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## MUSKIE BILL WOULD BROADEN CLEAN AIR ACT

WASHINGTON -- Sen. Edmund Muskie last week introduced a broad bill (S.3229) to extend the Clean Air Act. Included was a sharp increase for funds to be spent during the next three years for NAPCA's fuels and vehicles research program (Sec. 104), including grants. Muskie's bill is similar to but broader than bills now in the House (story, p. 3).

Muskie, in introducing the measure, also took a swipe at the Federal Aviation Administration, which plans to set its own standards for aircraft exhaust. Part of Muskie's bill would give HEW authority to set these standards.

Briefly, Muskie's measure, which was introduced as "a response to the growing public pressure for a clean environment and a recognition that certain kinds of air pollution control activities will not or cannot be carried out without federal intervention," would give HEW authority to:

- Carry out low-emission vehicle research;
- Extend and expand the authorizations of the clean air act for research and demonstration;
- Require public hearings in connection with the adoption of any plan for the implementation of air quality standards and to require 30 days notice of any hearing on air quality standards;
- Promulgate national emission standards for new and used aircraft, vessels, and other vehicles capable of moving in interstate commerce;
- Set emission standards for existing commercial vehicles;
- Require assurance of compliance with national emission standards for a period beyond the initial sale of a motor vehicle, vessel, or aircraft, etc.;

• Set standards for low emission vehicles and to test and certify vehicles as to their compliance with those standards;

• Set national emission standards for certain organic solvents, paints and other oxidants which, because they are manufactured and shipped in interstate commerce, cannot be effectively controlled at their point of use;

• Establish an office of noise pollution abatement and control;

• Authorize the office of noise pollution abatement and control to study the health and welfare ramifications of noise and to include recommendations for needed legislation in a report to Congress.

The amount of money Muskie asks for Sec. 104 is \$45 million for Fiscal Year 1971, \$125 million for FY 1972, and \$175 million for FY 1973.

For FAA, Muskie said there is "good reason not to give the Federal Aviation Administration primary responsibility for air pollution control or for any other area of environmental protection in view of the recent remarks of" the FAA administrator. Muskie quoted John Shaffer as saying "pollution is one environmental problem that's not as bad as it is obvious."

For noise pollution, Muskie calls for setting up an office of noise abatement that would study the effects of noise and such things as the projected growth of noise levels in urban areas through the year 2000. Some \$30 million would be earmarked for the noise office.

For general authorizations for the Clean Air Act, Muskie asks \$150 million for Fiscal Year 1971, \$175 million for FY 1972 and \$200 million for FY 1973.

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## HEW SHAKEUP MAY PREVIEW MAJOR SHIFTS

WASHINGTON — The Nixon Administration may be planning a major shake-up of the government's environmental agencies, including shifting some programs to different departments. Announcement is likely when the President delivers his State of the Union address next month. He has been expected to make a major statement about the environment at that time.

Last week, in what could be a forerunner to a bigger move, HEW's Consumer Protection and Environmental Health Service was abolished. Secretary Robert Finch moved the Food and Drug Administration out of the organization that had also included the National Air Pollution Control Administration and the Bureau of Solid Waste Management, which is under the CPEHS Environmental Control Administration. Now solid wastes and NAPCA are grouped together in a new Environmental Health Service. Both are still under Charles C. Johnson, who had been head of CPEHS.

The shift in FDA had been made after study by an HEW team that also recommended setting up the Environmental Health Service. This study group, headed by deputy under secretary Frederic Malek, found that HEW environmental programs "have not received the priority attention that they deserve."

The study group also called for setting up a "top level task force" to define what HEW's environmental policy should be and how HEW's efforts would mesh with other departments. They also called for the task force to look at current HEW efforts in environmental health "and make recommendations for needed changes."

## MORE PERSONNEL SHIFTS AT FWPCA

WASHINGTON — FWPCA is making some more personnel changes. Among the latest: Dr. Allen Hirsch who recently had been chief of operations, becomes assistant commissioner for program plans and development — a post he had held earlier. John Barnhill, who at one time was deputy commissioner, has been moved to scientific and technical advisor to Commissioner David Dominick. In another move, which was not confirmed, it was learned that Eugene Jensen, FWPCA regional director in Charlottesville, Va., may move to Washington to become chief of operations for FWPCA — the post Hirsch has just left.

## PURE OXYGEN LOOKS GOOD FOR WASTE PLANTS

BATAVIA, N.Y. — Based on one year's testing here, Union Carbide's pure oxygen process for wastewater treatment has more than lived up to expectations, according to local reports. Company officials told newsmen that use of the process could reduce both capital and operating costs of new municipal or industrial treatment plants by 25 to 50%, depending on size.

The pure oxygen process has been operating on one train of Batavia's two-train, 2.25 mgpd municipal plant.

The process applies a proprietary method to improve contact between pure oxygen and the liquor in an activated sludge process. According to Carbide's Linde Div., which developed the process, this action produces BOD removals of up to 93%. Capital costs are cut because of reduced need for aeration equipment, while operating costs are lowered because of smaller power demand, according to Linde. Also lowered are sludge handling costs, process control of dissolved oxygen is said to be eased, and odor problems are lessened, Linde claims.

The process also apparently improves nutrient removal somewhat, but further study is needed in this area.

Linde has shown the Batavia installation to one group of consultants already and is planning another show on the west coast. Several more test and pilot installations are in the works. The process is also applicable to high-BOD industrial wastes and it has been tested with promising results on paper mill wastes, Linde notes.

## MORE AIR REGIONS DESIGNATED AND PROPOSED

WASHINGTON — HEW has designated or proposed boundaries for another series of air quality control regions. Recent actions include:

- Boundaries designated for an interstate region in the Providence, R.I. — southeastern Massachusetts area. The Metropolitan Providence Interstate Air Quality Control Region includes all of Rhode Island and 35 cities and towns in southeastern Mass.
- Boundaries proposed for an interstate region in the Birmingham, Ala. area, to include five counties. Consultation on the proposed region will be held Dec. 17 at the University of Alabama, Birmingham.
- Boundaries proposed for an interstate region in the metropolitan, Toledo, Ohio, area, including two counties in Ohio and Monroe County in Michigan. Consultation is scheduled for Dec. 19, Toledo Public Library.
- Boundaries proposed for an interstate region in the Chattanooga, Tenn. area, including Hamilton County, Tenn., and two counties in Georgia. Consultation set Dec. 18 in Chattanooga.
- Boundaries designated for an interstate region including Steubenville, Ohio, Weirton, Wheeling, West Virginia. Included are two counties added to the original federal proposal. These counties were added, says HEW, as a result of a request from state and local officials. The region had been scheduled to be designated at a later time, but was moved up "at the request of the two states involved."
- Boundaries designated for an interstate region for the Louisville, Ky.-New Albany, Indiana area. The Louisville interstate air quality control region includes Jefferson County, Ky., and Clark and Floyd Counties in Indiana.

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## AUTO MAKERS DESCRIBE EFFORTS; NADER SAYS THEY'RE FAILING; FORD HAS NEW PROGRAM

WASHINGTON — The major automobile makers say they will be able to meet stringent exhaust emission standards planned for the mid-1970's with devices now being tested experimentally.

Spokesmen for the four major companies appeared last week before the House Commerce Committee public health subcommittee that started hearings on extension for three more years of the Clean Air Act. Also appearing at the two days of hearings was the acting Surgeon General Dr. Jesse Steinfeld, accompanied by Dr. John Middleton, NAPCA Commissioner, and Charles Johnson, administrator of the Consumer Protection and Environmental Health Service. No further hearings are planned until next year, when the petroleum industry is scheduled to testify.

The auto makers, fresh from a hearing in New York called by Rep. Leonard Farbstein (D-N.Y.), (see story following), also feel the road to lower exhaust emissions is through the internal combustion engine, rather than developing alternative sources of power. But both Ford and General Motors say they will produce gas turbine trucks and buses—General Motors by the end of 1971.

The industry also says it is spending millions of dollars for air pollution research. In answers to subcommittee questions, General Motors said that over the past three years it has spent over \$125 million, and is now putting out about \$30 to \$40 million per year. In its research labs, GM has 400 to 500 people actually employed in air pollution research, including alternative vehicles and emission control.

Ford says it is spending \$28 million to \$30 million annually for air pollution control, again including exhaust control and a look at alternate sources, and has some 700 people in the U.S. working on control of emissions (see story this page on Ford's plans).

The auto makers cautiously agreed with the possible need to certify production line vehicles rather than prototypes as is now done. Studies are showing that drivers are not maintaining the vehicles to manufacturer recommendations and thus the exhaust control devices are not staying up to federal standards (following story).

Proposals are expected next year from HEW to deal with production line vehicles. HEW also is making moves to tighten regulations on "the whole area of fuels," and to control imports of foreign automobiles that might not meet federal exhaust standards.

Dr. Middleton told the committee that the time period for designating air quality control regions is expected to shorten from the present three to four months. This will come about, said Middleton, as "local interests" and interests of the state governors towards air pollution control increases.

HEW officials cautiously endorsed the amount of money in one bill before the committee (HR 12934). This bill calls for spending \$110 million over the next three years for Sec. 104 fuels research program. Steinfeld said this funding level is "in line with what we feel the nature of the job is."

Steinfeld warned the committee that techniques must soon be found to control sulfur oxide pollution. If techniques now being developed and awaiting full-scale demonstrations are "not soon shown to be practical, there will be

no widely acceptable way to prevent the continuing increase of sulfur oxides pollution."

### NADER BLASTS DETROIT ON AUTO EMISSIONS

NEW YORK — Ralph Nader wants GM dissolved into a group of small companies, a \$300 million budget given to NAPCA, and an excess profit tax aimed at automakers and dedicated to development of pollution free vehicles.

Speaking here before a hearing on automotive exhaust called by 21 New York and New Jersey Congressmen, Nader blasted the auto industry for failing to apply a systematic approach to the development of an emission-free vehicle. He also called upon the federal government to use its procurement and funding powers to create incentive for the production of "less-polluting" vehicles. This could include the establishment of government production facilities on such vehicles.

Nader charged that it will cost Californians \$600 million for pollution control devices and added fuel consumption for the first year alone.

Nader also charged that an "undisclosed" NAPCA sponsored study reveals that 1969 production models are failing emission tests at an alarming rate. Federal regulations require CO and hydrocarbon emission levels be maintained through 50,000 miles with one major tune-up at 25,000 miles. A study of 107 rental automobiles, however, revealed that 53% of the autos tested failed either the CO and/or hydrocarbon tests after only 11,000 miles on the average, according to Nader. He said that of the 44 cars tested in theertz fleet, 68% flunked the hydrocarbon or CO test at an average of 12,600 miles.

*NAPCA officials say there is nothing secret about the study but that it hasn't been fully "digested" yet by the agency. Some observers feel the emission performance of rental cars is an indication of "maintenance" procedures more oriented to shirking employment and window washing than to keeping the vehicles in tune.*

### FORD OUTLINES POLLUTION REDUCTION PROGRAM

DETROIT — Ford Motor Co. is stepping up all phases of its anti-pollution program. While many aspects involve essentially budget increases, some projects listed last week by board chairman Henry Ford II are new to the auto industry. The company's goal, according to Ford, is "to minimize pollution from its products and its plants in the shortest possible time." To achieve this aim, some \$9 million is being committed over the next two years. Specific actions listed by Ford include:

• The company is proceeding with a limited test of a used car air pollution control kit consisting primarily of carburetor and manifold attachments designed to reduce hydrocarbon and carbon monoxide emissions from pre-1968 Ford-built cars by as much as 50%. Ford has discussed the project with the federal government and proposed a large-scale cooperative field test at Ford expense utilizing one or more government fleets.

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• The company will make available to independent garages, as well as its own dealers, a compact instrumentation system to measure hydrocarbon and carbon monoxide emissions. The instrumentation, developed jointly by Ford Service Research Center and Honeywell, is already being sold to some Ford dealers and marketed independently by Honeywell.

• Before the end of 1971, Ford will develop for sale to fleet operators a number of experimental vehicles containing new emission-control equipment that will be ahead of government pollution restrictions then in effect.

• A limited number of experimental low-emission cars will be offered to pollution control authorities in both California and Washington, D.C. for their cooperative evaluation.

• Ford will step up its quality control procedures to fix on some feasible way of screening all vehicles for abnormal emission levels.

• New recommendations are expected to be announced within the next twelve months on optimum fuel compositions to reduce emissions. The "most logical" conclusion, the elimination of lead additive, probably will not be recommended because, according to Ford, "the petroleum industry would need several years to convert to non-leaded gasoline."

• Research projects investigating alternate power sources will be continued, but seemingly not augmented to the extent of the other programs.

#### UDALL RECOMMENDS "CLEAN" FLORIDA JETPORT

MIAAMI — A clean, undeveloped port without automobile access for passengers or cargo has been recommended for south Florida by Stewart Udall, former Secretary of Interior. Udall was hired for a study by Dade County Port Authority after conservationists attacked the jetport site 40 miles west of Miami as a threat to Everglades National Park.

Udall's overview report suggests a high-speed "aeromobile" operating on an air track so as not to interfere with southern flow of water to the national park. It would connect with existing and new terminals in major cities along Florida's southeast coast. Udall calls for sophisticated sewage treatment systems at the jetport and he predicts a lessening of the pollution threat through advances in jet engine design by 1975.

To finance the jetport, Udall recommends an environmental surcharge on passengers and shippers using automobile service. The money would be used to keep the airport pollution free and to buy surrounding land to prevent urbanization and industrial exploitation.

Commissioning the \$75,000 Udall study was part of Port Authority effort to dilute conservationists anger, but there is little evidence the play is working. Joe Browder, regional director for the National Audubon Society, said, "Mr. Udall has seen right to the heart of our environmental problems. This is an extremely thoughtful report, but it is politically unrealistic."

Though he did not mention an alternate site for the jetport in his report, Udall said in an interview that the facility should be at least seven miles north of the 39-square-mile area where \$13 million has already been spent to ac-

quire land and build one runway.

Heart of the Udall report is a warning that without the jetport to generate money to acquire more and more land in the Big Cypress area west of Miami the region's water and wilderness resources will be destroyed through haphazard private development and exploitation. He predicted the national park will not survive 10 more years of encroaching urbanization.

In an earlier development, Transportation Secretary Volpe announced that the federal government considers the current jetport site as too great a threat to the water resources of south Florida and to the park, and ordered an alternate location be found.

Volpe did, however, offer to allow training flights at the existing runway for a one-year trial, conditional on strict control on pesticides and herbicides, plus monitoring of any changes in the ecology.

Alternate sites under consideration include a state-owned one west of Palu Beach and the Air Force base at Homestead, 35 miles south of here. It had been hoped the Udall study would provide guidelines toward finding an alternate site.

#### SIERRA CLUB SEEKS ENVIRONMENT AMENDMENTS

SAN FRANCISCO — The Sierra Club, militant conservationist group, will seek federal and state constitutional amendments insuring the right to a "clean, healthy environment."

Michael McCloskey, upon his appointment as executive director at a national meeting of the club's board of directors here last week, said the campaign would be launched beginning next year. McCloskey had served as chief of staff since last May, when executive director David Brower resigned from his post.

The Sierra Club directors also called for a ban on the manufacture and use of DDT and similar pesticides and asked that stringent limits be placed on vehicles so that by 1975 "air purities will be insured." If necessary, the directors added, the internal combustion engine should be banned.

#### WORK STOPS ON L.A. POWER PLANT

LOS ANGELES — The Los Angeles Department of Water and Power has suspended construction work on a new power generating unit at Scattergood steam power plant near Playa Del Rey. Action followed notice by the county Air Pollution Control District that authorization to construct the new unit had been denied, following adoption of Rule 67 (which regulates nitrogen oxide emissions) by the county Board of Supervisors the preceding week (AWN, Dec. 8, p. 2).

The LADWP will appeal to the LAAPCD hearing board for relief, and, according to Floyd L. Goss, LADWP chief electrical engineer and assistant manager, other procedures will be discussed with the Board of Water and Power Commissioners and with attorneys.

Goss again warned that without the plant to meet the needs of 1972, local blackouts were inevitable.

## NAPCA OUTLINES WHAT IT WANTS TO SEE IN IMPLEMENTATION PLANS

DURHAM, N.C. -- One hundred and fifty state and local air pollution control administrators gathered here last week to hear what NAPCA has in mind for them to submit as air quality implementation plans. They weren't too happy with what they heard.

Basic to the implementation, according to NAPCA, will be a mathematical model. If the states don't put one together, NAPCA will. The model is to be used as a tool to demonstrate that the control strategies proposed by a state will actually get the air quality control region down to the air standards set for it.

Here's how the whole thing works. Starting with the actual ambient air conditions in an air quality region (AQR), the state agency applies a "roll-back" formula to find out what exact tonnage of sulfur oxides and particulates must be eliminated to get the AQR down to the levels adopted as standards. Next you start trying out -- on paper -- the various control strategies available in order to reduce the air loading to a point which will satisfy the standards.

If the existing regulation for particulates won't get you under the limit, for example, you can plug in an additional process weight regulation or perhaps a heat input regulation if you don't already have one. The combination of controls selected is then fed into the mathematical model along with input on background conditions and meteorology. If the model indicates the standards will be met at the maximum receptor point in the AQR, then the strategy is acceptable.

*Suel modeling, however, is only as accurate as the emission inventory used as the basis for testing the various strategies, and there isn't control agency in the country with a really good emission inventory.*

In addition, NAPCA officials clearly indicate that the strategies selected will have to demonstrate how the job. "We expect you to err on the side of more control rather than less," declared Acting Deputy Commissioner Edward Tuerk.

Control strategies, according to NAPCA, may reflect developing technology and resources. Utilization of low sulfur fuel was used as an example. If sufficient quantities aren't currently available, they will be made available by the competitive race to fill the vacuum created by prohibiting the use of high sulfur fuels. "Forcing technology" was acknowledged by Tuerk as a prime reason for the implementation plans.

Timetables included in the implementation plans "must provide for meaningful increments of progress over relatively short intervals, such as one or two year periods..." And NAPCA does mean short. Since "techniques and/or equipment are available for controlling most sources of particulate and sulfur oxides" the particulate standard for St. Louis -- which was used as an example during the two-day workshop -- should be achieved by Jan. 1, 1973, while the sulfur oxide standard should be achieved by Nov. 1, 1972. Timetables submitted will have to be "specific and precise," according to Tuerk.

Each of the implementation plans submitted must speak to the specifics of how the control strategies are to be enforced and how agency manpower is to be deployed.

Plans from agencies which are part of interstate AQR's must reflect workable plans for interstate cooperation on

abatement programs.

Plans must also reflect the agencies' permit or registration procedures, air surveillance schemes and the specifics of monitoring locations, methods, lab techniques, averaging times and sampling frequencies.

The legal basis on which state agencies operate must also be included in the plan and it must demonstrate that the agency is in fact legally enabled to carry out the abatement program. If sufficient legal "muscle" is not available, the plan should state when such authority can be expected to be granted. NAPCA legal experts told the workshop that state definitions of air pollution should be sufficiently broad to encompass welfare as well as health, so that actual injury need not be proved before abatement action is taken. They also said that registration or permit systems should have specific time limitations or renewal dates, as should variances.

Most controversial aspect of the workshop was the outline of NAPCA's requirements for inclusion of "emergency episode plans." NAPCA wants these plans to indicate that an "alert" will be sounded when any one monitoring station in an AQR experiences a violation of the interim (24-hr.) standards. If any station, therefore, has 0.10 ppm (24-hr. average) SO<sub>2</sub> with 2 COH units -- which NAPCA says is roughly equivalent to 240 ug/m<sup>3</sup> suspended particulate -- an alert will have to be sounded.

NAPCA officials admit that in most major cities the going will be ringing all winter long. They feel, however, that these alerts will force air pollution more into the public limelight, thereby enhancing abatement activities. Many control agency people present strongly disagreed. Most felt that alerts being called at such frequent intervals would soon make the public bored with the whole thing.

The "emergency episode plans" will have to include specific reduction levels for specific major sources and will have to include planned action at the alert, variance and emergency levels. The emergency level should be called "when it appears imminent that an average concentration of 0.40 ppm SO<sub>2</sub> and 6 COH will persist for 24 hours." NAPCA goes on to say, however, that "It would be advised to wait and see if the 24-hr. criteria were met before action is taken. Using a 6-hour averaging time would be helpful."

NAPCA is planning two more workshops in Kansas City (Jan. 19-20) and San Francisco (Jan. 22-23). A guide-line book on the implementation plans will be developed but it is not expected for a number of months.

Putting together the implementation plans, as compared with setting the standards, is like comparing simple arithmetic with integral calculus. Aside from the lack of good emission data on which to produce a viable mathematical model, many state agencies are also feeling in manpower needed to undertake such an extensive project.

Clearly, however, state agencies will be under tremendous pressure in regard to their submissions. Meeting standards is going to cost the industrial community -- which is really going to get it in the neck -- more money for control expenditures than it ever dreamed possible. While state administrations can bow to political expediency by "laying" super-low ambient air standards, they

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must now tell how they are to be achieved. The answers won't make for a very merry Christmas for the local Chambers of Commerce. -- TMD

# TPAL CANAL APPROVED, BUT FWPCA CALLS MEET

MIAMI - Florida Power and Light Co. last Tuesday received approval from the Dade County Pollution Control Officer to build a six-mile cooling canal at its Turkey Point plant on Biscayne Bay. The \$7-million canal is the company's engineering solution to thermal discharge that last summer adversely affected a sizeable area of the bay.

But on the same day approval was announced, there was word of federal interest that could set the company's plans back indefinitely. It appears that Gov. Claude Kirk requested a state-federal conference on the matter at the urging of Florida conservationists and pollution control officials in Tallahassee.

Interior Secretary Walter Hickel announced that a conference is scheduled for Feb. 24 to determine whether the thermal discharge of Turkey Point might cause a serious imbalance of the bay ecology. Conservationists claim the 95-deg. limit of the Dade County pollution law is three degrees too high. They cite evidence of damage started at the 92-deg. mark last summer. (Hickel also announced a Jan. 20 conference in Pensacola to discuss Escambia River problems.)

Dade County pollution control director Paul Leach approved the utility's plan for the cooling canal with certain modifications to achieve greater turbulence and greater amounts of dilution water from the bay. The changes are estimated to increase the cost of the canal by \$1 million dollars.

Under terms of a variance agreed to by the county pollution board, Florida Power and Light must have its canal engineering approved by Feb. 1, 1970 and have the canal completed by July 1, 1971.

Pending before the Florida Supreme Court is an appeal of a condemnation decision that gave the utility the power to dig the canal across property owned by D.K. Ludwig, the international shipping magnate. Ludwig claims the canal across the bayfront of his Seaside property would make it impossible to develop the land into a high-class housing development.

Florida Power and Light has two conventional generating units at Turkey Point (664,000 kw) and is building two nuclear units scheduled to go into operation in 1971-72.

## POLLUTION CONTROL LABELS REQUIRED ON CARS

WASHINGTON -- Automobile manufacturers will be required in 90 days to label all new vehicles that have been certified as meeting air pollution control standards.

HEW last week issued regulations requiring a label be mounted in the engine compartment of the vehicles. Included will be engine tune-up specifications; to aid mechanics in maintaining control system efficiency.

The regulations, issued under the Clean Air Act, may have the side effect of "protecting buyers from a practice that has developed in which refurbished imported cars are passed off as new," said HEW.

## BREAKDOWN OF STATE ALLOCATIONS UNDER \$800 MILLION WASTE PLANT FUND FOR FY '70

| State             | Total Entitlement    |
|-------------------|----------------------|
| <b>TOTALS</b>     | <b>\$800,000,000</b> |
| Alabama           | 14,672,000           |
| Alaska            | 1,637,900            |
| Arizona           | 6,327,100            |
| Arkansas          | 8,599,200            |
| California        | 65,554,900           |
| Colorado          | 8,072,600            |
| Connecticut       | 11,117,600           |
| Delaware          | 2,541,600            |
| Dist. of Columbia | 3,780,500            |
| Florida           | 21,353,200           |
| Georgia           | 17,305,100           |
| Hawaii            | 3,398,600            |
| Idaho             | 3,743,800            |
| Illinois          | 42,287,100           |
| Indiana           | 20,047,500           |
| Iowa              | 12,203,800           |
| Kansas            | 9,839,400            |
| Kentucky          | 13,625,600           |
| Louisiana         | 14,513,900           |
| Maine             | 4,981,500            |
| Maryland          | 13,550,900           |
| Massachusetts     | 21,963,500           |
| Michigan          | 33,633,200           |
| Minnesota         | 14,926,100           |
| Mississippi       | 10,377,700           |
| Missouri          | 18,692,600           |
| Montane           | 3,174,500            |
| Nebraska          | 6,668,600            |
| Nevada            | 1,681,900            |
| New Hampshire     | 3,369,200            |
| New Jersey        | 25,737,700           |
| New Mexico        | 4,956,900            |
| New York          | 69,938,200           |
| North Carolina    | 19,681,800           |
| North Dakota      | 3,676,100            |
| Ohio              | 40,850,400           |
| Oklahoma          | 10,596,800           |
| Oregon            | 8,134,100            |
| Pennsylvania      | 47,538,200           |
| Rhode Island      | 4,341,100            |
| South Carolina    | 11,028,700           |
| South Dakota      | 3,615,600            |
| Tennessee         | 15,815,700           |
| Texas             | 40,479,900           |
| Utah              | 4,655,900            |
| Vermont           | 2,542,800            |
| Virginia          | 17,302,800           |
| Washington        | 12,528,700           |
| West Virginia     | 8,798,000            |
| Wisconsin         | 17,130,900           |
| Wyoming           | 2,240,300            |
| Guam              | 1,667,200            |
| Puerto Rico       | 11,085,000           |
| Virgin Islands    | 1,523,200            |

## GERMANS PLAN DDT BAN: SWEDES EASE THEIRS

**BONN.** — DDT will be banned also in West Germany, according to sources in the country's Ministry of Health, where legislation is currently being prepared. However, it will be at least a year before a new law comes into effect and Germany joins the U.S., Sweden, Denmark, Canada, the U.K., Italy, Hungary and Czechoslovakia in outlawing this kind of material.

Meanwhile officials in the agricultural and health ministries will strive to keep DDT levels as low as possible by applying existing laws which prohibit certain levels in foodstuffs being exceeded. The ultimate aim is a law which will also cover household insecticides, and will permit the government to step in not only when a health hazard has been proved, but also when there seems to be some danger. Statistically, the German population is more in danger from imported than homegrown foodstuffs since its own levels of DDT application are exceedingly low. Between 1966 and 1969, DDT consumption fell from 13 to 9 grams per acre. This compares with 46 grams per acre in the U.S., and 53 grams in Italy.

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**STOCKHOLM** — Sweden's total ban on DDT has been eased a little. The Swedish Poisons Board has given a dispensation to the forestry industry, and will allow coniferous seedlings planted in 1970 to be treated with DDT.

Under the original Swedish law announced last March, DDT would be totally banned as of Jan. 1, 1970. However, the forestry industry persuaded the decision, saying that it has no other way to protect seedlings from insects that strip the bark and kill the plants. The industry uses about 13 metric tons of DDT annually, which is about a fifth of the total used in Sweden.

## STONE & WEBSTER/IONICS SO<sub>2</sub> PROCESS

**NEW YORK** — Details were revealed last week of a stack-gas sulfur dioxide removal process being developed as a joint venture by Stone & Webster Engineering Corp., Boston, and Ionics, Inc., Watertown, Mass.

Key to the process is a just-patented electrolytic membrane-diaphragm cell that regenerates caustic soda used for washing the stack gases in a wet scrubber. The sulfur is recovered as pure, dry SO<sub>2</sub>, which may be fed to an acid plant or liquified for sale. Key to the economics of the system is the use of the "spinning reserve" capacity, which electric utilities are required to maintain, as power supply for the electrolytic cell. The system would be provided with enough tankage to operate for 30 hours without the cell if the reserve had to be otherwise utilized.

The developers had worked up a cost estimate based on installation at an existing midwest power plant consisting of two 600-MW coal-fired units. Using 3.5% sulfur coal, a cost of 2.3 mills/kwh for the spinning reserve power, and a 90% recovery of SO<sub>2</sub>, they come up with a capital investment of \$30 million and annual operating cost of \$2.7 million. Assuming production of 344,000 tons/yr. of high-purity sulfuric acid marketed at a "dump price" of \$17/ton, the whole

thing ends up with a net after-tax profit of \$260,000.

This analysis is based on a very conservative estimate of equipment life, according to S&W/Ionics. The figures compare very favorably with other SO<sub>2</sub> processes, and the by-product acid should be easier to market than the ammonium sulfate or weaker acid produced by some of the others.

The process was piloted in a 400-cfm. test unit for several months last year in Tampa, Fla., and later in Watertown, N.Y. Right now, the developers are seeking support from a consortium of utility companies, and NAPCA to build a 75,000-cfm. (25,000-kw.) demonstration plant.

## CHEMICALS BLAMED IN BRITISH SEABIRD DEATHS

**LONDON** — The Irish, who have a long history of shipwrecking over the Irish Sea, have an unprintable expression for that stomach-turning stretch of turbulence. Their English brothers have now come up with a quotable one.

They are calling it the "Ditch of Death," in memory of the 10,000 common seabirds called guillemots and fifty seals that have mysteriously been washed up dead, but unmarked, on beaches up and down the British west coast during the last few weeks.

Public outcry has led to a major government-led inquiry, and early tests by scientists show that the dead birds are riddled with chemicals — chlorinated hydrocarbons of the polychlorinated biphenyls (PCB) family.

The scientists aren't yet prepared to say the chemicals and deaths are related, but the evidence is building. According to Dr. K. Mellanby, director of the government's Woods Wood experimental station, Humbermouth, levels of PCBs to 400 ppm of PCB have been found in fifty sample fish carcasses examined so far.

"We are alarmed because the normal amounts found in the past were very small — 1 to 2 ppm.," says Dr. Mellanby.

While he agrees that PCB appears to be a likely culprit, Mellanby and his researchers are cautious because they know little about toxicity of the compound, only recently discovered as a pollutant. The Swedes were first to identify PCB in 1966 during routine investigations into levels of pesticides in fish. One theory is that the guillemots may have picked up PCB from fish they feed on. This has not yet been proved, nor is there any evidence humans are in danger from fish they eat.

A big question is how the PCB gets into the sea. It's believed it is dumped, but it's difficult to know by whom. There are no restrictions on dumping outside the three-mile limit and PCB's are widely used as sealants and additives in many industries.

"One could say that there will be a possibility of PCB in sewage discharge of any industry that uses anything from a light oil to a wax or resin," says one investigator.

Sole U.K. producer of PCB is Monsanto, which produces amounts of "some consequence," a Monsanto spokesman said, at Newport, Monmouthshire. "Our plant is dry. There's no effluent to discharge into the sea," he said. Additional amounts are imported from the U.S., France and Germany.

Apart from the birds, about fifty grey seal pups were washed up dead off Cornwall recently. Investigations show the seals died from malnutrition, but their livers are to be analyzed for traces of DDT and PCB.

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