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Toxic Bill Is 'Wrong Approach'

The toxic substances bill reported to the Senate Commerce Committee in mid-February is the wrong approach, MCA President William J. Driver says, "because it is so sweeping and poorly focused that it is likely to slow down efforts by the Environmental Protection Agency and the industry to identify and regulate toxic substances."

At press time, the bill seemed likely to reach the Senate floor around March 1. In the House, markup of a similar measure in the Interstate and Foreign Commerce Committee could have started about the same time.

The chemical industry supports constructive federal toxic substances legislation, Mr. Driver emphasized. Specifically, it favors the McCollister bill, H.R. 7664, which has been endorsed by the Ford Administration, and is actively working for enactment of the bill, with certain amendments.

The Senate measure calls for premarket testing of all chemicals considered potentially dangerous to determine if they might cause cancer.

A special advisory committee of experts would be created under the bill to establish and maintain a priority list of chemicals considered dangerous. EPA could order manufacturers to submit test data for any chemical on the list.

The agency also could require that new chemicals be extensively tested if they appear to pose an unnecessary risk, if they are to be produced in large quantities or if test data is insufficient to determine whether they are harmful.

MCA President Driver says that despite some helpful amendments, "the Senate

(Continued on page two)



Scientist A. D. Schmeltekopf inspects steel globes sent aloft by balloon to collect trace gases in the stratosphere for a fluorocarbon-ozone assessment. The details are on page two.

Mercury Pesticides Curbed

Citing an unreasonable risk to man and the environment, the government has ordered an end to the production of most pesticides containing mercury.

Environmental Protection Agency Administrator Russell Train has cancelled the registrations of all mercurial pesticides used as bactericides or fungicides in paint and coatings, on turf and for seed treatment.

Mr. Train said the relatively innocuous mercury compounds used in pesticides are converted in the environment to toxic methylmercury, which bioaccumulates in the food chain. This, he said, ultimately could harm animals and humans. The stop order is expected to reduce the amount of mercury entering the environment through pesticides by 98.5 percent, EPA estimates.

Mr. Train's action overrode an earlier decision of an administrative law judge, who recommended continuation of most uses of mercurial pesticides. Although production is banned, cancelled products formulated before the Feb. 18 stop order can be sold.

MONS 083340

16 Nations Adopt Mediterranean Cleanup Treaty

A treaty calling on nations "to take all appropriate measures to prevent and abate the pollution of the Mediterranean Sea" has been adopted by 16 Mediterranean countries at a conference sponsored by the United Nations Environmental Program.

The treaty establishes two protocols, one on ocean dumping and the other emphasizing cooperation between the countries in the event of emergencies such as a major spill.

The ocean dumping protocol establishes two lists for regulating such disposal. A "so-called black list" prohibits dumping of mercury, crude oil, chemical and biological warfare materials and non-biodegradable synthetic matter. A "grey list" allows dumping of some substances, such as pesticides, zinc and lead, with the permission of the nearest country.

Toxic Bill

(Continued from page one)

bill's blanket requirements for testing and screening of chemical substances will handcuff EPA, industry and the scientific community in their efforts to test and act on the most serious potential risks to public health and the environment."

Mr. Driver believes the legislation will impose serious and unnecessary economic penalties on the public through added taxes and higher prices, restrict the development of important new products and add to unemployment.

A brochure entitled "The Chemical Industry Speaks Out On Toxic Substances Legislation" is available free from James P. Turner, manager, environmental information, MCA, 1825 Conn. Ave., N.W., Washington, D.C. 20009.

Ozone Probes–Up, Up and Away!

Government scientists launched two balloon-borne probes from Antarctica early this year to sample chlorofluorocarbons (commonly called fluorocarbons) and nitrogen oxides and assess their possible impact on the earth's ozone layer. The flights, conducted by the National Oceanic and Atmospheric Administration, carried aloft six stainless steel spherical flasks to capture air samples.

The empty flasks were immaculately clean so that the small concentrations of fluorocarbons and nitrogen oxides to be measured—typically a fraction of a few parts per billion—would not be contaminated by other materials.

As the probes rose through the stratosphere, minicomputers attached to the spheres directed intake valves to open at different altitudes. Through this procedure, a vertical profile of stratospheric fluorocarbons and nitrogen oxides can be plotted.

The scientific payloads parachuted to earth after completing the missions and were successfully recovered.

Dr. Arthur L. Schmeltekopf, head of NOAA's stratospheric sampling program, said the samples indicate that fluorocarbons "are reaching the stratosphere intact, as predicted by theory, and that once there they are being broken down by solar radiation.



Dr. Paul Goldan adjusts the gas chromatograph used to analyze stratospheric trace gases in NOAA's sampling program.

"Right now we're trying to get a reasonable idea of the fluorocarbon distribution over large areas," he explained, "and the extent to which these compounds have entered the relatively clean stratosphere over Antarctica.

"Measurements there will effectively take us back in time," he said, "so we'll probably be seeing the fluorocarbon situation as it was over our lower latitudes two or three years ago.

"With regard to the nitrogen oxide cycle in the stratosphere, our results show large variations that theory doesn't explain," Dr. Schmeltekopf said. "For example, we've found large differences between nitrous oxide measurements made over Laramie, Wyo., last summer and some made more recently over western Canada.

"We hope the Antarctic launches will help us tell whether these are a function of latitude, season or some other factor."

NOAA plans another stratospheric probe later this year in the Arctic and has already started a series of monthly balloon flights from its Laramie facility to test variables of atmospheric chemistry that complicate the ozone-fluorocarbon controversy.

In a related development, a new economic report by the Commerce Department concludes that it is too early to consider restricting the production and use of fluorocarbons because "available research is not yet sufficient to determine the effect of fluorocarbons on the earth's stratosphere."

Samuel B. Sherwin, deputy assistant secretary for domestic commerce, pointed out in the report that the Commerce Department "is concerned about protecting the earth's environment, but it is also concerned about possible premature or unwarranted restrictions on the production and use of fluorocarbons. These chemicals are important to our national economy."

The study, *The Economic Significance of Fluorocarbons*, is available free in limited quantities from the Publications Sales Branch, Room 1617, Department of Commerce, Washington, D.C. 20230.

Cyanamid Building Tertiary Waste Treatment Plant

American Cyanamid Company has started building a $22.4 million tertiary wastewater treatment plant at its chemical complex in Bridgewater, N.J.

Eldon H. Knape, plant manager, said construction is expected to take 18 months, and that the system will be in full standard operation by the end of 1977.

The new facility will use activated carbon to provide tertiary treatment to 20 million gallons of daily effluent from the company's existing biological secondary wastewater treatment plant.

The carbon will provide maximum protection to the Raritan River, into which Cyanamid discharges, by further cleansing the waste streams from all 1,000 products Cyanamid produces at Bridgewater, as well as all rain runoff from the site.

Describing the new plant as "a giant step forward in our waste treatment technology," Mr. Knape said "its construction now will enable us to exceed by six years the federal requirement calling for installation of the 'best available technology' by 1983. It will be the largest facility of its kind in the United States, and we expect it to be a model for the industry," he said.

When completed, the new plant will increase to $35 million Cyanamid's investment in water pollution abatement facilities at Bridgewater.

At another Cyanamid plant in Linden, N.J., a new incinerator has just gone into operation to dispose of organic wastes.

The $2.6 million incinerator is the first phase of a program to end ocean disposal of wastes from Linden.

MONS 083341

Cancer and the Environment: Some Facts in Perspective

Cancer and the environment is a rapidly-developing subject of social concern. Dr. John A. Zapp Jr., director of the Du Pont Company's Haskell Laboratory for toxicology and industrial medicine, discussed the occupational health aspect recently at a special legislative briefing in the U.S. House of Representatives. Highlights of his views are condensed below.

Cancer is the second leading cause of death in the United States. While cancer can occur at all ages, the incidence increases dramatically with advancing age. It is, nevertheless, one of the important causes of untimely deaths.

It has been said that 80-90 percent of all cancer is caused by environmental agents and is theoretically preventable. The remainder is attributed to genetic causes and perhaps viruses, as distinct from environmental factors.

I have no basis for challenging the accuracy of the 80-90 percent estimate, but look closely at the meaning of the word "environment." It means more than the specific products introduced into our lives by industry. Environment includes everything we eat, drink and breathe and in general have around us (see box).

Among the many causes of untimely deaths are occupational diseases and accidents. Occupational diseases include cancer caused by specific chemicals. There have been too many deaths from occupational causes. Some have occurred because of ignorance. Some have arisen from negligence.

Occupationally related cancer has received a great deal of attention in recent years, although it is not one of the statistically large causes of cancer deaths. The director of the International Agency for Research in Cancer, a World Health Organization activity, recently stated that cancer identified as due to occupational factors form a relatively small proportion of all cancers.

Whether occupational causes account for one percent of cancer or some other number, we want to reduce the risk and frequency. We acknowledge that responsibility. At the same time, the question of risks needs to be kept in perspective.

Recently proposed legislation strives to reduce these risks to zero. This is a laudable goal, but it raises some serious questions. Some risks can be reduced to zero. People are killed by falling off horses and in airplane accidents. It will never happen if they stay off horses and out of airplanes. Unfortunately, it is not possible to eliminate all causes of untimely deaths.

Laboratory studies have shown that all but one of the human carcinogens, arsenic, can cause some sort of cancer in animals, but not necessarily the same type which occurs in man. In the experimental setup, a dose can be found which does not induce cancer within the life span of the test animals.

Thus, can a guaranteed no-effect level for man be calculated by extrapolation from the no-effect level in an animal experiment and can an animal experiment prove conclusively that a substance is not a carcinogen for man?

The answer to both questions is "no." Absolute safety for man can neither be guaranteed nor proved.

In dealing with potentially hazardous materials, industry and government make much use of exposure limits which are presumed to be safe for man. These are valuable aids in providing a safe working environment, but they are not guaranteed to provide a zero risk. They are like automobile speed limits. They are necessary but not perfect.

What Causes Cancer?

The World Health Organization's widely quoted claim that up to 90 percent of all cancer has an environmental cause is subject to misinterpretation. James A. Peters of the National Cancer Institute set the record straight on the nature of environmental carcinogens in recent testimony before a Senate subcommittee.

Of the total 90 percent, he said, tobacco probably accounts for 40 percent of cancer mortality, dietary factors may be responsible for 25 to 30 percent and occupational factors for another 10 percent. This leaves only 10 to 15 percent attributable to environmental pollution.

What course of action should we follow from here on? The chemical industry realizes that there are gaps in the law that need to be filled and supports legislation that would do this.

Moreover, industry sees the need for additional research on occupational carcinogens. Recent experience has turned up several of these which were not identified earlier because industry, government and academia made an error. We all erred in assuming that only a few chemicals cause cancer. As a result, there have been surprises like vinyl chloride and bis-chloromethyl ether.

Now that the error is evident, industry is taking steps to avoid its repetion. A number of relatively old chemicals, tested long ago for hazards, will now have to be examined for possible carcinogenicity. This should be done on a priority basis, focusing attention on areas where risks are likely to be greatest and involve most people.



Dr. John Zapp

We who are responsible for evaluating the toxic properties of industrial chemicals feel a heavy responsibility for detecting both carcinogenic and other toxic hazards where they exist. Industry would like to see occupational illness become unimportant as a cause of untimely death.

Northeast Plans Energy from Waste

Universal Oil Products, Incorporated has been recommended by Massachusetts to design, construct and operate for 20 years the world's largest integrated solid waste processing and energy recovery facility. The system would serve a number of communities in the northeastern part of the state.

John O. Logan, UOP president and chairman, says that at the present time there are no integrated refuse-to-electric-power facilities in the United States, although some are operating in foreign countries.

Approximately 60,000 kilowatt-hours of electric power would be generated from the waste, an energy savings equivalent to 860,000 barrels of fuel oil per year.

The UOP facility could process more than 930,000 tons per year of municipal and nonhazardous industrial refuse and is expected to recover nearly 60,000 tons of ferrous metal annually for recycling to the steel industry.

In addition, a high-quality residue containing less than 0.2 percent organic matter will be produced, which potentially can be processed and marketed for aggregate, land reclamation and other purposes. The residue will be landfilled.

MONS 083342

Advanced Water Pollution Control Unnecessary, NCWQ Member Says

The first step in cleaning up the nation's waters is going to be so successful that the second step should be deferred to avoid wasting capital and other resources, according to Dr. Edwin A. Gee, a member of the National Commission on Water Quality.

That prediction by Dr. Gee, a senior vice president of the Du Pont Company, may be a preview of recommendations the Commission is presently preparing for Congress, which will ultimately decide the future course of the Water Pollution Control Act.

Speaking at a meeting sponsored by The Conference Board, Dr. Gee said the Commission's draft report points up the necessity for a mid-course correction, and that the National Academy of Sciences has concluded that continued progress in water quality can be achieved at a savings of billions of dollars if the stringent 1983 requirements are not adopted.

Dr. Gee believes that the benefits from the more moderate 1977 requirements will justify the cost, but that there will be delays in meeting them.

He estimates that 80 to 90 percent of industry will meet the 1977 requirements on time, but only half of the cities will make it.



Dr. Edwin A. Gee

Discussing the cost of the nation's pollution abatement effort, Dr. Gee said most of our problems are economic. He pointed out that almost every estimate of costs has turned out to be low, citing a 1973 government estimate that air and water pollution abatement in the decade 1972-81 would cost about $106 billion.

"Now we know that the water program alone could be more than $200 billion," he said, "so air and water programs together could well come close to $400 billion. That's about $2,000 for every man, woman and child in the United States."

Dr. Gee said a shortage of capital today raises the prospect of a lower growth rate, continued high unemployment and high inflation. "Make no mistake; environmental investments required by law add to the problem. They come off the top—that is, before investments can be made in productive capacity."

Citing recent reports that environmental improvement is a spur to the economy, Dr. Gee said that these jobs come at a cost. That cost is the failure to create more than two million new jobs in productive enterprise.

"Pollution control is capital intensive," he explained. "Investments in productive equipment will, on the average, provide half again as many jobs as the same amount of money invested in pollution control."

In addition, he said, for every production job in U.S. manufacturing there is about one additional job in "downstream" industries such as transportation, wholesaling and retailing. "These jobs simply don't exist when there is no product to sell."

Dr. Gee said the law of diminishing returns applies to environmental matters as it does to all economic issues. "The costs of removing impurities rise sharply as water is purified," he said, "and a level is reached at which the benefits of further purity are insignificant and the higher purity very costly to achieve.

"The nation can't afford tunnel vision when it pursues any major program," Dr. Gee said. "I believe the end product of the National Commission on Water Quality will stand as a constructive example of how to make sensible progress on controversial and critical national problems."

After hearings in five cities, the Commission is putting final touches on its report, which goes to Congress this month.

Monsanto Plans to Phase Out PCBs When Acceptable Alternative Bows

Monsanto Company says it is developing alternatives to polychlorinated biphenyls and intends eventually to phase them out to help prevent further buildup of the materials in the environment, where they are exceptionally persistent.

The company began producing PCBs in 1929 to fill the need for an electrical insulating fluid which could provide increased fire resistance in transformers and capacitors.

Over the years, PCBs found other industrial applications. Many of these were in open systems.

It was in the late 1960s when PCBs first emerged as an environmental problem. The compound, which degrades extremely slowly in nature, was detected at low levels in fish.

Because of this concern, Monsanto, the sole U.S. producer of the material, voluntarily restricted sales of the product in 1970 to closed systems such as electrical components. This reduced the company's annual PCB production by more than 50 percent.

More recently, the Environmental Protection Agency has called for tighter controls on PCBs because of their possible threat to human health and the environment.

The company has been working for years on a PCB substitute. These materials, designed to replace PCB fluids in capacitors and transformers, are currently being evaluated by electrical equipment manufacturers.

F. J. Fitzgerald, a Monsanto spokesman, said it is too early to put an exact timetable on the planned phaseout of PCBs, but added: "As soon as we are satisfied that the electrical power supply industry's need for usable, acceptable, alternate dielectric fluids has been met, by whomever, Monsanto will voluntarily shut down its PCB manufacturing unit."

Dow Chemical Company recently announced a new insulating fluid which could be an environmental alternative for PCBs in some electrical equipment.

Besides limiting PCBs to closed systems, Monsanto has taken other steps to minimize leakage of the compound into the environment. For example, extensive controls in the manufacturing process prevent the material from escaping tha production area.

The company also installed a special incinerator which completely destroys waste PCBs by burning at temperatures above 2,000 degrees F. The incinerator and other technical assistance is available to Monsanto's customers.

Mr. Fitzgerald said Monsanto hopes to replace PCBs in an orderly manner without creating another hazard of equal or potentially greater consequence, while avoiding serious power and transportation disruptions.

In the interim, he said, Monsanto will work with industry and government to maintain the controls implemented earlier.

PPG Grant to Spur Catalyst Research

PPG Industries' Fiber Glass Division has awarded a $12,000 grant to the University of Pittsburgh for research on fiber glass as a catalyst support in pollution control systems.

The grant will support work by Pitt's School of Engineering on catalyst systems for automotive emission control and chemical processing, according to Robert A. McLaughlin, a vice president at PPG.

Research efforts are aimed at use of fiber glass as a catalyst carrier to achieve a major reduction in the amount of precious metals used in auto emission control and chemical applications.

An additional goal is to reduce the temperature at which catalyst systems begin to function. In auto emission control systems, lower operating temperatures would allow the device to begin functioning sooner after engine start-up, reducing pollution.

MONS 083343

Library

WASTE REDUCTION, PROCEEDINGS OF A 1975 CONFERENCE

Representatives from government, industry, labor unions and citizen groups discuss energy conservation, source reduction, innovation vs. regulations and technical options. SW-7p is $2.40 from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402.

GUIDELINES FOR WRITING ENVIRONMENTAL IMPACT STATEMENTS

This study provides an outline for preparing impact statements. The authors say it is not a complete formula because of the "basic problem of predicting the future." It suggests what may be important and how these points may be addressed within the current framework of impact statement requirements. Prepared by Battelle Laboratories, PB-242 960/3WE is $8.50 from the National Technical Information Service, 5285 Port Royal Road, Springfield, Va. 22161.

YOUR TOMORROW—A GUIDE TO CAREERS IN THE CHEMICAL INDUSTRY

Environmental and occupational health engineers are among many career opportunities discussed. The pamphlet also offers guidance on career preparation and where to obtain more information. It is free from MCA's Publications Service, 1825 Conn. Ave., N.W., Washington, D.C. 20009.

CHEMICAL ANALYSIS OF ECOLOGICAL MATERIALS

Techniques for chemical analysis of soils, plant materials, and heavy metals and pesticides are discussed in this book prepared by the Institute of Terrestrial Ecology. A copy is $39.95 from Halsted Press, Division of John Wiley & Sons, 605 Third Ave., New York, N.Y. 10016.

PHARMACOKINETICS OF TOXIC ELEMENTS IN RAINBOW TROUT

The Environmental Protection Agency's National Marine Water Quality Laboratory offers a report on the uptake, distribution and concentration of methylmercury in trout. The report says the material is rapidly taken up by the fish's red blood cells and relates the effects to fish pollution problems experienced by Japan. EPA-660/3-74-027 is available free from the Office of Public Affairs, EPA, 200 S.W. 35th St., Corvallis, Ore. 97330.

ENVIRONMENTAL IMPACT OF NITRILE BARRIER CONTAINERS

This is a report on one company's method of anticipating the potential environmental impact of a new product. Monsanto organized a symposium for scientists from industry, government and academia to discuss possible adverse effects of a new container and procedures to eliminate or reduce them. The booklet is a reference work for environmental control of nitrile barrier containers and a guide to initiating similar symposia. A copy is free in limited quantities from Monsanto Company, 800 N. Lindbergh Blvd., St. Louis, Mo. 63166.

THE ENVIRONMENTAL CLASSROOM

Lifelong learning versus the traditional classroom approach in environmental teaching is discussed. This book is offered for $9.50 by Prentice Hall, Inc., Englewood Cliffs, N.J.

OCEAN LAW

A bibliography with 163 abstracts cites national and international laws on dredging, offshore drilling and water pollution. A copy is $25 from NTIS.

HAZARDOUS MATERIAL WASTE DISPOSAL

This manual contains abstracts describing research on management planning, disposal, pollution and toxicity of hazardous materials. PB-75-295/7GA is $25 from NTIS.

Workplace Impact of Toxic Substances To Be Focus of New OSHA Study Group

A special study is underway to analyze the impact of toxic substances in the workplace and the Occupational Safety and Health Administration's responsibilities in dealing with them.

OSHA chief Dr. Morton Corn has named Deputy Assistant Secretary Marshall Lee Miller to head the study. The investigation was prompted by the recent Kepone incident in Virginia and will include examination of events in that case.

"The full impact of dealing with toxic substances in the workplace is generally unknown as more and more chemicals enter the worksite," said Dr. Corn.

"The agency's experience in dealing with toxic substances indicates that we must move expeditiously to build a prompt response capability," he said, "as well as a central technical resource to which our compliance officers can turn for assistance."

Virginia Seeks New Controls on Chemicals

Virginia's Governor Mills E. Godwin has sent the state legislature 10 bills aimed at preventing future environmental and occupational health problems like those attributed to the production of the pesticide Kepone at Hopewell in the tidewater area.

Key provisions of the bills would:

- Authorize state officials to make surprise spot checks at plants making toxic substances,
- Require producers of toxic materials to register them with the State Health Department, along with information about their hazards,
- Delegate one state agency the final responsibility for coordinating information about future environmental problems,
- Impose fines up to $10,000 a day for each day an unregistered toxic substance is manufactured in the state,
- Require doctors to notify the state of any cases involving possible occupational poisoning and
- Force localities to adopt a model sewer ordinance and to survey companies using their sewage treatment plants to pinpoint which might be discharging toxic materials into state waters.

Gov. Godwin's proposals also would empower the Water Control Board to issue cease-and-desist orders against polluters before bringing them to court.

NIOSH Issues DDM Alert,

An alert to possible toxic hepatitis from occupational exposure to 4, 4'-diaminodiphenylmethane has been issued by the National Institute of Occupational Safety and Health.

The agency reports that, based on current research with rats, approximately 25 to 50 cases of the DDM-associated disease can be expected each year in the United States.

Positive carcinogenic results have been obtained in three separate studies with DDM-fed rats. However, OSHA says there have been no reports of human cancer related to the material.

DDM is used as a raw material in isocyanate/polyisocyanate producing facilities, in some rubbers, nylon and polyamides and as a hardening agent in epoxy.

. . . Asks Limit on Kepone

Occupational exposure to Kepone should be limited to one microgram per cubic meter of air, the National Institute for Occupational Safety and Health recommends.

The proposed rule would protect workers over a 10-hour workday, 40-hour workweek during a working lifetime, according to NIOSH. The agency says sufficient technology exists to permit compliance with the recommended standard.

Schools Warned about Carcinogens in Labs

Students at some high school, college and university laboratories may be exposed to cancer-causing chemicals, the Occupational Safety and Health Administration warns.

OSHA says its alert is based on a survey in Kentucky showing that some harmful chemicals may be in use in school laboratories without proper precautions.

The government recommends that all schools inventory chemical laboratory stock to uncover potential carcinogens, assure that they are properly labeled, that safe handling procedures are followed and that unneeded chemicals are disposed of properly.

Chemicals in the OSHA alert are: 4-nitrobiphenyl, alpha-napthylamine, beta-naphthylamine, methyl cholorormethyl ether, 3, 3'-dichlorobenzidine, benzidine, 4-aminodiphenyl, ethyleneimine, beta-propiolactone, 2-acetylaminofluorene, 4-dimethylaminoazobenzene, N-nitrosodimethylamine and vinyl chloride.

MONS 083344

SPI Promises Best Try On Vinyl Chloride Reg

The plastics industry "will do its best" to meet the proposed federal air emission standard for vinyl chloride despite certain reservations about technical details, according to Ralph L. Harding Jr., president of The Society of the Plastics Industry, Inc.

Testifying at an Environmental Protection Agency hearing on the proposed rule, Mr. Harding said the industry is "dedicated to assuring that the public health will not be jeopardized by the manufacture of vinyl chloride monomer or polyvinyl chloride resin."

Emphasizing that there is no demonstrable health risk to people who live in the vicinity of VCM or PVC plants, Mr. Harding called on EPA to provide leadership in establishing a joint research program to find definitive answers to continued questions about the health effects of vinyl chloride in the atmosphere.

The SPI chief said a joint effort to solve these questions should be undertaken by labor and management, citizen groups and government, and that EPA should take the lead in establishing a thorough, coordinated program.

"The problems associated with suspected carcinogens with no established thresholds are simply too important for each affected group to pursue its own limited goals and to have the medical facts clouded by emotional claims," he said.

While commending EPA for taking a cost-benefit approach in weighing emission control requirements, SPI urged a "more careful balancing" of such costs before the standard is made final.

Everybody Has a Virus—Including EPA!

The first insecticide made from a naturally occurring insect virus has been registered by the Environmental Protection Agency after passing extensive tests for safety and effectiveness.

The virus product will be used against two highly destructive crop pests, the cotton bollworm and tobacco budworm. The virus, called nuclear polyhedrosis, is naturally present in these two insects. Tests show that the virus appears to pose a minimal hazard to persons applying the insecticide.

The virus product also appears to have no adverse effects on beneficial insects, birds or other wildlife that help keep other cotton pests under control. EPA says this specificity is a major environmental advantage.



A cotton bollworm emerges from a damaged boll. A new virus promises better control of it and another pest, the tobacco budworm.

Other ecological benefits of the insecticide are said to be that it becomes harmless shortly after application and that it is not capable of building up in the bodies of birds or other wildlife that might eat the treated bugs.

The insecticide is produced by raising diseased bollworm and budworm insects in a laboratory then extracting the virus and mixing it with other materials. It may be applied by either ground equipment or airplane. The insecticide is produced by Sandoz, Inc., Homestead, Fla.

In cotton growing areas where other pests such as the boll weevil are a problem, research is being conducted on ways of combining the virus with chemical products for effective treatment.

In addition, other viruses are being tested for the control of two serious timber defoliating insects, the gypsy moth and the tussock moth.

In other work involving biological pesticides:

- An insect bacterium, *Bacillus thuringiensis*, is gaining widespread use for controlling gypsy moth and several vegetable and crop pests and recently was registered by EPA for use in combating the eastern spruce budworm.
- A fungus that is a natural enemy of a weed common to rice fields is entering its second year of field testing in Arkansas.
- A protozoan, known as *Nosema locustae*, is being evaluated in Montana and Wyoming for the control of grasshoppers.

Future Pest Control More Complex, States NCR

Controlling pests with chemicals is becoming increasingly difficult, according to a National Research Council report, and serious problems will be posed for agriculture and public health unless alternative technologies are perfected.

Although chemical pest control has been one of the factors in high U.S. agricultural productivity, the report finds that its future effectiveness is challenged by the appearance of genetic resistance in many pest species, the breakdown of "natural" control mechanisms and more stringent regulation based on public concern over environmental and human health hazards.

To maintain an effective system of pest control, the report recommends a "substantial expansion of present efforts" by the agencies concerned to develop such alternative technologies as:

- "third-generation" chemicals that interfere specifically with the bio-chemical systems of the pest but are relatively nontoxic to vertebrates;
- bacterial and viral agents, some of which offer "great promise" as control agents;
- breeding of pest-resistant plants, and the introduction of genetically modified pests into natural populations—as in the "sterile male" technique;
- ecologically based, integrated control strategies, that employ such cultural practices as adjusted planting times along with the use of biological control agents and other methods, and
- improved formulation and application methods.

A special panel of the study appointed to examine pesticide health hazards pointed out the need for more data on the relationship between human exposure to pesticides and disease, and asked that this area of research be supported at "higher than present levels."

The panel asserted that hazards to humans may escape detection for many years after a chemical is first introduced. It recommends that animal data be relied upon for government regulatory action "until evidence convincingly demonstrates that there is no human risk." At the same time, the panel recognized problems in translating experimental results from laboratory mammals to humans.

Financed by the Department of Agriculture, Environmental Protection Agency and the Ford Foundation, the study was under the chairmanship of Donald Kennedy, professor of biology at Stanford University.

The report, entitled *Pest Control, An Assessment of Present and Alternative Technologies*, is $26 from the National Academy of Sciences, 2100 Constitution Ave., N.W., Washington, D.C. 20418.

Earth Day Is March 20

Earth Day 1976 will begin at 7:50 a.m. on March 20 when the UN's Peace Bell in New York City will signal the arrival of the Vernal Equinox.

MONS 083345

CEQ Seeks New Air Quality Index, Says Old Way Is Confusing

Finding existing methods for reporting air quality in the United States "confusing and scientifically inconsistent," the President's Council on Environmental Quality says the government should seriously consider establishing a national air quality index.

"The diversity of air pollution indices creates potential confusion, raises questions about their technical validity and prevents the indices from being used to give a national picture of air pollution problems," according to a new report by the Council.

CEQ Chairman Russell W. Peterson says "at least 15 basically different kinds of indices are used, and few of them seem to provide truly meaningful information to the public." CEQ has created a task force to develop a national index.

The report shows that of the 55 metropolitan air pollution control agencies surveyed in the United States, 33 routinely used some form of short-term air quality index. However, it was found that nearly all of the indices had different mathematical formulations and different meanings to the public.

Striking differences also were noted in the way different cities calculate their indices, the number of pollutants they include and the manner in which they report their indices to the public.

The study found that "from the comments received from state and local air pollution control agency personnel, it is evident that a standard air pollution index, or standardized air quality reporting format, might be both beneficial and welcome.

Single copies of *Air Pollution Indices: A Compendium and Assessment of Indices Used in the United States and Canada* are available free from the Public Information Office, CEQ, 722 Jackson Place, N.W., Washington, D.C. 20006.

Environmental Events

Land Application of Waste Materials, March 15-18, Des Moines, Iowa. Contact American Society of Agronomy, 677 S. Segoe Road, Madison, Wis. 53711.

Development of Nuclear-Based Techniques for Measurement, Detection and Control of Environmental Pollutants, March 15-19, Vienna, Austria. Contact John H. Kane, Energy Research & Development Adm., Washington, D.C. 20545.

Industrial Pollution Control Measurement & Instrumentation, March 22-23, Newark, N.J. Contact Div. of Continuing Education, N.J. Institute of Technology, 323 High St., Newark, N.J. 07102.

Resource Recovery '76, March 23, Washington, D.C. Contact Director of Information Programs, National Center for Resource Recovery, Inc., 1211 Conn. Ave., N.W., Washington, D.C. 20036.

Environmental Planning Conference, March 22-26, Philadelphia, Pa. Contact Director, Continuing Professional Education, Drexel University, 32nd & Chestnut Sts., Philadelphia, Pa. 19104.

Resource Recovery, Case Histories for the '70s, March 30-April 1, Houston, Texas. Contact Water and Wastewater Equipment Manufacturers Assn., 7900 Westpark Dr., Suite 304, McLean, Va. 22101.

Safe Transportation of Hazardous Materials, April 5-6, Chicago, Ill. Contact William Butterbaugh, MCA, 1825 Conn. Ave., N.W., Washington, D.C. 20009.

Meteorology and Air Pollution Control, April 5-7, Nashville, Tenn. Contact Professor W. Wesley Eckenfelder Jr., Vanderbilt University, Box 6222, Station B, Nashville, Tenn. 37235.

Inter-Noise 76, April 5-7, Washington, D.C. Contact Inter-Noise 76, PSU/ARL, P.O. Box 30, State College, Pa. 16801

Water Pollution Control Federation's Government Affairs Seminar, April 8, Washington, D.C. Contact WPCF, 3900 Wisconsin Ave., Washington, D.C. 20016.

Industrial Air Pollution Control Seminar and Equipment Show, April 8, Cherry Hill, N.J. Contact American Institute of Plant Engineers, 1021 Delta Ave., Cincinnati, Ohio 45208.

Control of Hazardous Materials Spills, April 25-28, New Orleans, La. Contact Information Transfer, Inc., 1160 Rockville Pike, Rockville, Md. 20852.

Detection and Prevention of Cancer, April 26-May 1, New York, N.Y. Contact Dr. Herbert E. Nieburgs, Mount Sinai School of Medicine, 5th Avenue and 100th St., New York, N.Y. 10029.

Industrial Waste Conference, May 4-6, West Lafayette, Ind. Contact Professor A. J. Steffen, Room 310, Civil Engineering Bldg., Purdue University, West Lafayette, In. 47907.

Maritime Administration Offers Help To Develop Incinerator Ship Program

Impressed with the performance of a European incinerator ship, the Maritime Administration believes that the United States should develop its own capability to destroy toxic chemical wastes at sea.

Predicting that as many as four ocean-going incinerators eventually may be needed nationwide, the agency says it is in a position to help by converting some ships in the reserve fleet into disposal vessels.

In an environmental impact statement on the subject, the agency notes the growing volumes of hazardous residues and says that traditional disposal methods such as ocean *dumping* and *landfilling are becoming* increasingly intolerable from an environmental standpoint.

Of the 10 million tons of nonradioactive *hazardous* wastes generated annually in this country, the agency points out that 40 percent is inorganic and 60 percent is organic. Some 90 percent occurs in liquid or semiliquid form.

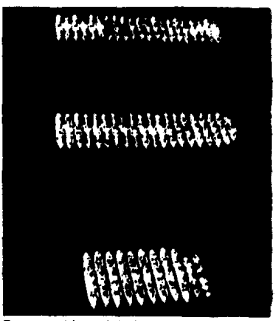
Ocean incineration is a relatively nonpolluting method for disposing of hazardous liquid wastes, the agency finds. It points to the success of the incinerator ship Vulcanus, which has operated for several years in Europe.

Late in 1974, the Vulcanus disposed of organic chloride waste in the Gulf of Mexico for Shell Chemical Company. Since it was the first such operation in this country, the burn was conducted under a special research permit from the Environmental Protection Agency.

The disposal was carefully monitored by EPA, which later concluded that the incineration resulted in no significant adverse *impact on the environment and was an environmentally compatible means of disposing* of wastes. Combustion efficiencies exceeded 99.9 percent.

The Maritime Administration says it can support the incineration project by:

- Selling one or more small dry cargo vessels from the National Defense Reserve Fleet for conversion to chemical waste incinerators,
- Granting government Title XI mortgage loan guarantees for the construction of such ships and
- Selling one or more vessels in the reserve fleet and granting federal mortgage loans to pay for their conversion.



Reserve ships might become incinerators.

The sale of any reserve fleet vessel would be to a U.S. flag ship operator under competitive bid procedures, the agency says. Conversion would take place in a U.S. shipyard.

The American Eagle Foundation, which sponsored the Vulcanus demonstration in this country, "looks with real favor" on the government's proposed involvement.

Donald D. Carruth, president of the foundation, charges the EPA with *footdragging* and failing to push ocean incineration because of the agency's dedication to land-based disposal methods.

"All satisfactory techniques for the destruction of chemical wastes will be needed to help resolve our enormous pollution problems," he says.

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EPA Budget Reflects Nationwide Fiscal Constraints

The Environmental Protection Agency's proposed operating budget for fiscal year 1977 totals $718 million, a decrease of $53 million from the current figure.

EPA Administrator Russell Train said the cutback reflects the "strict constraints of the total national budget this year." Even so, he said, the funds will allow the agency to continue most of its programs at current levels and will provide increases in some high-priority areas.

The most significant increase is $10.6 million for the water supply program. This will double the current level of grant funding to states to help them assume primary responsibility for drinking water supply and underground injection control programs. About 41 states are expected to take on the program by the end of fiscal 1977, EPA estimates.

Next year's budget includes no new funding authorization for municipal wastewater treatment facility grants. EPA believes that the unobligated funds of about $10 billion currently available will be sufficient to meet grant needs through Sept. 30, 1977.

EPA BUDGET AUTHORITY
(dollars in thousands)

	1976 Current Estimate	1977 Request	Increase (+) or Decrease (−)
Air	$145,756.7	$143,424.2	$−2,332.5
Water Quality	238,279.0	178,583.3	−59,695.7
Water Supply	32,173.8	42,784.1	+10,610.3
Solid Waste	15,684.6	15,736.4	+51.8
Pesticides	44,290.3	39,807.1	−4,483.2
Radiation	6,185.7	4,901.3	−1,284.4
Noise	10,573.5	10,285.0	−288.5
Interdisciplinary	36,944.3	36,019.8	−924.5
Toxic Substances	6,205.3	7,367.0	−638.3
Energy Research & Development	100,000.0	96,427.0	−3,573.0
Management & Support	127,346.8	134,756.8	+7,410.0
Scientific Activities Overseas	4,000.0	6,000.0	+2,000.0
Facilities	2,100.0	2,100.0	—
Total	$771,520.0	$718,192.0	$−53,328.0

Outlays for municipal wastewater treatment plants are projected at $2.35 billion for 1976, $3.8 billion for 1977 and $4.6 billion for 1978.

Section 208 water quality management planning grants are slated to receive $15 million in the 1977 budget, $38 million less than this year's appropriation. The money will be used to complete the funding of areawide planning and to support statewide planning. Total federal support of section 208 grants will reach $235.4 million by the end of 1977.

Pesticides abatement and control resources will be cut $5.3 million, due primarily to the phase-out of an applicator training program.

Although the $159.4 million proposed for research and development is $7 million below the 1976 level, EPA says it is enough to continue efforts in key areas. These include the possible correlation between air pollution exposure and cancer incidence, the development of new techniques for purifying drinking water supplies and the development of new water supply quality assurance techniques.

The $97 million earmarked for energy research and development is down $3 million from this year's appropriation. The money will help insure that new energy technologies are environmentally sound and will speed their implementation.

Goodyear Plant Recovers; VC Production Expanded

The Goodyear Tire & Rubber Company plans to spend approximately $650,000 to expand production of polyvinyl chloride dispersion resins at its Niagara Falls plant.

The move comes a little more than a year after the plant was forced to shut down 50 percent of its resin production because it was "economically unfeasible" to comply with new federal vinyl chloride worker exposure standards, according to plant manager John Gilmore.

The new production unit, designed to meet federal safety standards, is expected to bring plant capacity up to more than 75 percent of the level before the shutdown.

MCA: What it is

Manufacturing Chemists Association is a non-profit trade association of United States and Canadian company members representing more than 90% of the production capacity of basic industrial chemicals within these countries. MCA is engaged in basic activities pertinent to the chemical industry, including many related to environmental health. Activities are handled by MCA's staff and by committees composed of industry specialists who serve without compensation from the Association. MCA offices are at 1825 Connecticut Avenue, N.W., Washington, D.C. 20009.

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