

Government Administration split on clean air changes

The Nixon Administration, as promised, has proposed a package of amendments to the Clean Air Act requirements, saying the changes are needed to help meet the nation's energy problems.

As expected, the proposals have sparked controversy not only among the White House, Congress, and environmentalists, but also within the Administration. Environmental Protection Agency Administrator Russell E. Train has sent signals that he takes a decidedly different view of two of the Administration's key proposals. These proposals call for some degradation of currently pristine air and allow use of intermittent or alternative control strategies rather than permanent controls such as low-sulfur fuels or scrubbing technology for power plant emissions. He may either oppose both or offer different options in Congressional testimony. "EPA does not support proposals in these areas," Mr. Train says, "other agencies feel strongly that legislation is needed, and we agree that these matters represent issues that should be examined by Congress."

EPA notes that other agencies feel that indefinite use of intermittent control systems will be "significantly cheaper, use less energy, and result in less solid wastes than some stack gas cleaning technology." On the other hand, EPA believes that "sulfates formed from sulfur dioxide emissions are causing public health problems now, that permanent controls will be necessary to protect public health in the future, and that costs could be greater in the long run should new requirements to deal with sulfates force expensive retrofits."

The Administration's proposal on



Train: Congress should examine issues

nondegradation of clean air would "remove the authority of the Federal Government to promulgate standards more stringent than those set to protect public health or welfare," EPA says. In essence, the Administration proposal would negate a court order that required EPA to prevent "significant deterioration" of the nation's air quality. The U.S. District Court for the District of Columbia ruled that allowing states to permit deterioration of clean air is "contrary to the legislative policy" of the Clean Air Act. It ordered EPA to issue new rules to prevent "significant deterioration" of air quality.

EPA then developed four alternative sets of regulations to prevent clean air from getting dirty. EPA proposals required use of "best available" control technology for 16 categories of air pollution sources including sulfuric acid plants, petroleum refineries, and any other stationary sources that emit more than 4000 tons per year of any pollutant covered by national standards.

Under other provisions of the Administration's amendments to the Clean Air Act:

- The President could require plants to burn coal rather than oil or gas until 1980, provided health-based standards are maintained.

- EPA could temporarily suspend emission limits for power plants until November 1974 if necessary fuel is unavailable, and subject to conditions preventing imminent or substantial danger to public health.

- EPA could extend by five years the clean air deadline for 38 metropolitan areas that could not meet 1977 air quality standards, and an additional five-year extension could be granted.

- EPA would get authority to waive new source performance standards to encourage innovative and experimental control technology, provided that primary air quality standards are met.

- EPA would get authority to set design on equipment standards for sources when it is not feasible to set emission or performance standards.

- Civil penalties of up to \$25,000 per day of violation of air quality standards by stationary sources could be levied.

- Environmental impact statements by the Federal Energy Office would be required when ordering certain coal conversions or coal allocation actions of more than one year's duration.

- Federal auto emission standards for the 1975 model year for carbon monoxide, hydrocarbons, and nitrogen oxides would be extended through the 1976 and 1977 model years.

On balance, these Administration proposals are more moderate than some options that were heatedly debated within the Administration. Indeed, some EPA officials credit Mr. Train

with the key role in hammering out a reasonable compromise on the total package, which, Mr. Train says, will "provide EPA with the flexibility needed to achieve compliance with air quality standards without weakening the basic thrust of the statute." All of which tends to make the controversy over changing the Clean Air Act less exacerbating and improves chances that Congress will act favorably on most of the proposals after some tinkering and perhaps heated debate on the provisions on which Mr. Train has voiced objections.

Emergency rules set for vinyl chloride

Immediate steps taken by the Government to safeguard workers from dying of a rare liver cancer most likely due to vinyl chloride exposure won't unduly burden most firms either making the monomer or converting it to polyvinyl chloride. Small producers of finished PVC goods may find complying with the interim ceiling of 50 p.p.m. vinyl chloride in work-place air costly, depending upon the analytical method required. But the real rub for many firms, big or small, will come later in meeting the 1-p.p.m. vinyl chloride exposure limit proposed for a permanent standard.

Two rules on vinyl chloride by the Occupational Safety and Health Administration were due to appear in the *Federal Register* late last week or early this week. OSHA will set an emergency temporary standard and propose a permanent standard to succeed it. The rules will affect all plants handling the chemical.

The emergency ruling will lower the current ceiling of 500 p.p.m. vinyl chloride to 50 p.p.m., OSHA chief John H. Stender said in a March 22 statement. It also will call for work-place monitoring and, when the new ceiling is exceeded, wearing such gear as air-supplied respirators as well as impervious suits in some instances.

The National Institute for Occupational Safety and Health is urging OSHA to require use of an analytical method involving a gas collecting tube tied in with a gas chromatograph. The method's sensitivity is about 1 p.p.m. vinyl chloride. The technique is criticized by one industry expert as being "too expensive" and not providing "real-time" analysis. For PVC finishing operations, he adds, a simpler method, using, for example, a Dräger tube at a cost of \$1.00 per test, would be adequate to demonstrate compliance with the emergency standard.

The ceiling reduction results from investigations (C&EN, Feb. 25, page 16) of Prof. Cesare Maltoni, Istituto Di Oncologia, Bologna, Italy, Mr. Stender says. "Maltoni's studies demonstrated that reduction from 500 p.p.m. to 50

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p.p.m. provides a considerable degree of protection from the 250-p.p.m. concentration [of vinyl chloride in air] observed by Maltoni to be cancer-causing in animals, while those exposed only to 50 p.p.m. showed no apparent ill effects," he explains. (Prof. Maltoni is running further tests with greater numbers of rats at the 50-p.p.m. level, however, to confirm or refute this "no effect" finding.)

Just hours after Mr. Stender's brief statement to the press was issued, organized labor and chemical industry officials met privately and separately with him. Industry has opposed an emergency rule, preferring to await the results of ongoing epidemiology and animal toxicity studies, while working methodically toward a new, permanent rule. Organized labor, meantime, has asked for a tough emergency rule at once with "no measurable exposure" and medical tests, among other things.

Sheldon Samuels, safety and health director for AFL-CIO's industrial union department, criticizes the emergency rule as ineffective. The new ceiling "is so high," he says, "that the United Rubber Workers Union tells us that only 20% of the plants it represents would have to make any changes at all to meet it." At least six PVC plants and one vinyl chloride plant now operate at levels of 10 p.p.m., he says.

PVC plants inside buildings occasionally exceed the new ceiling, particularly in the area of polymerization reactors. Workers who clean reactors are apparently those most susceptible to the liver cancer. Researchers have found that during reactor scraping operations, after polymerization, concentrations close to the worker's hand ranged from 600 to 1000 p.p.m. [*Arch. Environ. Health*, 22, 79 (1971)]. Clean-up methods now are safer.

OSHA's Stender visited Dow Chemical and Union Carbide plants in Freeport and Texas City, Tex., respectively, before opting for the emergency rule. "Theoretically," he says, a permanent standard "can be on the books as early as June." It's expected that OSHA will bypass setting up an advisory panel for the permanent rule and that a public hearing will be requested.

OSHA last week was expected to adopt most of the medical surveillance programs urged by NIOSH. The program covers all monomer and PVC plant employees, including clerical and managerial staff. Besides such lab procedures as complete blood count, urinalysis, and chest x-ray, the program recommends five mandatory liver function tests: total bilirubin, alkaline phosphatase, serum glutamic oxalacetic transaminase, serum glutamic pyruvic transaminase, and gamma glutamyl transpeptidase. The tests are to be done yearly, except when abnormalities show up or when a worker already has had 10 years of vinyl chloride exposure.

Significantly, NIOSH urges that pregnant women, or those who expect



Stender: Interim ceiling of 50 p.p.m.

to become so, not work "directly in vinyl chloride monomer operations." Prof. Maltoni found that the offspring of rats exposed to 10,000 and 6000 p.p.m. of vinyl chloride developed subcutaneous fibrosing angiosarcomas.

"Serious objections" to NIOSH's medical protocol are raised by Dr. Sidney Wolfe, of the Ralph Nader-affiliated Health Research Group. For one, he tells C&EN, it "seems absurd" not to cover workers in contact with vinyl chloride in operations other than the monomer and polymer plants. What's more, liver function tests should be done every four months, he urges, to detect the cancer sooner.

BLS releases nuclear manpower figures

With AEC and the nuclear industry in the midst of a major gearing up on the breeder and other nuclear power projects, the Bureau of Labor Statistics (BLS) has released new figures on how many people are employed at what in the atomic energy field in the U.S.

As of last July (latest available figures), BLS says that about 171,000 persons were employed in atomic energy work with employment almost equally divided between Government-owned establishments operated by contractors (85,100) and privately owned establishments (85,800) including non-profit institutions. BLS adds that employment has steadily declined at Government-owned facilities since 1967—when about 101,500 were employed—and dropped by about 10,000 from 1971 to 1973. However, employment in privately owned establishments believed by AEC to be engaged in atomic energy activities has increased by 24,300 above a 61,500 level reported in 1971. BLS attributes about half (12,900 employees) of the increase in private employment to new establishments added in the two-year period, and the remaining 11,400 to growth in the private sector.

BLS collected these and other employment data from about 60 Government-owned and about 740 privately

owned establishments. Excluded were employees of federal, state, and local governments, those working in uranium mining and construction (other than reactors), and personnel employed in non-AEC-connected university atomic energy research and teaching.

More than 45% of the atomic energy workers surveyed in 1973 were scientists, engineers, and technicians. BLS says. Engineers made up the largest group (33,000), followed by technicians (31,800 including nuclear reactor operators) and scientists (13,600). Chemical engineers accounted for 2300 of the engineering work force with 1100 of the chemical engineers engaged in R&D. Chemists accounted for 3700 of the scientists' work force, with 2500 engaged in R&D.

Overall, about 45% (20,800) of the scientists and engineers were working on R&D projects, with about 34% of the engineers and about 70% of the scientists engaged in R&D. Of the 11,200 engineers working in R&D, 8000 worked in Government-owned facilities, and 3200 in privately owned facilities. About 9600 mathematicians and earth, physical, and life scientists were employed in R&D projects, with 8200 working in Government-owned facilities, and 1400 working in privately owned facilities.

BLS points out that of 20 different industrial segments surveyed, three segments employed nearly 80,000 employees or 47% of the atomic energy manpower:

- Weapons development and production. Total employment: 31,600. About 4300 of these workers were engineers, about 2600 scientists. Chemical engineers accounted for 296 of this work force, chemists 779 positions.

- Reactor and reactor component design and manufacturing. Total employment: 26,900. About 5900 of these workers were engineers, about 300 scientists. Chemical engineers accounted for 286 of this work force, chemists about 100 positions.

- Design and engineering of nuclear facilities. Total employment: 21,500. About 9200 of these workers were engineers, about 400 scientists. Chemical engineers accounted for 211 of this work force, chemists about 45 positions.

All other segments of the atomic energy field surveyed employed 91,000 workers, including 13,600 engineers and 10,100 scientists. Chemical engineers in the "other segments" category numbered 1507 and chemists 2776.

About 55% of all scientists and engineers in atomic energy activities were supported by federal funds, BLS says. In the private sector, only 17% of the scientists and engineers were supported with federal funds in 1973. This compares with 26% in 1971 and 32% in 1970. Private industry's own funds supported 63% of their scientific and engineering work force, other sources the remaining 20%, BLS says.

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Dow speaks with one voice

Mr. Whittemore and Mr. Brennan provided the committee with the specifics of the industry's position. SOCCA's Whittemore focused on ~~ASF~~ and sector-by-sector reciprocity provisions the chemical industry wants included in the trade bill. MCCA's Brennan focused on the need for use of industry advice in the negotiations and for curbing "excessive" tariff cutting authority in the House bill.

Cancer bill passes, infighting goes on

A bill authorizing federal cancer research efforts to continue for three more years at a cost totaling nearly \$2.6 billion sailed through the Senate last week without a "nay" vote, despite the threat of a veto by President Nixon.

Although supporting more cancer research, the Administration opposes the bill's provision setting up a five-member Presidential panel to oversee all federal biomedical research. Neither enhanced Congressional control nor better administration of health programs would result, Frank Carlucci, Health, Education, and Welfare undersecretary, has said in urging a veto.

Sen. Edward M. Kennedy (D.-Mass.) and others won approval for the panel, particularly by questioning the wisdom of cutbacks at the National Institutes of Health, while cancer and heart disease research have received added funds.

Among Sen. Kennedy's arguments for the bill is what he calls the need to counter a "chemical onslaught." Some 10,000 new chemicals are produced yearly in quantities of 1 ton or more. About 500 are tested in the U.S. each year, he adds. "Obviously at this level we cannot catch up with testing the older chemicals or even make a dent in the yearly inundation of the new," he concludes.

Similar viewpoints on testing

new and old chemicals were heard at an American Cancer Society seminar in St. Augustine, Fla., where the current cancer scare over vinyl chloride was aired. There, Dr. Irving J. Selikoff, Mount Sinai School of Medicine, New York City, estimated that perhaps 5% of the polyvinyl chloride work force will get an incurable liver cancer. Although this estimate is based largely on medical studies at a Goodyear Tire & Rubber PVC plant, much more is expected to be learned when the New York Academy of Sciences holds a by-invitation-only meeting May 10-11 with papers given by virtually all the top scientists studying vinyl chloride.

Benzene shortage pinned on government

Benzene supplies are 10 to 15% below anticipated demand and they are likely to stay that way. Big consumers such as styrene makers are being forced to cut back production. And much of the blame for this situation lies with the Federal Energy Office.

These are the major findings of a new report by the Petrochemical Energy Group (PEG), an organization of 21 major chemical producers. According to the organization, companies in the chemical industry are still experiencing significant shortages of particular feedstocks of as much as 50% in some cases.

Total U.S. benzene production in 1973, PEG estimates, was 1.45 billion gallons, and imports amounted to 23 million gallons. With demand estimated at 1.74 billion gallons (based on available derivative capacity), a potential 260 million gallon shortage resulted. A PEG spokesman sees this shortfall persisting into 1974.

PEG claims that, despite priorities given petrochemicals in the mandatory petroleum allocation program, crude oil allocations to refiners may have reduced benzene production by forcing refiners with large benzene extraction facilities (such as Gulf Oil) to sell "excess" crude to smaller refiners that don't have benzene capacity.

FEO refinery yield programs also may be discouraging benzene output by shifting refinery output toward middle distillates or gasoline.

PEG recommendations for easing supplies include that:

- FEO make allowances for benzene needs before allocating crude oil among refiners, and start a refinery monitoring program to maxi-

mize use of benzene extraction and fractionating capacity.

- FEO modify petroleum allocation regulations to assure feedstock needs for new benzene capacity.

- The Environmental Protection Agency reconsider its plans for removing lead from gasoline, since additional benzene will be needed for octane building.

Strike continues at Dow Midland complex

Dow Chemical's Midland, Mich., production facilities set a new record last Wednesday by operating at more than 90% of capacity the first time ever, a Dow spokesman boasts. What makes the boast interesting is that the Midland complex is being struck by its hourly workers and is being operated by some 2700 salaried employees working 12-hour shifts.

The strike began March 18 after contract negotiations between United Steel Workers Local 12075 and the company broke down. The contract had expired March 11, but was extended while negotiations went on. However, a majority of the 5300 union members rejected Dow's offer of \$1.62 per hour in additional wages and benefits (74 cents in actual wages) spread over a three-year period. According to Dow, the current average hourly rate at Midland is \$5.32 for union workers.

At the outset there was mass picketing at the Midland works and also picketing at company headquarters. There were reports of minor scuffles between striking and nonstriking employees, but the situation is now said to be quiet.

Dow went to court March 19 to get an injunction against the strikers; instead, the union local signed a letter of understanding (in lieu of injunction) limiting it to 75 pickets at each plant gate and at headquarters. However, Dow says, there was difficulty getting trucks in and out of the plant, and some harassment of nonstriking workers. So Dow went back to court on March 23 and obtained a preliminary injunction that enjoined mass picketing, and called on both parties to resume negotiations in good faith. At press time, negotiations were still under way, but there were no predictions as to the outcome.

A side effect of the strike is that Dow, for the first time in its history, will hold its annual stockholders meeting outside of Midland. The meeting will be held instead in Miami on May 8.

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Vinyl Chloride Exposure Should Be Cut To Unmeasurable Levels, Officials Urge

By a WALL STREET JOURNAL Staff Reporter

WASHINGTON — Over the objections of industry, federal scientists are recommending that worker exposure to vinyl chloride be reduced to amounts too small to be measured in order to avert possible liver cancer.

Federal standards currently limit exposure to vinyl chloride to 500 parts per million in the atmosphere, and industry experts have urged that the limit be set at 50 parts per million.

However, scientists at the National Institute for Occupational Safety and Health are unable "to describe a safe exposure level," Dr. Marcus Key, the institute's director, advised the Labor Department. Therefore, he added, "We rejected the concept of a threshold limit for vinyl chloride gas in the atmosphere."

Instead, the institute is recommending that when an employee is exposed to any measurable concentration of vinyl chloride gas, he should wear an air-supplied respirator.

In addition, the proposal calls for a control plan to reduce air-borne levels of vinyl chloride to amounts that can't be detected by certain recommended procedures, as well as an air-sampling procedure and a system of full body protective clothing for workers in regulated areas.

In a memo to the department's Occupational Safety and Health Administration, Dr. Key said nine cases of angiosarcoma, a rare type of liver cancer, have been discovered among workers exposed to vinyl chloride for periods of 12 years and longer. Some 6,500 employees at 37 plants operated by 23 U.S. manufacturers are potentially involved.

The problem came to public attention in January when a division of B. F. Goodrich Co. said four workers at its Louisville, Ky., plant, which converts vinyl chloride into polyvinyl chloride, had died from the rare liver cancer.

Dr. Key's institute, an arm of the Department of Health, Education and Welfare, makes scientific recommendations on worker exposure to hazardous substances. However, actual standards are set by the Labor Department's Occupational Safety and Health Administration, or OSHA.

The department hasn't decided whether to issue an emergency standard for vinyl chloride exposure, an OSHA spokesman said yesterday. Dr. Key is proposing "expedited" procedures to formulate a permanent standard. Under such procedures, the department might, for example, skip the usual

step of appointing an advisory committee to make recommendations. Expedited standard setting might take up to four or five months.

Any decision to avoid a more immediate emergency standard would distress labor groups. The AFL-CIO's industrial union department had sought such a standard, which would impose engineering and workplace practices to reduce vinyl chloride exposures while a permanent standard is being prepared. Without such rules, there isn't any protection for workers while the standard-making process moves forward, said Sheldon Samuels, the industrial union department's safety and health director.

"Nothing is happening in the plants" to improve protection of workers because concerns are awaiting issuance of federal standards, Mr. Samuels asserted. Some concerns have asserted they are reducing exposures and improving procedures without federal directives.

Dr. Key's recommendation covers companies that convert vinyl chloride, a colorless gas, into polyvinyl chloride, a widely used solid plastic material.

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Goodrich to Fund Study Of Vinyl Chloride Cancer

By a WALL STREET JOURNAL Staff Reporter
AKRON, Ohio — B.F. Goodrich Co. said it is funding a medical research program on angiosarcoma, a form of liver cancer, and related liver diseases at University of Louisville's health sciences center and cancer center.

The first year of the program is estimated to cost \$300,000, all to be supplied by Goodrich, the university said. "It is our goal to provide medical information that can be applied practically in the detection and treatment of liver ailments that may have resulted from worker exposure to vinyl chloride," said Dr. Harold Boyer, vice president for health affairs, University of Louisville.

Eventually the program could lead to expanded medical studies on liver diseases for which additional support from other sources would be sought, the university said.

Goodrich became concerned about the rare form of liver cancer after several fatal cases were discovered at its Louisville polyvinyl chloride plant, suggesting that the disease may be triggered by exposure to chemicals involved in its production.