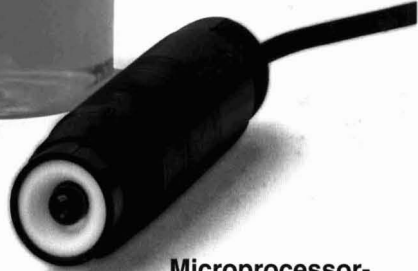
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 - Z Other (please specify) _____

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 - H 1500-2499
 - I 2500 and up

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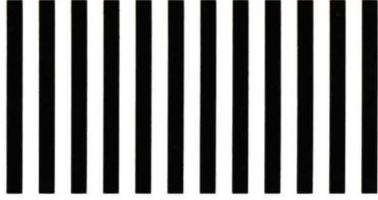
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 - B Environment Today
 - C Hazmat World
 - D Pollution Equipment News
 - E The National Environmental Journal
 - F Water Environment & Technology
 - G None of the above _____ (please specify)



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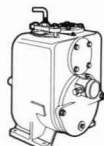
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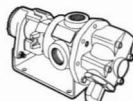
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Cover:

Petrochemical facilities are the first to face fugitive emissions deadlines under the Clean Air Act Amendments. Their compliance strategies serve as a model for other industries. Page 30.
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Reformers In The Spotlight

Once again, regulatory reform is the watchword on Capitol Hill. So what else is new.

This time, however, it appears that consensus may be near on several issues that could profoundly change the regulatory landscape. Republican initiatives in the areas of risk assessment and unfunded mandates, which would have their biggest impact in the environmental arena, are steadily picking up steam. If a compromise can be struck between zealous House backers and their more cautious Senate counterparts, both bills could be headed for President Clinton's desk in short order.

EPA, which had been paying lip service to providing enhanced risk assessment, is now leading the Clinton Administration's opposition to the risk bill. Administrator Browner said the House bill would create a "procedural maze" that could jeopardize many existing and future environmental rules. "Requiring it for every single action is neither fair, effective nor affordable," Browner told a House hearing.

Industry groups feel otherwise. Eager to see their long-held calls for better science behind environmental regulations put into action, they are nearly unanimous in their support of better risk assessment. Leaders of three of the heaviest-regulated industry sectors – chemical manufacturing, petroleum processing and pulp and paper making – make complementary arguments in support of beefed-up risk assessment in our special section on regulatory reform (page 22).

"If we want our regulations to achieve the most benefit to society, we must improve the technical quality of risk assessments performed by government agencies," declares Fred Webber, president of the Chemical Manufacturers Association.

With the emotion that typically accompanies environmental issues as a backdrop, it appears that Webber's viewpoint has gained the high ground in the debate.

HON Realities

This issue also features two related articles on complying with the Hazardous Organic National Emission Standards for Hazardous Air Pollutants, one of the boldest – and costliest – components of the 1990 Clean Air Act amendments. The HON rule, which tightens the lid on fugitive emissions from process vents, wastewater processing, transfer operations and process equipment, is among the top regulatory headaches facing chemical manufacturers as they approach an April, 1997 deadline.

As ENSR's David Seifert points out, 170 other facility types will face similar requirements before the year 2000. Those industries may want to study how the chemical makers broach the compliance challenge before they follow suit, he notes.

Seifert's article addresses Subpart G of the rule, which focuses on vents, storage vessels and the like (page 30). A companion article written by consultant John Bacon looks at Subpart H, which calls for developing a system for monitoring and reporting fugitive emissions from process equipment, valves, pumps and pipes (page 36). Since there can be as many as 20,000 points to monitor at a given facility, good preparation is key.

And don't miss our Hazardous Materials Software Guide (page 50), which lists new software tools for tracking, managing and reporting hazardous materials at a site. Our four-page guide will help you zero in on the software that best suits your needs.



Tom Barron

Environmental PROTECTION

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LETTERS

To The Editor:

In recent years, the city of Indianapolis has been in the national spotlight for its bold and creative public-private partnerships that spawned an outstanding spirit of volunteerism. Because of environmental contamination, there are a number of privately owned properties in the city that have been abandoned or ignored by their owners. These are important not only because they pose a potential health risk, but also because they lower property values, are non-productive and stifle development. Since many of these properties are not ranked by EPA or the Indiana Department of Environmental Management (IDEM) as posing high potential risks, these agencies have not implemented clean-up activities.

However, Indianapolis Mayor Stephen Goldsmith has assembled a team of interested parties to address this challenge. The team, which includes several city agencies as well as private parties, will evaluate the properties, locate past or present owners of the sites to help finance remediation and begin cleaning up the properties. If there are

insufficient resources available to perform cleanup, the city would consider guaranteeing any loans as an incentive to new owners/developers to purchase the property and to local lenders to make loans.

In November 1993, an article in an Indianapolis newspaper reported that a local police officer had observed children using an abandoned, environmentally contaminated scrapyard as a playground and shortcut to school. The property, which is on the city's list of contaminated/abandoned private properties, had been involved in a bankruptcy procedure and had been through at least two property tax sales with no bidders. Previous environmental studies at the site indicated such contaminants as asbestos, PCBs, lead, cadmium, solvents and waste oils.

After the president of Specialty Systems in Indianapolis offered his company's asbestos abatement services for free, other companies joined in the volunteer effort. Several asbestos testing, engineering and consulting, reclamation and remediation and other firms became involved, and a site-specific plan was developed to clean up the site. Cleanup help also was offered by a local

neighborhood association. With the volunteer help, it is anticipated that the site will be fully remediated in a shorter period of time and with fewer complications than if IDEM or EPA were to undertake the project.

One result of this team effort by environmental contractors and consultants has been movement toward establishing a permanent group of such firms willing to donate pro bono services in the Indianapolis area. The Indiana Environmental Institute is currently investigating the possibility of forming such a group. As an environmental professional, I encourage all environmental consultants, contractors and other businesses to step forward and volunteer their services on similar projects in their own communities.

Al Hoop
Marketing/Sales Manager
Specialty Systems
Indianapolis

Editor's note: Other efforts to remediate or redevelop abandoned urban industrial sites - so-called 'brownfields' - are outlined in an article on page 45.

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EPA: Risk Bill Will Cost Industry, Create Gridlock

A bill requiring agencies to perform risk assessments on proposed regulations will cost industry more money because of the time government will have to spend performing the analyses, EPA says.

The warning came in a recent letter from EPA Administrator Carol Browner to Rep. George Brown (D-Calif.), ranking minority member of the House Science Committee. The committee is one of several holding hearings on HR 9, the Job Creation and Wage Enhancement Act.

Browner said EPA would have to increase its number of full-blown risk assessments from 38 to about 2,600 annually to comply with the bill's requirements. All of those requirements would cost the agency about \$220 million more annually, Browner said.

"The bill calls for more extensive risk assessments, cost-benefit analyses and regulatory impact analyses before EPA can take action," Browner said. "Industry that wants to put newer and safer chemicals on the market will likewise have to conduct more studies and analyses before these new chemicals can be approved. The result will be gridlock of the review system, a decrease in our ability to deal with unsafe chemicals currently on the market, and a significant delay in the introduction of new chemicals to the market."

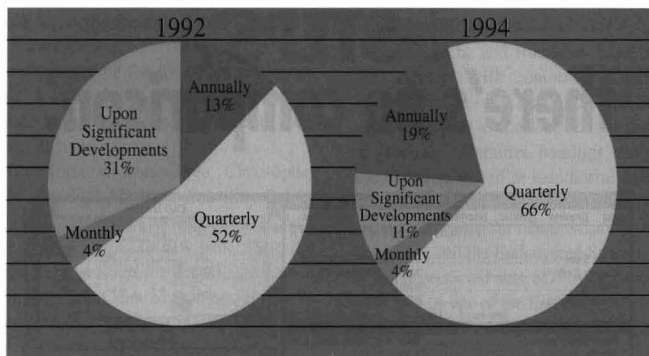
The bill also would "freeze" the science of risk assessment by specifying the types of health effects to be considered, according to Browner. The legislation focuses too much on cancer risks at the expense of other health impacts, she said.

EPA already conducts extensive risk assessments and cost analyses in many areas, Browner said. In some other cases, Congress has already made risk decisions. "Very few current rules developed under the Clean Air Act require separate findings about risk, since most of them merely implement risk management decisions already made by Congress," Browner said. "The additional effort required by [the bill] would be redundant, revising risk and cost/benefit issues already settled in the Clean Air Act."

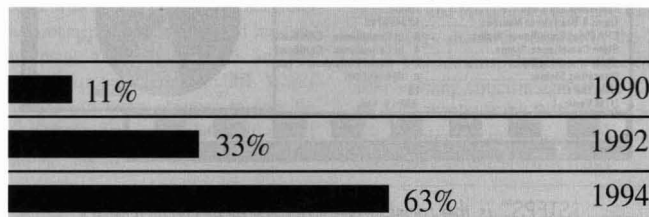
"Modest Growth" In \$7.4 Billion EPA Budget Request

President Clinton's \$7.4 billion EPA budget request for fiscal 1996 offers only a 1 percent increase over this year's funding. But it symbolizes the agency's commitment to fighting the greatest environmental risks,

Frequency of Corporate Environmental Reviews



Use of Written Guidelines to Account for Environmental Costs



Corporate Environmental Concern on the Rise

Is the corporate world going green? Yes, according to a recent survey of U.S. firms on their efforts to manage environmental regulations. The study by Price Waterhouse, their third since 1990, found growing momentum behind corporate efforts to develop comprehensive environmental management programs.

"There is strong evidence that Corporate America is placing more importance on its environmental responsibilities than ever before," said Dean Petracca, head of the firm's Environmental Services Group, in releasing the report.

More than 40 percent of responding companies, including manufacturers, public utilities, mining operations and others, said they have elevated management of environmental compliance to their boards of directors and high-ranking executives. The finding is nearly double that of a 1992 survey and almost three times larger than an initial survey in 1990.

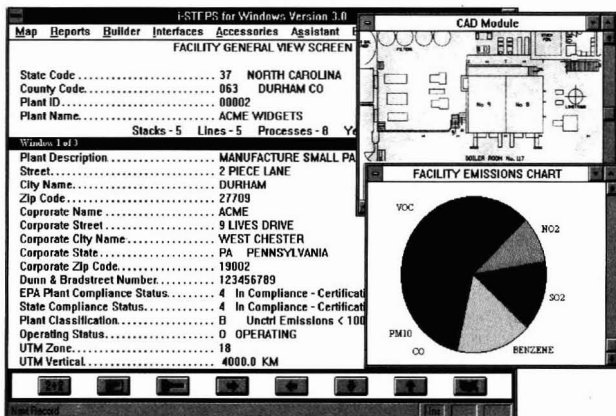
Compiled from responses by 445 large companies with sales ranging from \$100 million to the multi-billions, the survey reflects considerable increases in corporate efforts to take charge of their environmental affairs. For example, almost two-thirds of respondents said they rely on written guidelines to account for environmental factors in their operating costs (see bar chart). And the number of firms that regularly review their environmental liabilities grew more than 20 percent in the past three years (see pie charts). According to the study, more companies appear to be "packaging" environmental reviews with other recurring review and reporting responsibilities.

Efforts to integrate environmental performance with incentive compensation for top management is also on the rise, the study noted.

Petracca cited increases in environmental compliance costs and heightened awareness among regulators, shareholders and the general public as drivers behind the changes.

Price Waterhouse, based in New York, provides strategic environmental consulting, including benchmarking studies, auditing, tax and accounting guidance and litigation support for senior executives and boards of directors. The survey, *Progress on the Environmental Challenge*, is the third in the firm's biannual series on Corporate America's management of environmental issues and costs. To request a copy, contact Michael Ascolese, Price Waterhouse LLP, 1251 Avenue of the Americas, New York, N.Y., 10020. — By Eric Hay

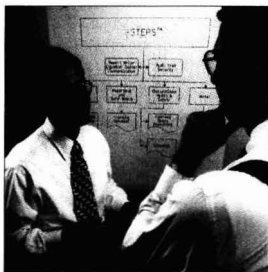
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NEWS

strengthening partnerships, ensuring compliance and emphasizing sound science, according to EPA Administrator Carol Browner.

The budget "will allow us to continue our effort to achieve the very best environmental results at the least cost - cleaner for the environment, cheaper for business and taxpayers, and smarter for America's future," Browner said at a February briefing on the plan.

Browner said her chief concern is that overzealous congressional budget-cutters would dictate cuts while denying the agency the flexibility to choose where to make them. It might mean "that we could not have a research and development program or a drinking water enforcement program, for instance - it would be that bad," she said.

The effort to redirect funds in this budget toward the highest risks is evident in a number of areas, Browner said, including an increase in Superfund coffers from \$891.8 million in fiscal 1995 to \$995.9 million in fiscal 1996. The additional \$104.1 million is earmarked to clean up the highest risk sites first and expand the agency's effort to redevelop abandoned or unused urban industrial tracts, known as "brownfields." The increase would also fund initiatives to establish cleanup standards for differing types of land use and to develop generic cleanup standards for landfills and other sites.

Tougher enforcement and more compliance assistance to businesses are also outlined in the budget proposal. The recently reorganized Office of Enforcement and Compliance Assurance would see funding increase by \$26.4 million over current levels to a total of \$150.4 million, Browner said.

Other FY '96 budget requests include:

- \$1.56 billion for Superfund;
- \$2.3 billion for combined wastewater and drinking water infrastructure improvements;
- \$77 million for cleanup of leaking underground storage tanks;
- \$590 million for multimedia programs, including \$30 million for pollution prevention;
- \$150 million to support environmental cleanup activities under the North American Free Trade Agreement.

EPA Invites Industry To Join 'Common Sense' Council

EPA officials are hearing from more than 150 potential members of the fledgling Common Sense Initiative Council (CSIC),

an advisory committee overseeing implementation of the agency's new initiative.

Representatives from six industry sectors – including metals finishing, pulp and paper, automotive and electronics manufacturing – will make up the council and six subcommittees, together with EPA and environmental advocacy representatives.

Each sector group is charged with reviewing proposed regulations and make recommendations for enhancing flexibility, increasing pollution prevention, promoting environmental technology innovation, simplifying reporting requirements, streamlining the permit process and finding ways to strengthen compliance.

"For the first time, we bring all the affected parties to the table to reinvent the current system of one-size-fits-all regulations," said Browner at the inaugural meeting of the metal finishing team. "We can find new ways of doing business that are cleaner for the environment, cheaper for industry and taxpayers, and smarter for America's future."

For information on participating in the program, contact EPA's Common Sense Initiative office at (202) 260-7424.

CWA, SDWA Targeted By Senate Task Force

Major environmental statutes, including the Clean Air Act, Superfund and the Clean Water Act are on the list of top ten "worst case" laws containing regulations that the Senate Republican Regulatory Relief Task Force wants to rewrite.

Task force co-chairs Sen. Christopher "Kit" Bond (R-Mo.) and Sen. Kay Bailey Hutchison (R-Texas) announced the list at a recent meeting of the new panel. Specific regulations on their hit list will be named later, they said. Other environmental statutes named were the Safe Drinking Water Act, the Endangered Species Act, wetlands regulations and the Delaney Clause of the Federal Food, Drug and Cosmetic Act of 1958.

Bond, who heads the task force subgroup on environmental regulations, said his subgroup plans to work with EPA and the Senate Environment and Public Works Committee to make changes to specific rules. Other members on the environment subgroup are senators James Inhoffe

(R-Okla.), Don Nickles (R-Okla.), Robert Bennett (R-Utah), Alan Simpson (R-Wyo.), Richard Shelby (R-Ala.) and Frank Murkowski (R-Alaska).

Bond said he and Hutchison have talked "extensively" with committee Chairman John Chafee (R-R.I.) about their plans. He said they expect to continue talks as they try to schedule committee hearings and draft legislation to amend or reauthorize environmental statutes on the "Top 10" list. Both water laws are up for reauthorization, as are Superfund and the Endangered Species Act.

Bond predicted that SDWA reauthorization "will be one of the first things out of the blocks" from the committee.

Bond and Hutchison cited examples of programs drawing complaints from constituents, including the state implementation plans, vehicle maintenance and inspection programs and Maximum Achievable Control Technology standards required by the 1990 CAA Amendments. Hutchison directed her most scathing criticism against the habitat designation rules in the Endangered Species Act, charging that in many cases they violate landowners' private property rights.

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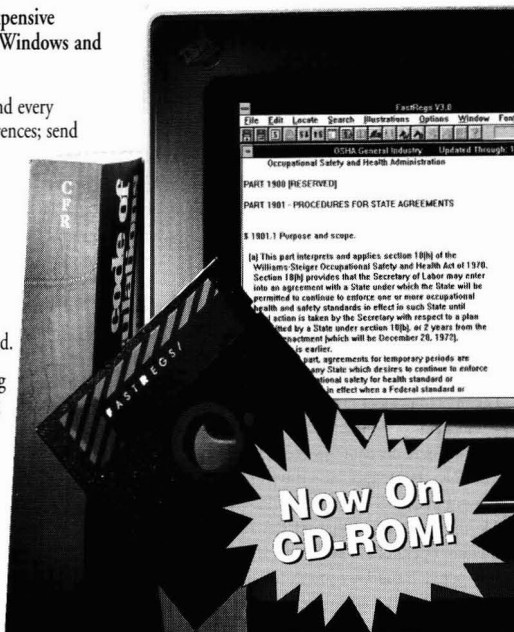
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Carbamate Wastes Added To RCRA Hazardous List

EPA is proposing to define six wastes generated during the production of carbamate chemicals as hazardous wastes under RCRA. However, the agency says it would exempt certain carbamate wastes from stringent RCRA rules "if the generator demonstrates that hazardous air pollutants are not being discharged or volatilized during waste treatment," according to the proposed rule.

Other exemptions include those for biological treatment sludges generated during the treatment of certain wastes, provided the sludges do not display the hazardous waste characteristics of corrosivity, ignitability, reactivity or toxicity.

EPA estimated that carbamate producers will spend between \$140,000 and \$900,000 per year to comply with the listings. If they can qualify for the exemptions, they can meet the low estimate, the agency said.

"One of the significant aspects of the rule is that it's the first to go final with a risk assessment," said EPA project officer John Austin. "All of the decisions are presented in relation to the risks that were calculated."

The six wastes to be regulated under RCRA Subtitle C include organic wastes, contaminated wastewaters, baghouse dust and filter/separation solids from the production or treatment of carbamates, carbamoyl oxides and thiocarbamates

The proposed rule appears in the Feb. 9 Federal Register.

New EPA Guidelines For Municipal Incinerator Ash

EPA has decided to allow operators of municipal solid waste incinerators to combine fly ash with bottom ash before testing for hazardous characteristics

The decision, which translates into millions of dollars in savings for most municipal incinerators, played well with mayors attending an annual conference in Washington, D.C., where EPA Administrator Carol Browner announced the policy shift.

The announcement ends speculation over how the agency would interpret a May 2 Supreme Court decision on section 3001(i) of RCRA (*Chicago v. Environmental Defense Fund*, US SupCt, No. 92-1639). While the court ruled that RCRA requires incinerator operators to determine if their facilities' ash is hazardous waste, the decision did not explicitly outline testing criteria. Incinerator operators feared that EPA would

decide to regulate within the "four walls" of combustion facilities, subjecting each separate ash stream to hazardous waste tests.

EPA's decision to allow ash to be combined before testing "means \$1 to \$3 million in construction costs saved per facility," said Bruce Weddle, director of the municipal and solid waste division of EPA's Office of Solid Waste. Most facilities already have the capacity to recombine ash types, producing an end product which rarely tests positive for hazardous constituents, Weddle said.

Environmental advocates criticized the move. "Allowing the mixing of fly and bottom ash amounts to abiding by the outmoded and erroneous logic that 'dilution is the solution to pollution,'" said Dr. Richard Denison, a scientist with the Environmental Defense Fund. EPA's decision eliminates any incentive for incinerator owners to keep toxic materials from entering their facilities, he added.

Incinerators are not simply mixing and diluting the ash, argues David Sussman, senior vice president for environmental affairs at Ogden Projects, Inc. Most facilities are equipped to perform a combination process which converts the two ash types into an impervious matrix of silicon, aluminum and ferric oxides, commonly known as Portland Cement, Sussman said.

The Fairfield, N.J.-based waste management firm operates 27 municipal waste-to-energy facilities.

Medical incinerators target of CAA rule

Medical waste incinerators would have to reduce yearly emissions of nine major air pollutants by 93 percent under proposed regulations signed Feb. 1 by EPA Administrator Carol Browner. The rules would curtail annual medical waste incinerator emissions of dioxin and mercury by 99 percent and 93 percent, respectively, according to EPA. The proposed rule also restricts emissions of particulates, carbon monoxide, lead, cadmium, hydrogen chloride, nitrogen oxide and sulfur dioxide.

A preliminary draft of EPA's dioxin assessment, released in September, has intensified agency efforts to regulate dioxin emissions. The draft report characterizes the nation's 3,700 medical waste incinerators, which EPA says will be joined by 500 new facilities over the next five years, as the "largest overall contributor of known annual national air emissions of dioxin."

EPA predicts that the new rule would cause as many as 80 percent of existing fa-

cilities which use onsite incineration to switch to an alternative method of treatment, avoiding the increased cost of installing air pollution control equipment.

Nationwide annual compliance costs for existing facilities would increase to \$390 per ton, up from \$168 per ton, according to EPA. When the proposal becomes final in April 1996, existing facilities will have from two to five years to comply, while new facilities will have a six-month compliance deadline.

Gingrich Rips EPA At D.C. Conference

Two leading Republicans offered widely different perspectives on the future of environmental protection at a conference in Washington last month.

Speaker of the House Newt Gingrich (R-Ga.) painted a picture of an EPA run by "upper-middle class bureaucrats" who are completely out of touch with local realities. Sen. John Chafee (R-R.I.), on the other hand, said the environmental laws now in place have drastically reduced pollution, and Congress should be careful how it changes them.

The lawmakers made their remarks at a roundtable sponsored by the National Environmental Policy Institute in Washington.

On risk assessment, Gingrich predicted "a pretty good result" from House and Senate legislation. He said the Contract With America "gets these bills out of the House," but added, "These bills are benchmarks but they're not locked in stone."

In the EPA-regulated areas of land, air and water, little escaped Gingrich's attention. "Superfund is a national disgrace," he said. "Let's totally rethink Superfund." He also supported consideration of "a very expanded market for clean air" and changes in cleanup standards for brownfields—abandoned, contaminated industrial sites.

He also favored consideration of "a very expanded market for clean air." Gingrich said Rep. David McIntosh (R-Ind.), who is the chairman of the House subcommittee on national economic growth, natural resources and regulatory affairs, would like to involve more than just utilities in trading air credits. McIntosh is also interested in looking at a program to buy up pre-1980 cars.

Gingrich also said he has become closely involved in the dispute over the San Diego wastewater treatment plant, saying that EPA was "in effect, requiring San Diego to consider Great Lakes quality treatment system. I assume EPA knows the Pacific Ocean is

Water Mark.



Mark Weidman, Vice President and General Manager of Wheelabrator Clean Water's Thermal Operations Group, fishes in the Hudson River, downstream from WTI's Poughkeepsie EOS wastewater treatment facility and upstream from our New York Organic Fertilizer Company project in the Bronx, designed to turn two-thirds of New York City's sludge into an environmentally safe agricultural product.

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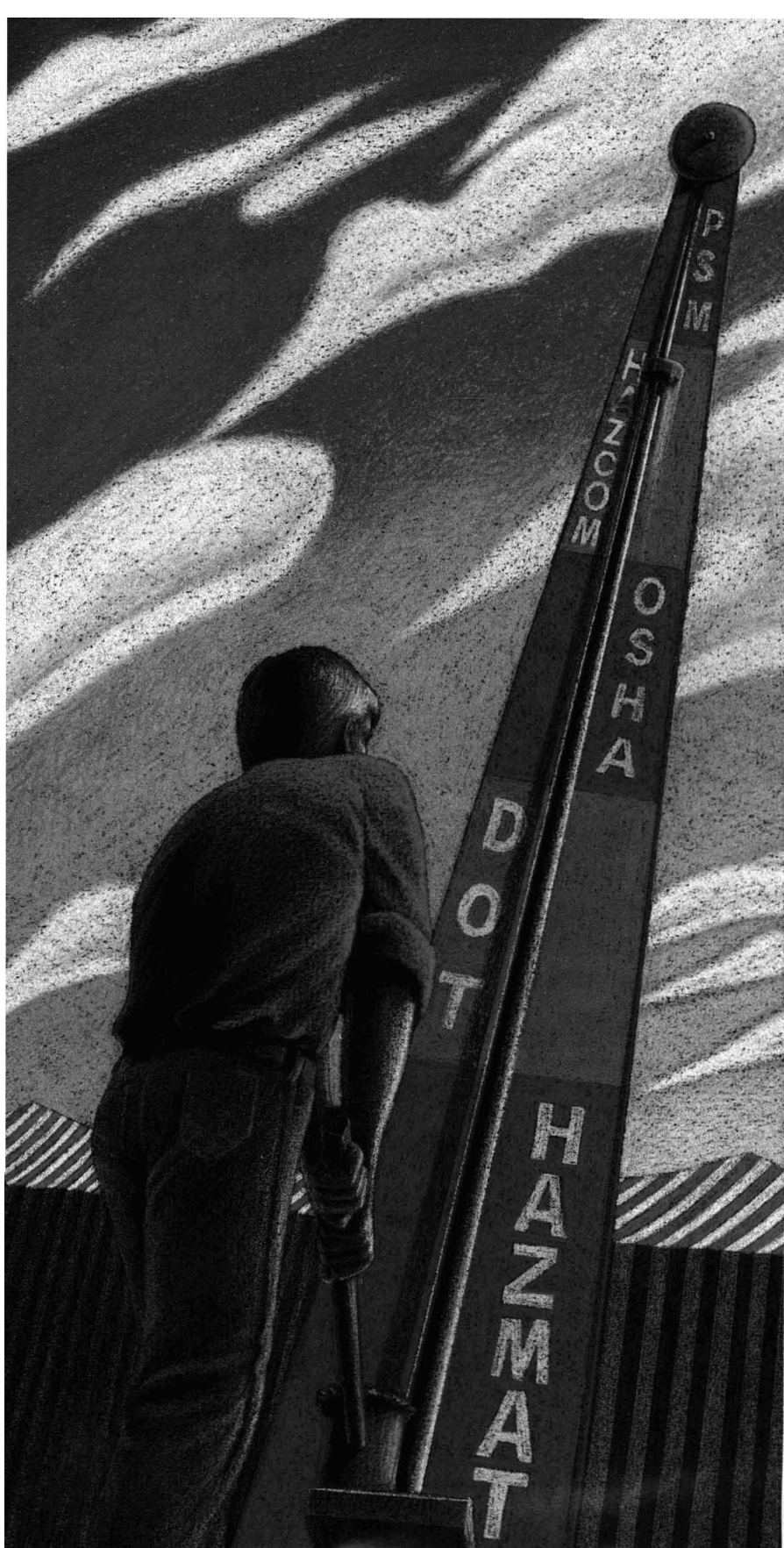
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NEWS UPDATE

near San Diego, and the Pacific Ocean is bigger than Lake Erie."

"We've spent far more money than we've gotten results, we've caused far more economic dislocation than we've gotten results, and we have a highly centralized command bureaucracy artificially trying to impose its judgment with almost no knowledge of local conditions, with a static rather than a dynamic model of government."

Chafee, chairman of the Senate Environment and Public Works Committee, defended the progress made in environmental protection in the past 20 years and urged caution in reworking environmental laws. "If reinvention means developing new approaches to pressing, unresolved threats to health, safety and the environment, I am all for it," he said. But "we must be careful and make sure that reinvention does not become a series of new hoops and hurdles that will make it much more difficult, expensive and near impossible to protect" the environment, he added.

The House risk assessment legislation is "a prescription for gridlock," Chafee said. EPA would have to complete risk assessments and cost-benefit analyses before issuing air or water permits or approving cleanup plans at Superfund and RCRA sites, he said. "These risk assessments would have to meet all of the new criteria for thoughtfulness and balance set out in HR 9, just like the risk assessments for EPA rules," he said.

Environmentalists could take EPA to court if the risk assessment for the permit "doesn't measure up," Chafee said. "I say, good luck, Mr. Manufacturer, getting a permit under those circumstances."

The National Environmental Policy Institute, headed by former congressman Don Ritter, held the day-long meeting to entertain options for 'reinventing' EPA.

Committee Passes Moratorium Bill

A bill that would place a moratorium on all new federal regulations was adopted last month by the House Government Reform and Oversight Committee. The bill now goes to the House floor, where it is expected to be the subject of unrestricted debate.

The version of HR 450 that passed the committee would affect rulemakings finalized or in progress as of Nov. 20, 1994. The moratorium period would end either Dec. 31, 1995 or when Congress adopts laws requiring regulations to be subject to risk analysis, risk assessment and cost-benefit analysis, "including analysis of costs result-

ing from the loss of property rights." HR 450 also extends any deadlines governing rulemakings until the end of the moratorium period.

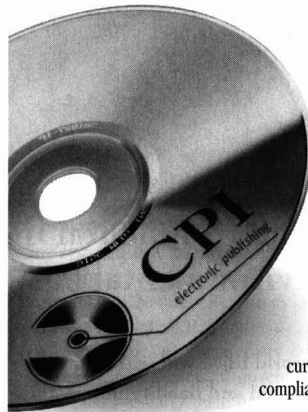
Excepted from the moratorium are actions taken to avert an imminent threat to health and safety or other emergency; to enforce criminal laws; to repeal, narrow or streamline a rule; or to reduce regulatory burdens, such as actions taken to explain IRS regulations. Other exemptions cover actions relating to "agency management, personnel or public property, loans, grants, benefits, or contracts," as well as actions "limit-

ed to a routine administrative function" of a government agency.

Democrats on the committee, not convinced that the exemption for imminent threats to health and safety would be sufficient to protect the public, offered numerous amendments to change the provision's wording or to specifically exclude particular regulations. An amendment suggested by Rep. Carolyn Maloney (D-N.Y.), rejected by a vote of 26-15, would have excluded EPA's ongoing rulemaking on disinfection byproducts in drinking water. Democrats also argued heatedly against making the moratori-

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NEWS UPDATE

um retroactive to Nov. 20, saying many regulations now in place are not controversial and are necessary, and that businesses have already invested money to comply with them. The amendment to make the moratorium prospective was defeated 22-17.

In other business, the committee adopted a bill February 10 reauthorizing the Paperwork Reduction Act (HR 830) that would require the federal government to reduce information collection burdens on the regulated community by 10 percent a year. To further that goal, HR 830 lists a number of requirements that agencies must meet before they can collect information for a rule-making. Requirements include evaluating whether the proposed information is (1) necessary for the "proper performance" of the agency's functions, (2) does not duplicate other information accessible to the agency, and (3) reduces the burden on respondents.

State Officials Discuss Stormwater Moratorium

Calls for a moratorium on the Clean Water Act's stormwater permitting program, a greater role for state and local governments in administering the act, and a reinvigoration of the state revolving loan fund punctuated the House's first CWA reauthorization hearing.

Rep. Sherwood Boehlert (R-N.Y.), chairman of the Water Resources Subcommittee of the House Transportation and Infrastructure Committee, opened the Feb. 9 hearing by declaring "this subcommittee and this committee will consider and pass a Clean Water Act reauthorization package this year." Ranking minority member Rep. Norman Mineta (D-Calif.), said reauthorization must provide "new and innovative solutions" for addressing wet weather pollution caused by nonpoint sources, stormwater and combined sewer overflows. Mineta chaired the full committee during the last Congress.

Many witnesses appeared to agree with Mineta, especially on the subject of stormwater, as they criticized the current stormwater program requirement that cities with populations of more than 100,000 meet water quality standards or comply with numerical effluent limitations. "Pollutants in stormwater, unlike those in wastewater, are unpredictable and vary," Stephen John, a member of the Decatur, Ill., city council, testified on behalf of the National League of Cities. "No system that

has thus far been designed can control or eliminate pollutants from rain run-off. And even if it were technically feasible, such extraordinary treatment might not be necessary."

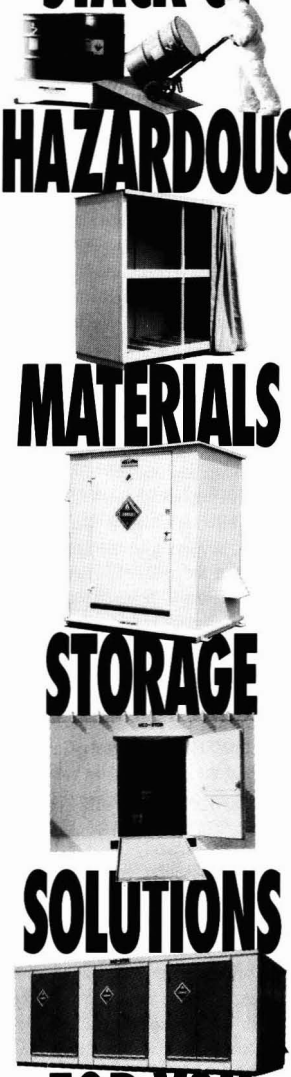
NLC, along with the U.S. Conference of Mayors, called for a moratorium on the current permitting program. Representatives of the National Association of Flood and Stormwater Management Agencies and the National Governors Association made a similar, although less extreme, recommendation as they urged that CWA treat stormwater as a nonpoint source that is best controlled by non-numeric, site-specific measures.

States deserve a greater voice in EPA decision-making in recognition of their role as "co-regulators," said Bruce Baker, president of the Association of State and Interstate Water Pollution Control Administrators (ASIWPCA) and director of the Wisconsin Water Resources Management Bureau. CWA reauthorization should redefine EPA's role and delegate to the states the "unnecessary administrative responsibilities" held by EPA, Baker testified. Both he and NGA representative Christophe Tulou advised that states be given greater flexibility to run programs such as nonpoint source pollution control, stormwater and the state revolving fund (SRF). Tulou is secretary of the Delaware Department of Natural Resources and Environmental Control.

CWA is "a series of rather costly mandates" imposed by "levels of government that don't have to carry them out," Dallas Mayor Steve Bartlett criticized, speaking for the Conference of Mayors. "We must begin to realign the partnership to reflect local decision-making and local needs. We must find a way to give local governments the opportunity to exercise more control and authority in shaping the agenda."


The SRF finances low-interest loans to communities for improvements to their wastewater treatment infrastructure. Although the President's budget request allocates \$1.6 billion for the SRF in fiscal year 1996, ASIWPCA recommended \$2.4 billion and the Council of Infrastructure Financing Authorities \$2 billion. CIFA President Paul Marchetti also called for Congress to remove current restrictions on private sector access to SRF lending capital and to allow states to co-mingle wastewater funds with drinking water funds that Congress wants to establish for SRF under the Safe Drinking Water Act.

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DOE: Recycling Mandates Not Always Beneficial

Mandated recycling rates will not induce maximal energy savings or optimal environmental protections, according to a new report by the Department of Energy.

Although recycling is the most energy-efficient waste management option for a majority of waste materials, including metals, newspaper, plastics, and glass, recycling goals are misdirected if they fail to take into account potential energy recovery from combustion, the report asserts.

In particular, kraft paper, which includes paper packaging, white office paper, and magazines, should be burned for fuel, rather than recycled, to save energy and reduce pollution, the report concludes.

DOE contracted the report, "Mandated Recycling Rates: Impacts on Energy Consumption and Municipal Solid Waste Volume," in response to two RCRA reauthorization bills introduced in the 102nd Congress, according to the Linda Gaines, co-author of the study. The two bills contained provisions to promote recycling and, for some materials, had specified recycling rates above the 25 percent goal originally proposed by the EPA in 1988. Although both bills failed to pass, DOE took exception to the fact that each did not count combustion towards recovery goals, Gaines said.

Much of the public equates greater recycling with greater environmental protection, but that is not always the case, said Gaines. For example, the study found that 570 trillion BTU's of energy could be recovered each year by burning 40 percent of the nation's kraft paper. Recycling that same amount would require as much energy as it would save, providing the nation with no real energy savings, according to the report.

Small, hard to separate plastics, such as yogurt containers, also should be burned for energy, Gaines said. "You're saving the environment by substituting these materials for coal," she added.

Other recycling experts disagreed with the findings. "When you do these studies, you simply can't ignore the cost of siting an incinerator," said Chaz Miller, manager of recycling for the National Solid Wastes Management Association. Also, energy costs associated with transporting recyclables are often overestimated, according to Miller. "Recyclables are extensively backhauled - trucks are going to be on the road regardless," he said.

Some states already include combustion

as part of recovery goals, according to Edgar Miller, director of policy for the National Recycling Coalition. For example, up to 10 percent of California's waste diversion goal, currently set at 50 percent, can be satisfied through waste-to-energy operations, Miller said. "But resource conservation values make recycling more preferable," he said.

For a copy of the report, contact the National Technical Information Service in Springfield, VA at (703) 487-4660.

Consumer Groups Launch Safe Water Campaign

A coalition of more than 200 environmental, public health, consumer and community groups kicked off their "Campaign For Safe And Affordable Drinking Water" last month by releasing a report on drinking water contamination. The report also contains legislative recommendations for reauthorization of the Safe Drinking Water Act and the Clean Water Act.

Contaminated tap water caused at least 116 disease outbreaks and sickened nearly half a million people between 1986 and 1994, according to the report, according to "The Dirty Little Secret About Our Drinking Water." In addition, the report estimates about 47 million people drank water with excessively high levels of bacteria and turbidity between 1993 and 1994. The report was prepared by the Natural Resources Defense Council with data from EPA and the Centers for Disease Control and Prevention.

The NRDC report asserts "these reported outbreaks are just the tip of the iceberg. Some scientists estimate that as many as 25 waterborne illnesses may occur for every one that is documented . . . experts in infectious and parasitic disease from [CDC] have estimated that 940,000 people are sickened, and 900 die, from contaminated tap water in the U.S. each year."

The report's data "has been out there for a while," said Alan Roberson, associate director for regulatory affairs for the American Water Works Association. Although he had no argument with the data itself, Roberson said, "Where I have a problem is the relative scheme of things — food is an order of magnitude greater than water as a source of risk, and there are statistics to back that up. That's not to say we shouldn't make the water better, but to present data on waterborne illness without showing the other, greater risks presented by other path-

ways distorts the picture."

Contamination of underground and surface sources of drinking water can be prevented through watershed and groundwater protection measures, pollution prevention and drinking water treatment technologies, according to NRDC. The report recommends that strong, targeted watershed and public health protection programs be incorporated into the Clean Water Act, the Safe Drinking Water Act and the Farm Bill when Congress reauthorizes those laws.

Yet "Congress is moving in the wrong direction in seeking to relax drinking water and pollution controls and choke public health programs with red tape," the report charges. Risk assessment, regulatory impact analysis and other requirements Congress is considering would impose "extraordinarily burdensome" additional hurdles that new drinking water standards would have to clear before being adopted, according to the report.

Other coalition members are Physicians for Social Responsibility, Clean Water Action, the National Consumers League, American Public Health Association, the U.S. Public Interest Research Group and American Rivers.

EPA Assailed Over CAA Enforcement

Three Republican governors sharply criticized the EPA last month over its enforcement of Clean Air Act provisions.

Govs. George Allen (R-Va.), Pete Wilson (R-Calif.) and John Engler (R-Mich.) complained to the House Oversight and Investigations subcommittee over what Allen termed an "illogical and counterproductive manner" and "policy of intimidation" by EPA in enforcing CAA requirements. He cited one case where EPA threatened to have the state's federal highway funds—worth \$400 million— withheld for fiscal year 1995 because of Virginia's ongoing fight with EPA over how to conduct auto emissions testing.

The governor also called EPA's own standards "equally absurd and unreasonable." In particular, he disagreed with the manner in which an area in southeast Virginia was bumped up from the classification of "marginal" to "moderate" based on ozone emissions standards. The area exceeded the agency's levels by only six hours over a three-year, 26,000-hour period. A "moderate" tag requires states to enhance ozone control measures.

Like Allen, Wilson told the subcommittee that EPA threatened to withhold \$700 million in federal highway funds in 1993 if California did not adopt a centralized air emissions testing process. He said EPA demanded that the state replace its 9,600 decentralized stations with a centralized system with about two percent as many stations, or one station for every 100,000 drivers in the state. EPA since agreed to allow California to proceed with its centralized program. But to further confuse matters, the agency has included a decentralized system in its federal implementation plan for California, which is scheduled to take effect in February 1997. A centralized program will "cost thousands of jobs at small service stations throughout California," said Wilson, who is pushing Congress to enact legislation that would strip EPA of its authority to oversee the FIP.

Engler called for a national two-year moratorium on EPA-imposed sanctions, during which states can work with the agency to address act-induced hardships. He cited problems the act poses for Michigan, including what he called "arbitrary and unfair" deadlines such as 1996 for west Michigan to attain the ozone standard compared to 2007 for Chicago. He also complained that large transport problems bring ozone gases from Chicago, Milwaukee, and Gary, Ind., to west Michigan, making it impossible for that region to reach federal ozone standards.

"Rather than being caught between a rock and a hard place, Michigan was caught between smog from Chicago and the inflexibility of the Clean Air Act," Engler said.

Copper Mine Pays \$205M CAA Fine

Copper Range Co. agreed Jan. 31 to pay about \$205 million for environmental projects, civil penalties, and state-of-the-art equipment that will curtail mercury, lead, and cadmium output from its smelting plant in White Pine, Mich.

Under the terms of the agreement, Copper Range will install a new \$200 million smelter that will dramatically curb emissions of all toxic pollutants, said Robin Johnson, the company's public relations manager. Although the settlement allows for interim pollution control measures to bring the company into compliance by 1996, Copper Range plans to shut down its smelter by March 31 and proceed with immediate installation of the new state-of-the-

art unit. The new smelter is expected to reduce mercury emissions by at least 95 percent, he said. The agreement also requires the company to pay \$1.8 million in civil penalties and \$3 million on environmental projects.

The company is a subsidiary of Toronto-based Metal Mining.

Lewis: Calif. CAA Plan Will Threaten Business

Businesses in California will experience "devastating" effects from the two-year delay in enforcing a federal clean air plan for the state, the head of the House Subcommittee that funds EPA warned this month.

Rep. Jerry Lewis (R-Calif.), chairman of the House VA-HUD Appropriations subcommittee, based his opinion on a Feb. 6 ruling by U.S. District Court Judge Harry Hupp approving EPA's controversial federal implementation plan (FIP) for California but delaying its implementation until February 1997 (Coalition for Clean Air v. EPA, CD Cal., C2 88-4414HLH).

In particular, Lewis is concerned that industries will not know how to prepare for eventual implementation of the FIP or California's own state implementation plan, which contains rules similar to the federal plan. Both proposals require emission reductions under a series of deadlines running into the early part of the next century.

Consequently, state businesses "won't make investments" on clean-air equipment for fear of not knowing how to meet FIP or SIP laws, said Frank Cushing, the subcommittee's staff director. California companies will pay an estimated \$17 billion annually to meet FIP laws once they are enacted, compared to \$6 billion for the SIP, according to California EPA spokesman Dan Pellissier.

"There are a lot of businesses in the [three nonattainment] areas . . . big industrial, residential and high-volume businesses," Cushing said. "If they don't know the rules and the business investment becomes too risky, they're not going to be able to make decisions."

Agencies Still Mulling Environmental Justice Actions

Officials from four federal agencies last month reviewed efforts to address environmental threats in minority and low-income populations. The Environmental law institute

hosted the briefing to mark the first anniversary of President Clinton's executive order on environmental justice.

The Interagency Working Group on Environmental Justice, created under the executive order, has sprouted eight task forces, said Kathy Aterno, an EPA deputy assistant administrator who chairs the working group. The group, comprised of representatives from 11 agencies and 5 white house offices, will act as a "clearinghouse for various agencies to share research and data," said Aterno.

As part of the executive order, each of 11 federal agencies must submit a strategy for making "environmental justice part of its mission" by April 1, Aterno said. Public input at meetings and workshops around the country has been so overwhelming that the administration extended the public participation deadline until March 1, said Robert W. Faithful, representing the Department of the Interior at the briefing.

Although the executive order targets communication between local groups and government agencies, "all solutions ultimately are local," said Faithful.

Industry officials would like to see environmental justice concerns settled in other arenas, however. "It's inappropriate for the state to get into local land use planning," said Ron Hogan, director of government affairs for Waste Management Inc., which operates the Live Oak Landfill in Atlanta.

Court Upholds Washington State Waste Hauling Law

A federal appeals court last month upheld a Washington state law which requires all waste haulers to obtain state permits and to service prescribed districts in their entirety (Waste v. Nelson, Ninth Circuit Court of Appeals, Nos. 93-35546, 93-35897, 2/9/95). Under the law, the Washington Utilities and Transportation Commission divides the state into service territories and only grants permits to those haulers who will service an entire territory. The law is intended to induce uniform collection fees across the state and to assure waste service in rural areas.

Kleenwell Biohazard Waste and General Ecology Consultants, a medical waste hauling company based in Seattle, had their permit application denied in 1990.

Judge Stephen Reinhardt wrote in the 3-0 decision, "Any burden imposed on interstate commerce by this regulatory scheme is clearly incidental to its main goal of protecting the health and safety of Washington residents."

By Richard J. Kogan

New Permit Emphasizes Pollution Prevention

Superlatives such as “first-ever” – when citing beneficial environmental initiatives – are decided pluses for corporate America. But when U.S. business can also do well by doing good, then a new milestone has been reached.

That’s what happened last December, when our research-based pharmaceutical company received New Jersey’s – and the nation’s – first-ever comprehensive facility-wide environmental permit. This single, all-inclusive operating permit covers all environmental requirements at our Kenilworth, N.J., facility, replacing a multitude of individual permits regulating air emissions, wastewater discharges and solid waste management.



Richard J. Kogan

Voluntary Program

Our new environmental permit, issued by the New Jersey Department of Environmental Protection with federal EPA’s approval, contains built-in pollution prevention incentives – an approach that will provide substantial benefits to the environment as well as the regulated community. The DEP expects to issue draft permits to two other companies this spring under the pilot permitting program and to 15 more manufacturers at a later date.

We were the first to receive a facility-wide environmental permit because we did the labor first – recognizing that pollution prevention is a bold new approach to protecting the environment that would reduce administrative expenses for state and facility alike. And we wanted to help light the way toward developing this type of facility-wide permitting approach.

Before participating in the voluntary permit program, Schering-Plough was required to obtain 60 to 70 separate environmental permits for discharges and emissions from our Kenilworth facility. Under this new single permit program, all these individual permits were reviewed by a special team of New Jersey DEP and Schering-Plough technical staff and integrated into one consolidated document.

Along the way, we performed a top-to-bottom review of our facility’s operations. As part of our “holistic” review, we developed an inventory of all the sources of industrial discharges and emissions. We found that a compelling

logic emerges for streamlining the environmental regulatory process – for looking at a plant’s operations as a whole the same way a doctor examines the whole patient.

Costs, Wastes Reduced

The materials given attention in this program were primarily organic compounds such as 3A alcohol, hexane, CFCs and trichloroethane. Priorities were then established for identifying options for hazardous source reductions – and we developed a comprehensive plan for implementing specific pollution prevention measures.

While our participation in the nation’s first pilot facility-wide permit process involved a substantial commitment of resources – \$1.5 million dollars and 5,000 staff hours – we believe the benefits that will flow from this process make that commitment worthwhile.

For example, by developing an in-process recycling program that recovers CFCs used in our aerosol manufacturing production, we save money and eliminate 10 tons per year of hazardous waste generation.

We also completely eliminated the use of trichloroethane as a solvent by replacing it with an aqueous-based system. This has resulted in a five ton-per-year reduction in air emissions and a 12 ton-per-year reduction in hazardous wastes.

As a result, we expect to save \$300,000 annually by reducing costs for waste disposal and raw materials. In addition, we anticipate substantial savings in administrative costs.

Our investment in developing and testing this new regulatory strategy has shown us that moving the regulatory process toward pollution prevention – and away from pollution control – makes good sense for all involved. The facility-wide permit approach reduces pollution before it’s even produced. This is good news for business and the environment.

Editor’s note: The New Jersey pilot permitting program is being closely watched by U.S. EPA, whose Region II office played a key role in developing and approving the facility-wide permit. The agency will evaluate the program as part of its effort to develop a facility-wide permitting approach.

Richard Kogan is president and chief operating officer of Schering-Plough Corp., a pharmaceutical manufacturer based in Raritan, N.J.



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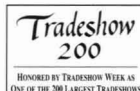
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Regulatory Reform

The View From Industry

Proposals to revamp the way the federal government regulates industry are the talk of Capitol Hill – and corporate boardrooms as well. The Republican-led initiatives, which would bolster risk assessment of proposed regulations, protect against so-called unfunded mandates, and provide regulatory relief in the form of a moratorium on new rules, are a welcome change to many in industry.

In the following pages, leading voices in three key industry sectors –

chemical manufacturing, petroleum refining and pulp and paper processing – give their views on the need for regulatory reform and the promise posed by several congressional initiatives. They include Fred Webber, president of the Chemical Manufacturers Association, former Deputy Energy Secretary W. Henson Moore, newly appointed head of the American Forest and Paper Association, and Gene Godley, who represents the Independent Refiners Coalition.

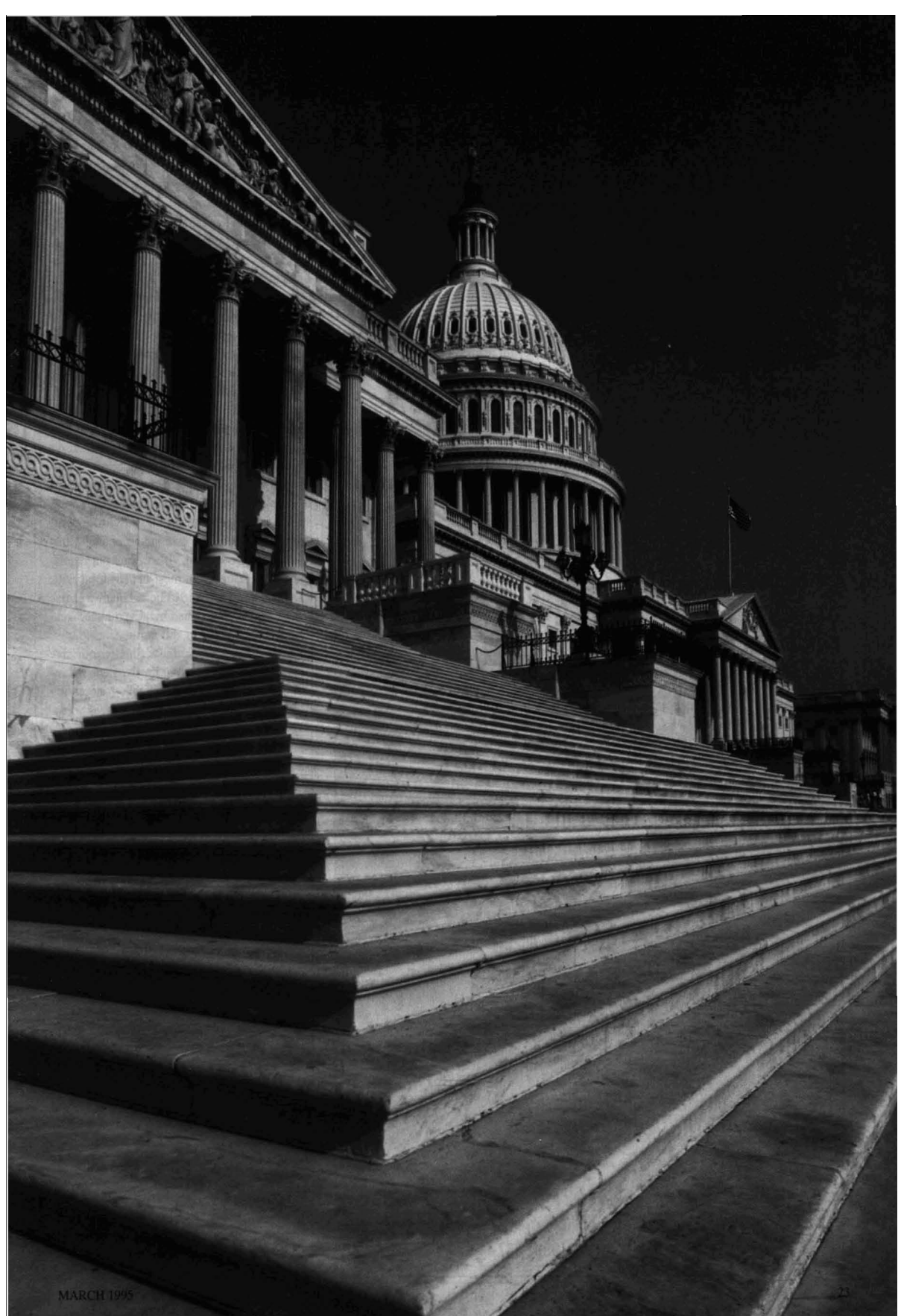
Making government more efficient and effective

By Fred Webber

Regulatory reform is front-page news these days. In his State of the Union address, President Clinton made it a pillar of his “New Covenant.” He called for a government that is “smaller, less costly and smarter, leaner but not meaner.” Republicans began the call for reform last fall and the 104th Congress has been working to improve the nation’s regulatory framework. This same new wave of thinking is reflected at the state and local level as well.

Their talk is music to our ears. For years, CMA has called for a change in our nation’s regulatory structure. Yes, the current command-and-control system has resulted in measurable improvements. Our nation’s air and water quality are significantly better. But at what cost? The nation spends \$140 billion a year on rules designed to protect the environment. At the current pace, environmental regulations will cost society \$200 billion a year by the year 2000.

Yet in its 1990 report, *Reducing Risk: Setting Priorities and Strategies for Environmental Protection*, EPA acknowledged there has been little correlation between the resources dedicated to different environmental problems and the risks posed by those problems. “Despite the demonstrable success of past national efforts to





Fred Webber

protect the environment, many national environmental goals still have not been attained," the report said.

We think a risk-based approach to public policy will make regulations work better and cost less. Risk-based policies are founded in sound management principles. Risk policies are cost-effective. Risk policies are understood by the public. In short, they are fair and make sense.

CMA has developed some common sense principles for regulatory reform we think will satisfy people's desire for a government that

delivers better results at a far more reasonable price. Our proposal can be divided into four parts:

- **Setting priorities:** Take aim at the most serious problems first. Our principles consider how one threat or risk compares with another so that we can set priorities for environmental, health and safety laws.

- **Cost-effective solutions:** Our risk principles favor cost-effective solutions. We won't settle for less protection. We want to spend resources more effectively in the search for health and environmental solutions. In other words, getting more bang for the buck.

- **Sound risk-assessment:** Risk-based policies use the best information available to make decisions. Policy makers currently use a scientific tool called risk assessment to estimate the health consequences of an activity. But the Harvard School of Public Health says "there are genuine problems with government's current risk assessment practices that need to be corrected." If we want our regulations to achieve the most benefit to society, we must improve the technical quality of risk assessments performed by government agencies.

- **Public involvement:** Finally, our risk principles call for public involvement. An informed and fully engaged public is necessary for establishing priorities and allocating appropriate resources. We cannot leave important policy decisions in the hands of unknown technocrats.

Our goal is not to stop government dead in its tracks. Rather, our risk-based principles seek to fix those things that are unnecessarily burdensome while maintaining a high level of protection for human health and the environment.

There is overwhelming support for this form of governance. More than 900 companies and industry organizations have formed the Alliance for Reasonable Regulation to push for needed reforms. Public officials at state and local levels are committed to reform as well. Congress and President Clinton support this approach. And, based on polling data, the American people want risk-based policies.

Clearly, 1995 is the year for reform. As President Clinton has said, it is time to "get rid of yesterday's government so that our own people can meet today's and tomorrow's needs, and we ought to do it together."

Fred Webber is president of the Chemical Manufacturers Association, whose 185 member companies produce more than 90% of industrial chemicals in North America.

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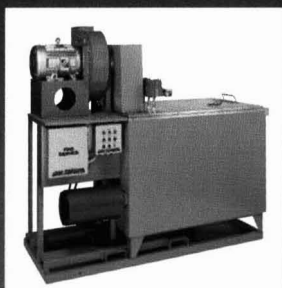
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A perspective from the refining industry

By Gene E. Godley

To the petroleum refining industry, environmental regulations have grown overly burdensome and the promise of regulatory reform is a welcome change. In part, that is why the Independent Refiners Coalition was formed over a decade ago. The IRC comprises 15 domestic independent companies who refine more than 38 percent of the gasoline consumed in the United States. Independent refining companies operate 140 refineries in 34 states, employing some 200,000 people.

Despite our long-term commitment to rational environmental protection, we have come to realize that the burgeoning cost of environmental compliance presents a real challenge for refiners. According to the National Petroleum Council study conducted for the Department of Energy, the domestic petroleum refining industry must invest \$14 billion more from 2001 to 2010 to comply with environmental regulations. The amount spent on compliance during this decade alone will actually exceed the total 1990 book value of all domestic refineries (after depreciation). Refineries spent 21 percent of their capital in the 1980's on pollution abatement, which will increase to 42 percent in the 1990's and 47 percent in the first decade of the next century. Indeed, the cash flow of all these refineries from 1991 through 1995 will be \$25 billion less than the required environmental expenditures.

Such large capital investments and compliance costs have put the domestic refining industry at a competitive disadvantage globally and have forced many domestic companies out of business. Reforms included in the House Republican's "Contract With America" could relieve much of the regulatory burden placed on industry and help prioritize the country's environmental goals.

One 'Contract' proposal, Title III of H.R.9, the Job Creation and Wage Enhancement Act of 1995, contains provisions for risk assessment, risk comparisons and cost-benefit analysis. In the Senate, Majority Leader Bob Dole (R-Kan.), together with members of the Senate Regulatory Reform Task Force, introduced S.343, the Comprehensive Regulatory Reform Act of 1995. The Senate bill is even more comprehensive in detailing cost/benefit and risk assessment methodologies. Currently, executive agencies must determine if a regulatory action is "significant" - costing \$100 million or more annually - and if so, consult with

the Office of Management and Budget. But the risk assessment guidance provided by OMB in those cases is often inconsequential.

The Toxic Release Inventory is being touted by some in Congress as valuable in providing the public with information about chemicals released in the environment. But only

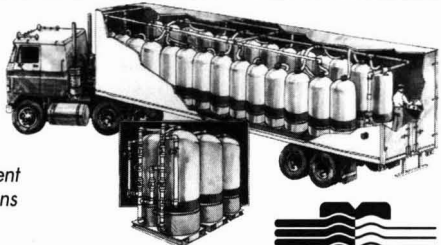
meaningful risk assessment, cost-benefit analysis and risk characterization will inform the public of the broad impact of environmental regulation, including its benefits and its economic burdens. Only sound risk characterization will help the public understand the actual dangers and possibilities.

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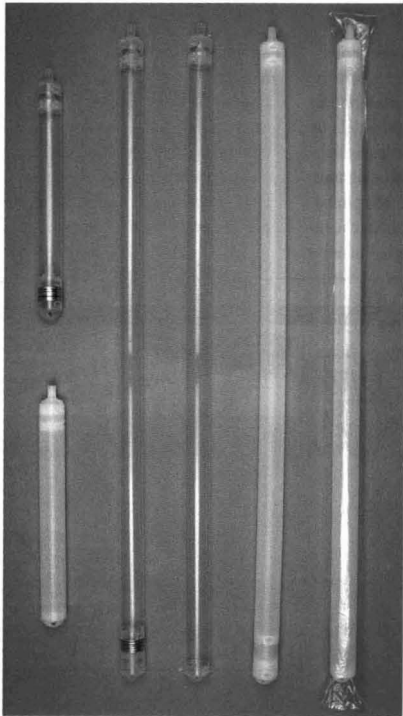


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The Paper Industry's Reform Outlook

By W. Henson Moore



W. Henson Moore

The federal government got a new management team last November after its shareholders used election day to vote out the old guard. And we at the American Forest & Paper Association are hopeful that new management can improve the way environmental policy is developed and implemented in Washington.

Of course, industry is no longer alone in sharing this expectation. Today, it finds new intellectual allies from academia questioning the economic efficiency of the command and control status quo. And new political allies have emerged – from grassroots groups indignant over the loss of private property rights to local governments complaining of unfunded mandates.

Fueling congressional calls for a panoply of reforms – including unfunded mandates, supporting regulatory moratorium and risk assessment, and shifting regulatory authority to the states – are insistent complaints from state and local governments about the rising cost of environmental regulations. By EPA's own estimates, state and local governments will spend \$50 billion annually by the

continued on page 35

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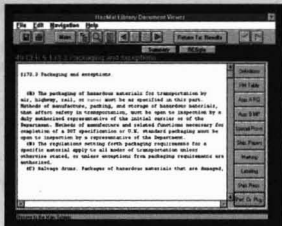
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Regulations are only half the story

Regulatory Reform

continued from page 25

sibilities for harm posed by all industries.

The Senate Republican Regulatory Relief Task Force, chaired by Senators Kit Bond (R-Mo.) and Kay Bailey Hutchison (R-Texas) recently listed Clean Air Act regulations among the top two of its list of Top Ten Worst Case Regulations. Based on their experience with CAA's stationary source program, domestic refiners second this view. Hopefully, requirements for risk assessment and cost-benefit analysis will have a profound effect on a number of pending CAA regulations. We're particularly concerned about impacts of the following proposed rules:

- **Enhanced Monitoring.** The EPA is currently working to meet an April deadline to finish its rulemaking for emissions monitoring at "significant units." The regulation would substantively change over a quarter-century of regulatory experience in emissions monitoring at the state level. Although EPA estimates compliance costs to be around \$1 billion per year, actual costs would probably be much more.

- **Refinery MACT Proposal.** Last July, the EPA released a proposed National Emissions Standards for Hazardous Air Pollutants (NESHAP) for petroleum refineries. The proposal would regulate petroleum refinery emissions from a number of sources, including storage tanks, process vents and wastewater collection and treatment systems to the maximum degree of emission reduction achievable. The proposal would cost the petroleum refining industry and estimated \$207 million in capital over five years and an estimated \$110 million annually.

- **NAAQS for Sulfur Dioxide.** Last November, EPA issued a proposed rule for National Ambient Air Quality Standards for sulfur oxides. Apparently, they believe that the current regulations do not go far enough because they do not consider exercising asthmatics who might be exposed to high concentrations of SO₂ for a five-minute period – and who might have failed to take their medication. The agency optimistically estimates that the costs of the new proposal will run \$250 million annually.

While the petroleum refining industry is committed to sound principles of environmental protection, we hope that effective risk assessment and cost-benefit analysis will assist in establishing workable priorities and in easing regulatory burdens.

Gene Godley, managing partner of the Washington office of the Bracewell & Patterson law firm, is counsel to the Independent Refiners Coalition. Mr. Godley is former Assistant Secretary of Treasury.

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Preparing a HON Subpart G Compliance Program

Emissions monitoring of process vents, storage vessels, transfer operations and wastewater operations will require careful planning to meet the 1997 compliance deadline.

By David Seifert

Although it targets the synthetic organic chemical manufacturing industry (SOCMI), the HON rule is only the first in a series of federal air rules that will regulate more than 170 industries by 2000. As a result, SOCOMI strategies for complying with the Hazardous Organic National Emission Standards for Hazardous Air Pollutants (HON) provide a model for all industries facing NESHAPs in the future.

Chemical manufacturers were required to notify EPA last August of chemical manufacturing process units subject to the HON rule and indicate whether they would be in compliance by April, 1997. With those notifications out of the way, it's time to take a systematic approach to achieving compliance with this complex regulation.

Some companies, facing manpower and budgetary constraints, are taking a "wait and see" approach to HON compliance. This may be a big mistake. Unlike traditional regulations that specify control requirements, the HON sets an overall limit and leaves compliance options open so managers can select the best combination for their facility. While alternatives may arise that ensure compliance with little advance planning, they may be expensive to purchase, install and operate. The best way to implement a cost-effective control strategy is to allow ample time to evaluate all options as they apply to your facility before your HON certification is submitted.

Most HON requirements are contained in two major subparts of the rule. This article focuses on Subpart G – which deals with process vents, storage vessels, transfer operations, and wastewater operations. Planning for overall Subpart G compliance should take about two-and-a-half years.

Identifying Emission Sources

For facilities with process vents, storage vessels, transfer operations, or wastewater treatment systems, the first step is to identify and classify sources of hazardous air pollutant (HAP) emissions. You must understand clearly which sources need to be controlled and identify the most serious emitters.

To accomplish this, a broad range of data must be gathered, including: process flow rates (air and water); chemical characterization of emission and wastewater streams; physical parameters of unit processes (e.g. tank sizes and product throughput for transfer racks); and chemical properties of emissions (e.g. vapor pressure and heat content). By using this information to classify your sources as Group 1 sources (controls required) or Group 2 sources (no controls required), you can focus your attention on the Group 1 sources. Gather data to make this determinations according to the following steps: Identify all HAP emission points, existing

control technology, and other applicable regulations. This gives you a complete list of all Group 1 and Group 2 sources.

Group 1/Group 2 Determinations – The next step is to conduct an initial emissions inventory of HON-regulated sources. Because the HON emissions inventory is more detailed than the emissions inventory required under the CAA Title V Operating Permits program, you may want to conduct one thorough inventory to meet both requirements. Existing source information and test results and should be reviewed before performing basic engineering calculations. Identify data gaps for making HON group determinations and obtain missing information. Reasonable estimates may be sufficient at this point to determine which sources are clearly Group 1 and which are Group 2.

Refine Borderline Cases – Costly controls may be avoided by improving the basis for the HON group determination. Once a refined emission inventory is completed, new emissions or wastewater measurements may be needed to resolve borderline sources. Process modifications and pollution prevention measures may be implemented to reduce the number of sources or volume of emissions requiring add-on controls. Emissions measurements may be required to document Group 2 status of process vents in this effort.

Identifying and classifying your sources should take approximately two to four months, depending on the size and complexity of your facility and the amount of source data already collected.

Evaluate and Plan Compliance Strategy – After compiling the data, identify the nature and extent of HAP emissions and formulate possible control options, pollution prevention strategies, and emissions averaging alternatives. The technical challenges of this step involve understanding the interrelationships among:

- processes
- current use and capacity of existing emission control systems
- current use and capacity of wastewater treatment systems
- cost-effective air pollution control engineering.

Under emissions averaging, a Group 1 source may be left uncontrolled in exchange for control of an equal or greater amount of Group 2 emissions. There are certain situations where overall control costs can be reduced by an emissions averaging strategy. However, emissions averaging involves more burdensome recordkeeping and reporting requirements. It is important to weigh the requirements and restrictions placed on emissions averaging compared with other compliance options.

Consider Process Engineering Standards – The HON sets a variety of new controls on wastewater systems including cooling water, maintenance turnaround wastewater, maintenance wastewater, and process

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HON Compliance

wastewater. The HON gives five broad treatment options for Group I wastewater at existing sources and four treatment standards for new wastewater sources. Careful process engineering will be key to determining how to group or separate, control, and treat these wastewater types to meet HON requirements cost-effectively.

Finalize Compliance Strategy – After evaluating your options, select a compliance strategy and conduct a hazard/risk analysis of any emissions averaging elements. Emissions testing may be needed to determine whether

the compliance strategy meets requirements. Once you have a compliance strategy, commit to it by submitting a written implementation plan to your state agency or EPA. If emissions averaging is part of your compliance strategy, the implementation plan is due October 1995.

Closing in on Compliance

The final phase of HON compliance is putting your strategy into full operation. This includes designing, procuring, and installing controls and monitoring equipment, establishing recordkeeping systems, and finally,

demonstrating compliance to regulatory agencies. Keep in mind the April 22, 1997 compliance deadline when developing the schedule for this phase. Leave enough lead time for vendors to deliver control and monitoring equipment – and additional time for equipment shutdown and troubleshooting.

Implement Monitoring and Record-keeping System – This is the logical time to organize, refine or upgrade your monitoring and recordkeeping system. Each Group I emission control and wastewater treatment system may be continuously monitored after the compliance deadline. Acceptable ranges for the operating parameters should be verified and refined during the compliance demonstration. Problems with continuous recording and automated recordkeeping systems should be eliminated. If you have followed a well-planned implementation program, you will have smooth-running control, monitoring, and recordkeeping systems in place.

Demonstrate Compliance – Compliance with the HON rule must be demonstrated to EPA shortly after the April 1997 deadline. This demonstration includes initial performance source testing, verification of continuous monitoring system performance, and the official start of routine monitoring and recordkeeping. The results of the compliance demonstration must be reported to EPA by Sept. 19, 1997.

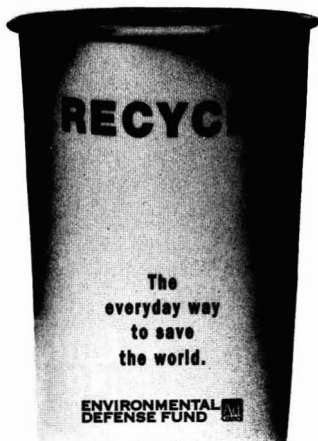
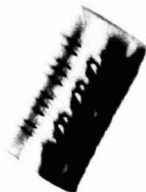
The HON rule requires continuous demonstration of compliance by issuing periodic reports. These include a summary of all continuous monitoring data, identification of periods when monitored parameters were outside allowable limits, periods when equipment malfunctioned (excursions) and documentation of any process changes affecting emissions. Six excursions will be excused in the first six months, but the excused exceedances will be reduced and regulatory enforcement will become more stringent during each succeeding semiannual period.

With the HON countdown underway, several things should be done now to assure orderly and timely compliance. First, identify key compliance and reporting deadlines for your facility – and schedule the compliance program around these key dates. Plan data collection and evaluation efforts to avoid a last-minute crunch when the implementation plan is due. Launch the HON compliance program now to make the best use of the limited time available and ensure a technically sound and cost-effective compliance strategy.

David Seifert is a senior air quality manager with ENSR, an environmental consulting, engineering and remediation firm.



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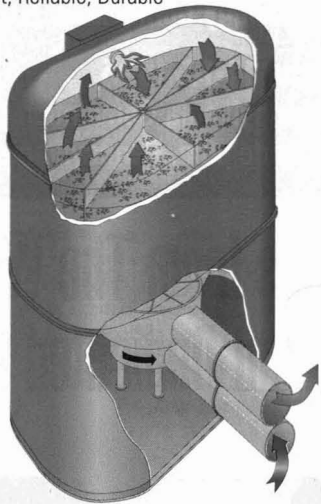
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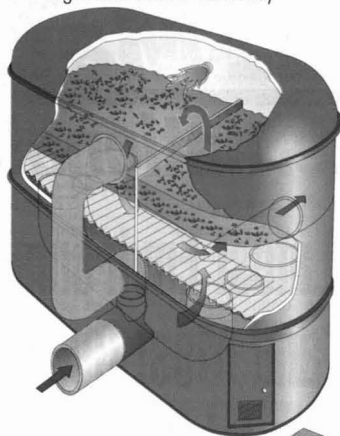
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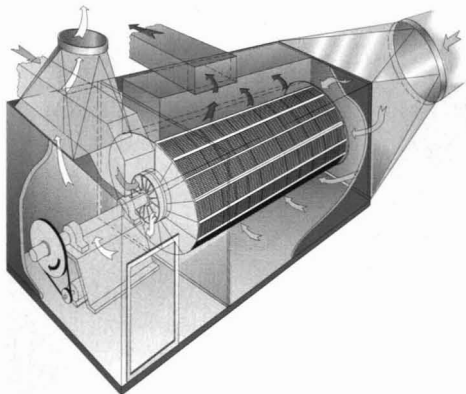


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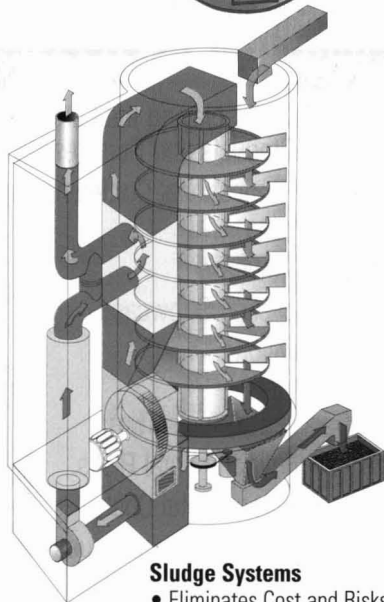


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continued from page 27

end of the decade just to comply with federal regulations already on the books.

In short, industry is no longer a lone voice crying for reform. And Congress is responding to a chorus of voices demanding a more rational economic approach to achieving environmental improvements. While polls continue to show that Americans want a clean and safe environment, they also show that that environmental issues no longer command the highest priority — as they did just three years ago. At the same time, doubt is growing about the efficacy of government's regulation of business. Now, a healthy majority believe such regulation may do more harm than good.

Flexibility Is Key

The forest and paper industry can achieve greater environmental improvements at less cost if freed from the constraints of the existing regulatory apparatus. That's why we support the effort to justify regulatory decisions on the basis of cost-benefit analyses, and to prioritize regula-

ry actions based on risk assessment. In testimony before the President's Commission on Risk, we urged that cost-benefit analysis be conducted early in the process to minimize waste, and that such analysis be subject to outside peer review. That's one way

to ensure that federal agencies will issue clear environmental standards based on sound science.

Flexibility is another vital component to any reform effort. Rather than prescribe specific technological approaches to meeting environmental standards, regulators should give industries like ours flexibility to comply at the least cost. My experience with federal suggests this is honored in the breach more than in practice.

Rather than prescribe specific technological approaches to meeting environmental standards, regulators should give industries like ours flexibility to comply at the least cost.

Cluster Rule Costs

Our experience with EPA's cluster rule, proposed last year for the pulp and paper industry's air and water releases, illustrates the growing despair with the regulatory status quo. We estimate that compliance costs for the water proposal alone would amount

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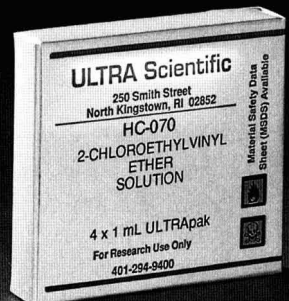
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Fugitive Emissions Monitoring

Building an Inspector-proof Program

By John Bacon



Photo by Rich LaSalle, Tony Stone Images

Petrochemical facilities are the first of many industries to face HON fugitive emissions monitoring requirements.

For industry participants who played a role in developing the HON rule – which entailed hundreds of meetings, thousands of hours of discussions and millions of words of proposed language – the final version was no mystery.

But for the rest of the regulated community, the April, 1994 rule resulted in controlled – and sometimes uncontrolled – panic. Chemical facilities classified as Phase 1, Group 1, those with the most toxic of 149 chemicals regulated under the rule, were required to be in compliance with fugitive emissions tracking requirements within six months of that date. They had to react immediately and were often forced to make decisions with limited knowledge.

Table A: Project Start-up Non-Labor Items - Costs

1. Database software program	\$ _____
Or Forms for manual system	\$ _____
2. Database hardware system	\$ _____
3. Data logging device	\$ _____
4. Gas monitoring hardware	\$ _____
5. Identification tags	\$ _____
6. Personnel safety equipment	\$ _____
7. Training for start-up personnel	\$ _____
8. Training for monitoring personnel	\$ _____

Source: Offspring Inc.

Chemical facilities that fall under Classification Groups two through five have had more time to plan their approach for complying with the rule. For these facilities, there isn't a better time than right now to start building for a successful and cost-effective fugitive emissions monitoring program.

Subpart H of the HON rule, which deals with fugitive emissions leaks from equipment, pipes, pumps and valves, is a daunting challenge. The amount of time and money required to identify, tag, record, report and repair 10,000 to as many as 100,000 fugitive emissions points can be an overpowering administrative burden for those not adequately prepared.

However, with a thorough understanding of the compliance requirements, good planning and preparation, fine-tuning and periodic auditing, facilities can rise to the compliance challenge planning and preparation.

The first step is to write a scope and estimated budget for the compliance program. While upper management has some idea of

continued on page 40

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Table B: Non Labor - Costs

Task	Cost Range
1	\$3,500 - \$35,000
or 1	\$500 - \$1,500
2	\$0 - \$8,000
3	\$3,000 - \$7,000
4	\$2,500 - \$12,000
5	\$0.10 - \$1.50
6	\$0 - \$500
7	\$100 - \$1,000+
8	\$100 - \$1,000+

continued from page 37

what is required, it is important to ensure that costs and compliance schedule are accounted for and communicated. Both the scope of the program and budget needed to fund it result from a step-by-step approach to the program.

Table A on page 37 shows some of the labor-related items that must be considered in preparing the program. By analyzing each element and the time required to complete a specific job, the implementation schedule can be determined. For each item in the table, a scenario for monitoring fugitive emissions should be worked out and approved before implementation.

By adding up the numbers and knowing the compliance date, the manpower requirements can be determined. If, for example, the time required to complete a point ranges from 10 to 30 minutes, the compliance date is six months away and there are 20,000 points to monitor, then between three and 12 people must be assigned full time to the monitoring task.

Documentation at this phase is essential to answer any future questions by either upper management or environmental inspectors. This is also the time to iron out any unexpected wrinkles in the monitoring plan. Examples of some common pitfalls to avoid: choosing bar-code tags to speed equipment monitoring, only to find that they must be installed in places where bar-code scanners cannot be used; leaving bar-code tags vulnerable to painters, making them unreadable; and determining that the monitoring task requires two people for safety reasons, which weakens the rationale for investing in bar-code equipment.

Table B (page 40) shows the non-labor costs involved with the project. The costs of each element vary depending on the particular situation and the needs of the facility or company. One of the items in this table is the cost of a data collection system. Should it be part of an integrated system or a stand-alone system? Many customers opt for a stand-alone solution. However, they then face difficulties sharing information with existing facility data systems that monitor equipment maintenance and repair schedules.

Another element identified in Table A is the vapor detector. EPA's Method 21 sampling specification is very detailed and specific – and hardware that does not meet those specifications or is improperly calibrated will negate all readings in the eyes of inspectors. Indeed, a device can be intrinsically safe for Class I, Division 2 service and still not meet the requirements for Class I, Division 1 atmospheres, which Method 21 requires.

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When the labor rates and man-hour requirements from Table A are multiplied together and added to the figures from Table B, a cost estimate for the project can be derived.

Implementation

In this phase the proper team of environmental management, technicians, maintenance and computer services must work together. Doing all the assigned tasks in the proper sequence – and staying on schedule – is the main challenge. Required information is often difficult to find. Physical tagging and planning of monitoring routes are modified to accommodate daily work schedules. Many pieces of equipment that must be tagged are also due for maintenance repair, so it makes sense to coordinate those activities. The data collection hardware and software, datalogger and monitoring devices must be tested and debugged. Technicians must be trained to calibrate monitoring devices and take readings.

Following implementation, time should be allotted to make adjustments to monitoring, data management and reporting procedures. Testing of the links, both electronic and personnel, to maintenance repair and central company databases should be performed and modified as needed.

Auditing

This is an often-neglected but vital step in the project. Ideally, at this point, monitoring is routine and reports and repair orders are being generated automatically. Now's the time to call for an independent audit of the emissions monitoring program – best done by a person or company not involved in developing the program.

The ideal auditor is one who has a thorough understanding of HON requirements, experience in industry or enforcement agencies and the ability to think like an environmental inspector. It is far less expensive to hire one to evaluate your program than to pay for violations during an EPA inspection.

Of course, the day will come when an EPA inspector is at the door to perform a compliance audit of your fugitive emissions monitoring program. If you've followed a carefully planned approach, your records and reports will be in order. Your technicians will be adept at calibrating instruments and performing emissions monitoring. Your equipment repairs will be up to date. And your facility will be in full compliance.

John Bacon is president of Offspring, a Pittsburgh consulting firm that provides compliance training and emissions auditing.



VOC testing at a printing facility using EPA Method 18.

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Fugitive Emissions Monitoring Project Worksheet – Time Estimates

1. Thoroughly understand the record keeping and reporting sections of the HON. ____ hours
2. Identify the source and its boundaries. Document on a plot plan. ____ hours
3. Identify the processes and associated chemicals (primary, co-product or by-product) which require monitoring by Groups (I-V). Document on plot plans, material balances, P&IDs. ____ hours
4. Determine if any existing documentation needs to be upgraded to current status. ____ hours
5. Determine method of record keeping (manual, computerized, local, integrated). ____ hours
6. Evaluate and select reporting software. ____ hours
7. Determine method for data collection (one or more people, manual log entry, computerized data log entry, bar code reader, key card reader, magnetic strip reader). ____ hours
8. Set up software program shell in (existing or new) computer hardware system. ____ hours
9. Select measuring hardware. ____ hours
10. Determine what tags will be used (metal embossed, metal raised, plastic embossed, plastic bar code, metal bar code, plastic magnetic stripe, plastic key card, metal key card, paper, cloth, metal wire ties, plastic wire ties). ____ hours
11. Determine by category (pump, valve, connector, etc.) how many and the location of the tags. ____ hours
12. Determine and document by category (pump, valve, connector, etc.) the exact procedure and number of readings required to monitor all potential leak points. ____ hours
13. For each category, print out blank monitoring data sheets and identify and record for the database, all devices to be monitored. Write down tag number, device type and all other data available that is required by the database (manufacturer, size, type, model, serial number, etc.) ____ minutes per device
14. Attach tag to device. ____ minutes per device
15. For each category, print out blank monitoring data sheets and identify and record for database all devices that are excluded from monitoring and the reason they are excluded (unsafe to monitor, insulated in a manner to prevent access, obstructed by equipment or piping, glass or glass lined, etc.) ____ minutes per device
16. Enter information into the database (manual or computerized) which was obtained during the survey. Supplement with information from maintenance and operation files as required. ____ minutes per device
17. Review database information for correctness and completeness. ____ minutes per device
18. Set up the monitoring program track and data gathering log sheets (or data logger program) to maximize the productivity of the periodic monitor. ____ minutes per device
19. Run an initial screening value and record for all devices. ____ minutes per device
20. Make first attempt to repair on connectors (tighten bolts). ____ minutes per device
21. Run a second screening value and record for devices after first attempt to repair. ____ minutes per device
22. Tag all devices that are leaking after first attempt to repair. ____ minutes per device
23. Enter data into recording and reporting programs. Run programs and issue repair order for leaking devices. ____ minutes per device
24. Issue a complete screening report. ____ hours
25. Review report and set up all documentation to comply with EPA recordkeeping requirements. ____ hours
26. Conduct a complete simulated audit of you program before the EPA. ____ days

Time Guidelines

Task	Average Time Range	Task	Average Time Range
1	1-41	14	1-2
2	1-20	15	2-5
3	1-40	16	1-5
4	1-4, 4-400	17	1
5	1-4	18	1
6	1-8	19	2-3
7	1-4	20	0-5
8	8-24	21	0-3
9	1-4	22	2-3
10	1-4	23	0-1
11	1-4	24	1-4
12	2-16	25	1-16
13	2-5	26	1-5



Regulatory Reform

continued from page 35

to \$11.5 billion, more than our industry's entire net earnings over the past four years. And despite this enormous tab, measurable improvements in water quality would be insignificant beyond the gains from our recommended approach – which would cost \$1 billion.

Dramatic Expenditure

Over the past several years, about 20 percent of total pulp and paper industry earnings has been spent on environmental regulations – a percentage that will increase significantly over the next decade.

These environmental outlays are on top of the approximately \$15 billion we will have invested this decade in facilities to satisfy public demands for more paper recycling.

Given the enormous outlays required simply to remain competitive in this industry, let alone the capital needed to build recycling facilities, the problems posed by rising real environmental expenditures become dramatically apparent.

Whereas a local municipality records the impact of its environmental expenditures by the money unavailable for other social needs – prenatal care for poor people, for example – industry assesses the impact of environmental expenditures in terms of dollars diverted from productivity improvements and capacity expansion.

These opportunity costs are obviously offset by any significant gains in human health or environmental improvement. But these costs are unconscionable when they result in few or no benefits to human health or the environment. This threshold determination cannot be made without proper cost-benefit analyses performed at the outset – and this cannot be done without thoughtful regulatory reform.

W. Henson Moore is the new president of the American Forest and Paper Association, which represents some 550 companies in the pulp and paper industry. Moore served as deputy secretary of the Department of Energy and White House deputy chief of staff under the Bush administration.



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Incentives, Insurance Options Spur 'Brownfield' Redevelopment

Federal and state incentives seek to entice industry to revamp abandoned urban industrial sites – and new liability protections are helping sweeten the deal.

By Robert P. Hallenbeck

As the economy continues to rebound, many companies have begun once again to weigh options for expanding their operations. And city and state governments are eager to support their business community in that effort. But many local governments are also aware of the need to find buyers for abandoned commercial and industrial property tainted by past contamination – and its accompanying liability legacy.

Until recently, redevelopment of such sites – so-called "brownfields" – has been virtually nonexistent as a result of the accompanying regulatory minefield: joint, strict and several liability, burdensome cleanup standards and lender liability put financing out of reach for many prospective buyers. Those disincentives have yielded a blight of abandoned factories and vacant, weed-strewn lots – often in the heart of many urban downtowns.

However, as a result of innovative actions by city, state and federal legislatures, the disincentives are beginning to evaporate, and industry stands to benefit greatly from acquiring and redeveloping brownfield sites.

Voluntary approaches

State and federal governments are taking on a wider role in the initiative to reclaim contaminated real estate. Two incentive-based programs, voluntary cleanup and industrial reuse incentives, are emerging as key tools to attract brownfield buyers.

Voluntary cleanup programs directly address problems posed by contaminated industrial sites by eliminating many of the procedural and economic stumbling blocks that otherwise might exist. The goal is to encourage companies to clean up sites that would otherwise remain contaminated and unused.

Twenty states enacted voluntary cleanup programs through legislation or regulatory

actions in 1994. Twelve more are expected to consider the issue this year. The best of these programs provide clear cleanup guidelines, state agency oversight, review and sign-off for parties who voluntarily clean up a contaminated brownfield. The reward for those willing to redevelop the sites comes in the form of guarantees against future environmental liabilities.

Reuse incentive programs seek to spur redevelopment of existing industrial sites by providing release from past and future environmental liability, relaxing existing cleanup standards, allowing exemptions from liability for land secured by municipalities and transferring municipal immunity to the property's new purchaser.

Most state programs also include tax abatement or other financing incentives that mitigate cleanup costs. And some states have established grant or loan programs that will pay for environmental assessments of sites, or even for site cleanup itself.

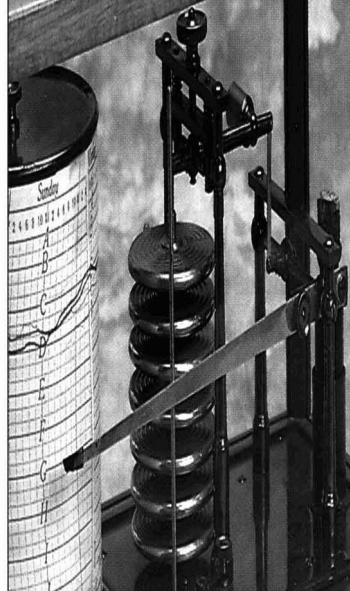
Superfund reform, certain to be revisited in the 104th Congress, could provide additional incentives for brownfield redevelopment. Meanwhile, the EPA has established a pilot program that provides grant money to state and local governments and private parties that seek to clean up brownfields. While it is only in an embryonic stage, the partnering concept used by the agency could prove a model for future incentive efforts.

New Insurance Options

How can a corporation protect itself from potential liability if it decides to acquire and redevelop a brownfield site? An increasingly sophisticated insurance market has made significant strides as of late in addressing the insurability of property with pre-existing contamination.

continued on page 74

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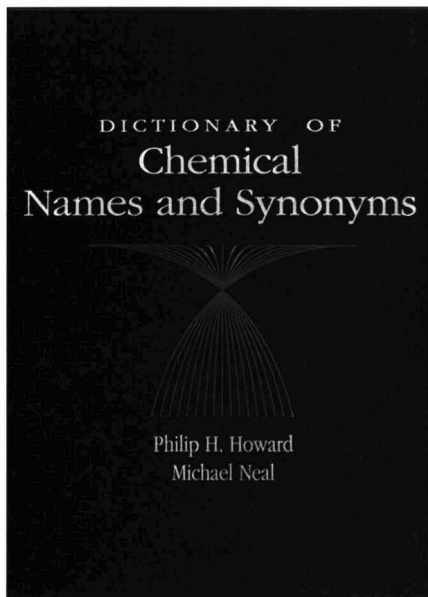
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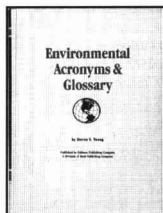
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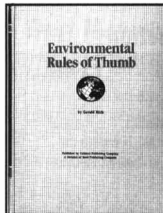


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Zero Discharge

More Than a Pipe Dream?

By Edmund A. Kobylinski, Amy Shanker and Robert A. Hulsey

More industries are finding reason to minimize their wastewater emissions – and in some cases eliminate them altogether. But discharge rules based on pollutant concentrations can complicate efforts to squelch wastewater emissions.

For years, zero discharge has been a pipe dream for industry and regulators alike. But in their quest to stay cost-competitive, many industries are realizing that wastewater reuse and recycling can save money. And in some cases, total wastewater recycling – zero discharge – is becoming both achievable and economical. After all, why discharge wastewater that may be of higher quality than the water used in your facility?

Regulatory Hurdles

Water quality standards limit the concentration of a pollutant in a receiving stream. Whether they be EPA or individual state standards, they are based on the flow and size of a receiving stream, the designated use of the stream and existing ambient water quality.

These standards, in turn, help determine NPDES permit limits for dischargers. A discharge limit for a pollutant in an effluent is strongly influenced by the allowable dilution in the receiving stream. For example, discharge limits for metals into large rivers like the Mississippi and the Ohio are typically much higher than metals limits for small tributaries.

Wastewater reuse has traditionally been most practical in arid climates where availability and cost have been an issue. Now, with water quality the key issue, wastewater reuse may prove practical even in water-rich regions. And depending on the size of the receiving stream, reuse may actually help an industry meet their discharge limits.

continued on page 57

Table 1. Comparison of Drinking and Ambient Water Quality Standards

Contaminant	Drinking Water Standard, g/L	Water Quality Standard	
		Human Health, g/L	Freshwater Chronic, g/L
Lead	15		3.2
Copper	1,300		12
Mercury	2	6.14	0.012
Silver	50		0.12
Zinc	5,000		110
PCBs	0.5	0.000044	0.014
Benzene	5	1.2	5,300
Toluene	1,000	6,800	0.013
Endrin	2	0.0023	6.76
Cyanide	200	700	5.2

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continued from page 55

Because many water quality standards are "in-stream" standards, it is the blend of receiving stream quality and treated wastewater that determines compliance. If the receiving stream quality is high, discharge limits might reflect the capacity of the stream to assimilate a pollutant load, or may be determined by the need to protect and maintain that quality for a particular designated use. Discharge limits are likely to be more stringent for receiving waters used for recreation or public drinking water supply than for waters that are used primarily for navigation.

Discharge Considerations

Allowable mixing zones are determined by state policy and are typically based on the lowest seven-day average flow for a 10-year return period. If a stream is intermittent, a wastewater discharge has the potential to be a substantial portion (or all) of the flow. In this case, discharge limits may be equal to water quality standards.

Stream characteristics will influence an

industry's decision about where to discharge. Say a facility can choose between two streams, one that is 100 yards away and

Many industries are trapped in a regulatory Catch 22: reducing water use is the desired objective, but it results in more concentrated discharges that violate pretreatment standards.

another a mile away. Both rely on the same seven-day average flow equation. If the background concentration of metals is higher in the nearby stream, it will have more stringent discharge limits than the more distant stream. As a result, it may be more eco-

nomical to pipe wastewater the extra mile.

Table 1 provides a comparison of selected ambient water quality and drinking water standards. Many water quality standards are an order of magnitude lower than drinking water standards. It is clear from this comparison that drinking water may not be acceptable for direct discharge.

Industries that do not discharge directly to a receiving stream but to the local publicly owned treatment works (POTW) are also affected. The POTW effluent must meet the facility's NPDES permit, which requires compliance with water quality standards and the new municipal sludge regulations. Requirements for pretreatment by industry are calculated based on the ability of the POTW to remove specific pollutants regulated by its NPDES permit. If the POTW discharges to a small stream, pretreatment requirements will probably be greater.

A thorough evaluation of the benefits of reuse must consider the efficiency of water use, the type of discharge limits that apply and the specific constituents of the wastewater.

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New regulations are increasing the cost of potable water. Thus, a facility must determine whether potable water is necessary for its process, or whether a lower quality water source can be used. In the production process, can wastewater from one area be used as makeup water in another? And will wastewater reuse reduce wastewater treatment costs?

Differing and sometimes contradictory discharge goals must also be weighed. For example, industries that discharge to a

POTW usually have concentration-based pretreatment limits – and reducing the volume of wastewater discharged will increase pollutant concentrations. Many industries are trapped in this regulatory Catch 22: reducing water use is the desired objective, but it results in more concentrated discharges that violate pretreatment standards. And facilities can't simply discontinue their recycle/reuse efforts for fear that it will be perceived as an effort to substitute dilution for pretreatment. This potential dilemma makes

it essential for facilities to examine the consequences of recycle/reuse on effluent quality before initiating a water conservation project.

Regulatory authorities have acknowledged this problem. Indeed, EPA is encouraging pretreatment authorities to base permits for significant industrial users on mass instead of concentration. A mass-based permit allows industry more flexibility to reduce water use because volume alone does not determine pollutant discharge load. For direct dischargers, most NPDES permits include mass-based discharge limits.

Industry has embraced pollution prevention as an effective means of reducing the costs of hazardous waste disposal. The same concepts should be applied to evaluating and reducing water use. To meet requirements for quick compliance with expanding regulations, facilities should prepare a long-term plan for water use that ultimately includes total reuse or zero discharge. The plan should identify milestones or discharge limit thresholds at which it becomes economical to implement the next reuse project.

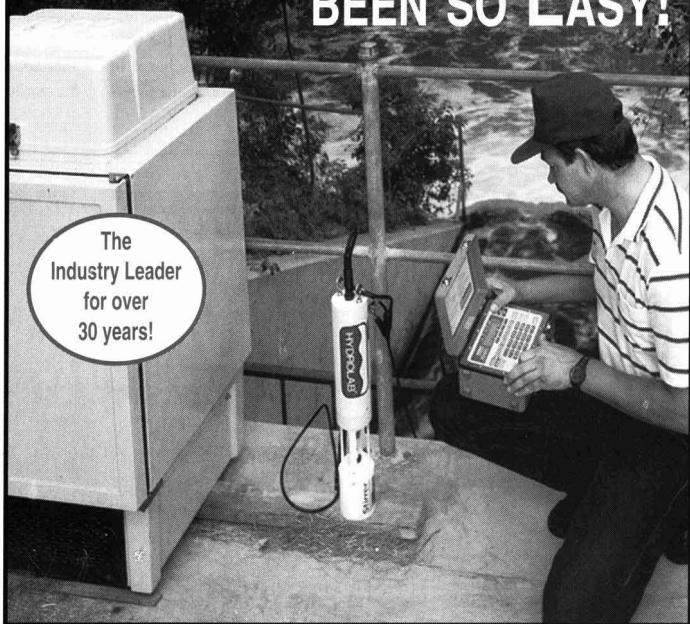
General Electric is one company that has successfully used long-term wastewater reuse planning at several of its facilities. Their project in Peebles, Ohio will use a constructed wetlands to treat stormwater and process wastewater discharges at a jet engine test facility. The facility will then reuse the wetlands effluent to complete the zero discharge loop.

Another example: a computer chip manufacturer in Arizona that is using advanced treatment technologies to produce a wastewater suitable for aquifer recharge.

Incorporating water quality standards into discharge permits is changing the way industries manage wastewater. The cost of wastewater treatment is increasing because of these new limits, making recycle/reuse an attractive, economical alternative. And further regulatory changes are afoot. For example, national sediment standards are being developed – and EPA is considering a requirement for stream bioassays to measure the health of the aquatic environment. Industry must rise to the challenge to find an economical way to comply with environmental regulations. Zero discharge is no longer a pipe dream – for some industries, it is becoming a practical solution.

Edmund A. Kobylinski, a process design engineer with Black & Veatch, Kansas City, Mo., specializes in developing treatment systems for industrial wastewaters.

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Fluorescent Light Bulbs – Energy Saver or Environmental Hazard?

By Steven M. Christenson

Businesses and homeowners have installed millions of fluorescent light bulbs in buildings around the country in the last few decades. Because fluorescent light bulbs are energy efficient and save electricity, environmentalists and governmental officials — including U.S. EPA — have promoted their use. Yet, fluorescent bulbs raise environmental concerns of their own. When these bulbs burn out, environmental and facility managers face complex issues about whether the old bulbs are regulated as hazardous waste.

Environmental Trade-offs

Fluorescent lamps and high-intensity discharge (HID) lamps contain small amounts of mercury, lead, and sometimes cadmium. Indeed, fluorescent lamps are the second largest source of mercury in household and commercial garbage, after batteries. When fluorescent lamps break or are disposed of in a landfill or incinerator, mercury can contaminate air, surface water, and groundwater.

Compared to incandescent lighting, however, fluorescent and HID lamps can significantly decrease electricity consumption and save money in the process.

With lower electricity demand, coal-burning power plants can reduce emissions of air pollutants such as mercury, lead, nitrogen oxides, and sulfur dioxide. Because of their efficiency benefits, fluorescent and HID bulbs are championed by EPA's Green Lights program — and the business community has responded favorably to the agency's voluntary initiative.

The effort to promote energy efficiency extends all the way to the United Nations, where a project sponsored by the United Nations Environment Program's Global Environment Facility is providing \$10 million to replace incandescent light bulbs with fluorescent lamps in Monterrey and Guadalajara, Mexico.

Hazardous or not?

When fluorescent and HID lamps burn out, people have routinely thrown these bulbs out with ordinary trash. However, the EPA has determined that many fluorescent and HID lamps are "hazardous wastes" under the Toxicity Characteristic Leaching Procedure test method adopted by U.S. EPA in 1990. Nonetheless, the widespread use of fluorescent light bulbs has caused confusion about whether burned out bulbs must comply with the RCRA hazardous waste re-

quirements.

Last July, EPA proposed two alternative approaches for managing mercury-containing lamps. Under one approach, EPA would exclude mercury-containing lamps from hazardous waste management requirements if they are disposed in permitted municipal landfills or recycled by permitted reclamation facilities. As an alternative, EPA may include mercury-containing lamps in the universal waste stream proposal (58 Fed. Reg. 8102, Feb. 11, 1993), which would create a streamlined regulatory structure for certain other widely generated wastes such as batteries. A final rule is expected in summer 1995.

State Policies Vary

While the EPA evaluates this issue, some states have adopted guidance on bulb management. For example, Wisconsin Department of Natural Resources guidelines prohibit businesses from disposing of waste lamps that contain mercury in landfills. At the same time, they suggest that these lamps may be recycled without strictly following hazardous waste regulations — although compliance with hazardous waste manifesting requirements is encouraged.

In California, an interim policy allows a generator to dispose up to 25 spent lamps per day as nonhazardous wastes. Minnesota has banned the disposal of fluorescent lamps in solid waste for both businesses and households, but allows for recycling without strict RCRA compliance so long as no more than 1,000 four-foot fluorescent lamps are removed per year.

Future liability?

While fluorescent and HID light bulbs can provide savings on electrical usage, these lamps also raise disposal issues that should not be ignored. RCRA hazardous waste violations may be enforced by civil penalties of \$25,000 per day as well as criminal penalties. Moreover, disposal of lamps that contain hazardous substances may lead to Superfund liability if environmental damage is discovered in the future at the disposal site. As a result, a proactive approach to fluorescent bulb management can reduce your risk exposure even in states that do not currently mandate recycling of mercury-containing light bulbs.

Steven M. Christenson is an environmental lawyer with Dorsey & Whitney in Minneapolis.

Waste Determination A New Use for MSDS

By Jon Seveney

Each year, companies spend many thousands of dollars in laboratory fees trying to determine if their wastes contain hazardous constituents. The way in which a company's hazardous waste is classified under RCRA sets the stage for determining the legal methods available for treatment, storage and disposal. Many companies that do not generate much hazardous waste and are inexperienced in waste identification and disposal automatically assume they must send a sample to a lab for some mysterious testing. Generally, a toxicity characteristic leaching procedure (TCLP) is the standard analytical practice and, depending on test specifics, a full TCLP analysis can run about \$1,500. Many companies pay those big dollars for testing because they have been advised to by a disposal facility or consultant.

TCLP Alternative

What many waste generators don't realize is that Material Safety Data Sheets they maintain for hazardous materials at their facility are an invaluable tool for identifying wastes. In many cases, an MSDS can be substituted for analytical data, avoiding the costs associated with TCLP testing. Material safety data sheets can greatly help in determining if the wastes are truly hazardous – and identify potentially hazardous constituents as well.

Under OSHA's hazard communication standard, businesses handling hazardous materials are required to maintain MSDSs for those materials. These sheets contain a wealth of information about the material and its chemical properties. Their purpose is to communicate health and safety information to those individuals who come into contact with their hazardous contents. This includes warehouse, storage and manufacturing personnel, transporters, vendors, contractors and most importantly, emergency responders.

One drawback, however, is that MSDS forms do not follow a standard format. OSHA's recommended format is most widely used and typically divided into eight sections, including Supplier's Information, Physical/Chemical Characteristics, Health and Hazard Data and Precautions for Safe Handling and Use. Most MSDSs are developed and prepared by manufacturers, and because of the vast number of manufacturers and marketers of hazardous materials, some MSDSs are better than others.

A good MSDS will contain detailed information identifying the concentration levels of hazardous constituents in a substance along with other valuable data such as flash and boiling points, toxicity levels, densities, pH ranges, compatibility information and chemical names. It will also contain an Environmental Data section which provides guidance in determining if a waste has the potential for being hazardous.

Should the chemical become a waste, the Environmental Data section

Material Safety Data Sheets can provide cost-saving guidance in determining whether contaminated soil or other media must be treated as hazardous.

would be a good resource to find out RCRA listed waste codes, Department of Transportation shipping names, packaging requirements, label and placarding information. This data is useful when it's time to document waste information on a disposal facility's waste profile application.

These applications, required by disposal facilities, can be lengthy and complicated. Incinerator, fuel blending and landfill facilities ask for detailed information prior to accepting any waste stream to guard against their liability.

For the infrequent waste generator, the Environmental Data section gives a start in the right direction. Details not covered by this section can be obtained from MSDS-listed contacts.

Many treatment, storage and disposal facilities will allow an MSDS to be used in place of analytical data as long as the generator has the ability to apply a reasonable amount of process knowledge about the nature and process generating the waste. The use of MSDSs and process knowledge is completely within the boundaries of the law.

Consultants, laboratories and disposal facilities are not responsible for waste determination. Rather, the generator, and only the generator, is responsible for this determination.

A Word of Caution

Keep in mind that the advice you get on waste disposal and analysis is just that—only advice. The generator has the final say about how his specific waste streams are classified, profiled and treated. Waste treatment and disposal is an expensive process and the generator does have some control over the price and service.

Another important point to consider: the information provided on an MSDS will only help communicate the hazards of a material or substance. An MSDS will not tell a generator whether he has a hazardous waste. But MSDSs become useful tools when they allow generators to avoid lab testing in characterizing a waste.

For example, a chemical spill of benzene and toluene takes place and contaminates some soil. The first step is to identify the specific chemicals released and obtain the

appropriate MSDSs for the materials contained in the waste. Next, ensure no other chemical constituents have been introduced into the soil. Lastly, if a generator is reasonably sure the benzene and toluene concentration levels in the volume of soil are high, he should identify the appropriate RCRA and state listed waste codes in conjunction with the treatment, storage and disposal's waste profile application. When submitting a waste profile, copies of the MSDSs should be included. Formal testing may not be needed because the data in the MSDS is accurate.

Discuss the use of MSDSs with your treatment, storage and disposal facility representative. Everyone involved should know your requirements and expectations. Good communication and documentation can save much time and frustration, especially when the generator carries cradle-to-grave responsibility for the waste.

Jon Seveney, an environmental analyst for Shell Oil Co. in Oak Brook, Ill., is the hazardous waste coordinator for the company's eastern transportation region, serving about 40 light oil terminals in 26 states.

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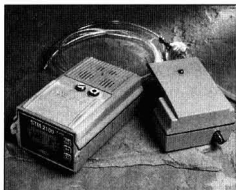
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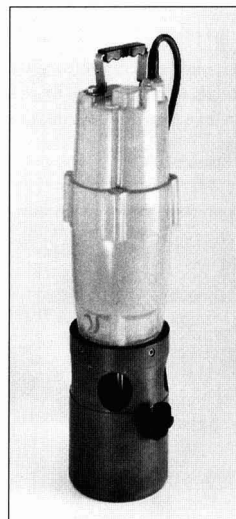
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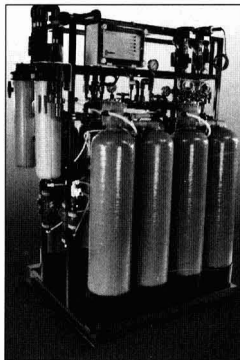
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Kinetico Engineered Systems
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Metering Pump Brochure

A new reference brochure illustrates how its extensive line of metering pumps handle a variety of chemical feed requirements. The brochure features hydraulically-actuated diaphragm metering pumps such as the Series 43-100 CHEM-FRAM. Mechanically- and solenoid-actuated diaphragm metering pumps are also featured.

Wallace & Tiernan
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Water Systems Tanks

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hazardous materials that contaminate drinking water. The non-metallic design and composite-construction assembly provide a long-lasting, completely corrosion-proof system.

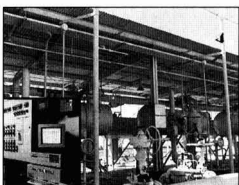
WellMate
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Vapor Indicator

The new MicroFID from Photovac provides environmental professionals with a multi-application instrument for sub-PPM to percent level measurement of a wide range of hazardous gases and vapors. New data management allows start-to-finish compliance with EPA Method 21 Fugitive Emissions Monitoring (LDAR). The unit includes a field-replaceable battery pack, 10 Calibration memories, and programmable Response Factors.

Photovac
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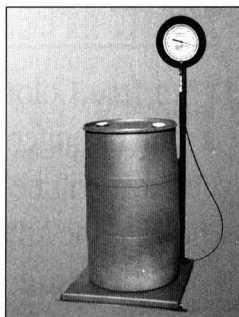
Tracer Research
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Bag Liners

A new line of disposable bag liners for roll-offs and dump trailers is available from Packaging Research and Design. The lower cost "E" bag liner employs the patented triple thickness leak protection. Each liner has a bottom width of 92 to 96 inches and a height of 144 inches.

Packaging Research and Design
Circle 67 on card



Weight Measurement

A new scale from Force Flow Equipment helps control chemical usage in chemical feed systems. The low, 2 inch height of the Drumm-Scale allows chemical drums to be easily rolled on and off of the scale. Drumm-Scale features stainless or epoxy-coated platforms, uses no electrical power, and is covered by a five year warranty.

Force Flow Equipment
Circle 68 on card

Fluid Level Monitor

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Magne-Sonics
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Industry-Tough Computers

A new line of rack-mountable IBM-compatible computers are designed for harsh industrial environments. The IPC-1200 series, designed for EIA RS-310C 19-inch rack mount applications, are built to withstand shock, vibration, dust and a wide range of operating temperatures. The computer's chassis is positively pressurized using filtered air to prevent dust contamination.

OMEGA
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Hazmat Storage

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Haz Safe
Circle 71 on card



Pump Brochure

A new brochure, "Pumps for Industry," presents an extensive line of self-priming centrifugal, standard centrifugal, submersible and diaphragm pumps, available to meet the exacting requirements of a wide variety of demanding industrial applications. On-site photographs illustrate the versatility of the various pump lines. Other applications pictured include pumps handling corrosive copper mine water and coal mines.

The Gorman-Rupp Company
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Transportation Software

The CHEMTOX Transportation System is a new Windows-based management tool that automates the tasks required under DOT's HM-181 regulations. Operating as a companion to the CHEMTOX database of more than 10,000 regulated chemicals, the CHEMTOX Transportation System creates a bill of lading for handling and shipping regulated and non-regulated materials. It can operate on

an individual PC or on a network using client/server applications.

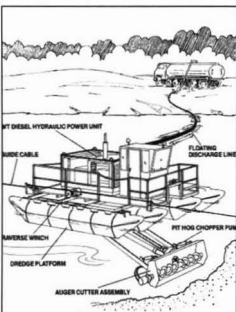
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Pilot System

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LCI Corp.
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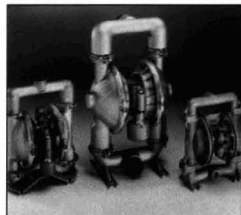
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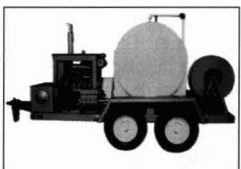
Lutz Pumps
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Monitoring Software

SARATrax monitors hazmat information, tracks and monitors chemicals, materials and process operations and generates regulatory report information. MSDSs are tracked and printed based on inventory, Threshold Planning Quantity and fugitive emissions. SARATrax also includes ClassTrax, which records employee training and OSHA requirements.

Wixel
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Pump Catalog

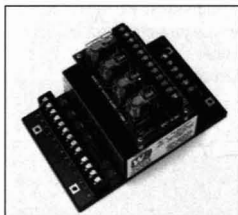
A new 28-page illustrated catalog features valveless metering pumps, dispensers and accessories. These piston-type positive displacement pumps feature low-dead volume, better than 0.1 percent repeat accuracy, flows up to 2400ml/min and pressures to 100 psig. The catalog details prices and ordering information as well as technical specifications.

Fluid Metering, Inc.

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Fluid Level Control

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Warrick Controls

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Ammonia Sensor

A new model ammonia gas sensor from Sierra Monitor Corporation provides an industry standard linear 4-20 mA signal of Ammonia gas concentration with a range of 0-50 PPM NH(sub 3). The Model 4101-25 provides accurate measurement in the low PPM range and features the field proven, reliable electrochemical sensor design, and self-diagnostics.

Sierra Monitor

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Drum Pallets

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movable non-slip floor gratings for sump inspection and cleaning. Corrosion resistant coatings and enclosed forklift openings make the Safe-T-Pallets durable and portable.

Safety Storage

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VOC Destruction

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Epcor Industrial Systems

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Mist Eliminator Data

Tex Mesh mist eliminators are available in a wide range of materials to suit specific processes including absorption, distillation, air and gas scrubbing, oil mist separation, effluent gas treatment and pollution rectification. A four-page technical bulletin in now available to outline performance data and assist in the selection and sizing of metal, polymeric and co-knitted

or multifilament mesh pads.

Amistoc

Circle 85 on card



Chemical I.D. Kit

A new chemical identification kit is now available for emergency response teams. The HazCat Kit provides on-site identification of virtually any spilled or abandoned liquid or solid. The kit comes in an easy-to-carry, impact resistant ABS plastic case. "Hands-on" classes are offered to train workers on the proper use of the HazCat Kit.

Sensidyne/Haztech

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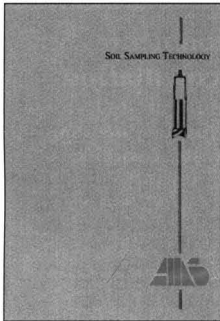
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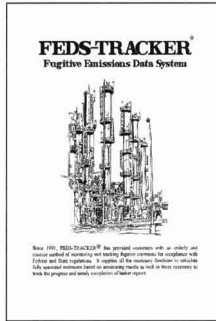
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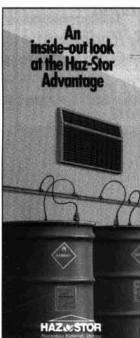
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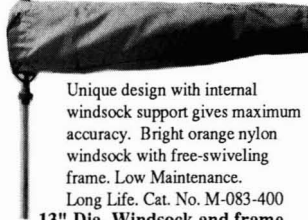
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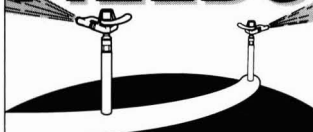


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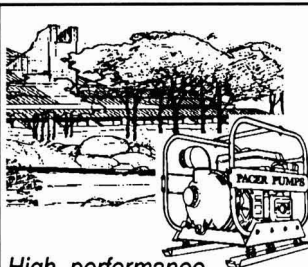
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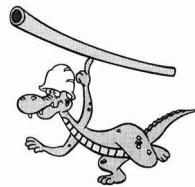
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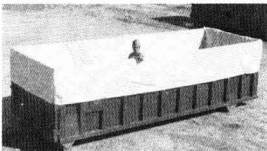
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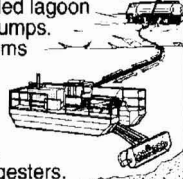
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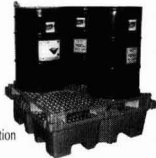
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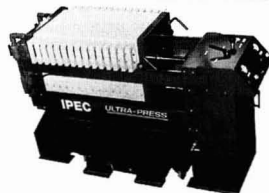
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Insurance

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Today, market nich environmental insurance underwriters are offering a variety of available risk management and insurance products addressing brownfield exposure by determining the cost of cleanup, remediation and future potential risks.

Currently, insurance is available to both large and small companies that covers the toughest environmental exposures - known or unknown. While most standard pollution policies exclude known contamination, environmental underwriters are more willing to combine traditional insurance products with other mechanisms such as collateralized fronts and captives to give the purchaser a cost-effective way to handle the exposure.

Unlike traditional underwriting, which relies heavily on the financial make-up of the insured, underwriting environmental risk requires an equal emphasis on financial analysis, detailed loss control and aggressive claims supervision. In order to benefit the brownfield developer, purchaser or insured and, at the same time, protect the insurer against catastrophic exposures, these areas are fully integrated into the underwriting

process - from the initial proposal through the policy term to expiration, and sometimes beyond.

The most common insurance policy used in today's market to address existing contamination is the Pollution and Remediation

*Since public concern
over a site's safety
often increases when a
remediation action is
undertaken, the value of
third-party coverage
cannot be understated.*

Legal Liability policy. This policy provides a site owner or a party with an insurable interest with a stop-loss provision to limit on-site cleanup costs. It also protects the insured against third-party bodily injury and property damage.

The PARLL policy offers several benefits to the purchaser or developer of a brownfield. First, the stop-loss mechanism limits the policyholder's cleanup expenses resulting from remediation. The third-party coverage protects the insured from potential third-party bodily injury claims - including costs for legal defense. Since public concern over a site's safety often increases when a remediation action is undertaken, the value of this coverage cannot be understated.

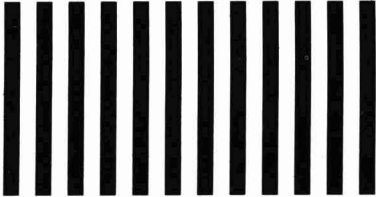
Another benefit: after the remediation is complete, the PARLL policy can be transferred to the new owner. This ensures that future claims arising from an incomplete cleanup or other unknown conditions at the site are covered - and provides an extra measure of liability relief for brownfield developers.

The unique partnerships that have begun to develop between government and industry, together with innovative solutions from the insurance market, are combining to allow redevelopment of these valuable relics of our industrial heritage.

Bob Hallenbeck is director of government affairs of ECS Underwriting, Exton, Pa.



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- Z Other (please specify) _____

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- C 50-99
- D 100-249
- E 250-499
- F 500-999
- G 1000-1499
- H 1500-2499
- I 2500 and up

4. In your job function do you recommend, specify or purchase? (check all that apply):

- A Pollution Control Equipment
- B Instrumentation
- C Chemicals
- D Parts & equipment for maintenance operation and control
- E Services/Consulting
- F None of the above _____ (please specify)

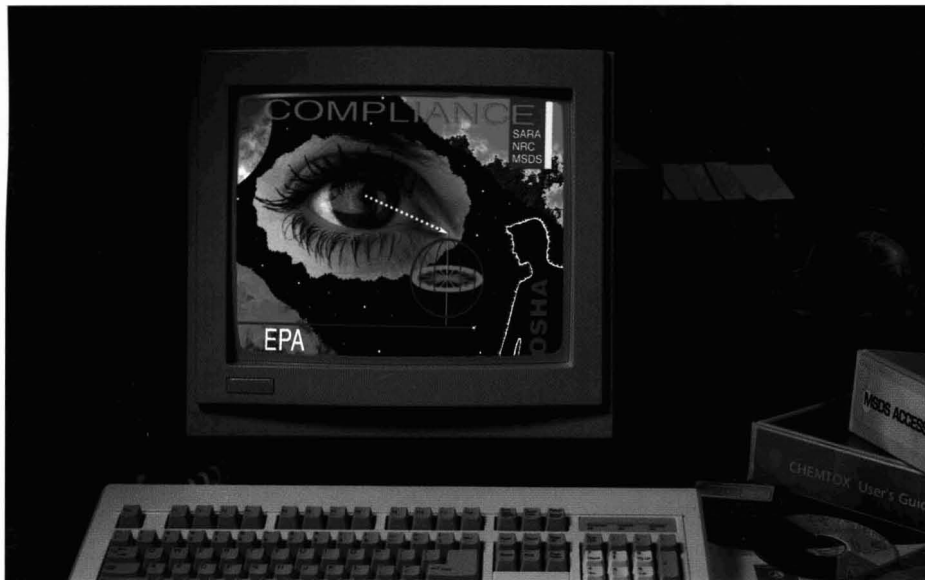
5. What types of Pollution Control are you responsible for? (check all that apply):

- A Air
- C Noise
- D Solid waste disposal
- E Industrial hygiene
- F Toxic & hazardous material
- G Energy control/energy conservation
- H None of the above _____ (please specify)

6. Which of the following publications do you receive personally addressed to you? (check all that apply):

- A Pollution Engineering
- B Environment Today
- C Hazmat World
- D Pollution Equipment News
- E The National Environmental Journal
- F Water Environment & Technology
- G None of the above _____ (please specify)

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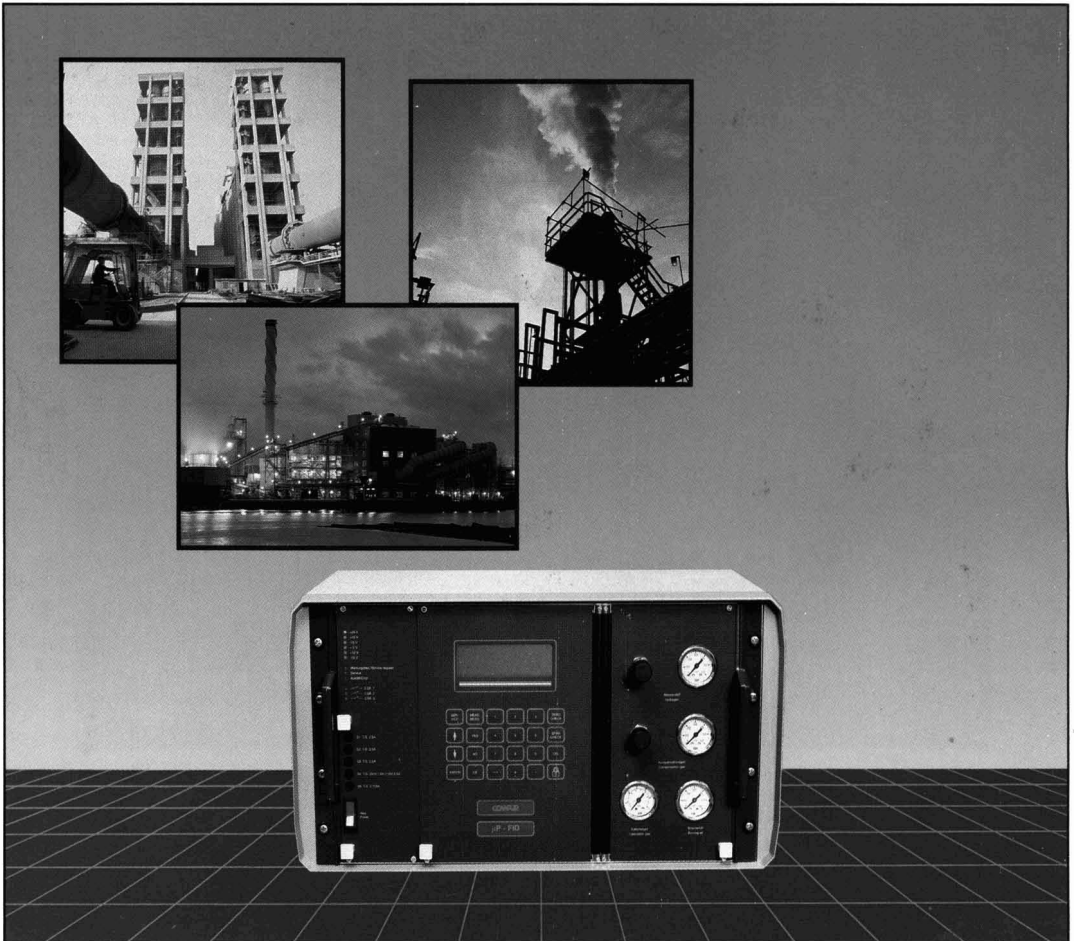
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