Letters

Water Pollution

I would like to second the policies advocated in Philip H. Abelson's editorial "Water pollution abatement: Goals and costs" (28 June, p. 1333). One item that needs to be further discussed is the impact on human health and survival of spending money to clean up pollution.

Abelson notes that industry will have to invest an additional $8 billion to meet 1977 requirements of "best practicable" water pollution control technology at existing plants. However, industry will have to spend an additional $9.5 billion to meet the 1977 standards for thermal discharges. The costs for thermal plant discharge elimination then exceed those from all other industrial wastes put together. When one compares the known incidence of disease and environmental destruction from the discharge of heavy metals, carcinogens, mutagens, pesticides, and so forth, to the known incidence of disease from thermal discharges (zero), one is somewhat appalled at the relative emphasis given to the thermal pollution abatement. A more realistic approach would be to evaluate each discharge in place and compare the benefits to be achieved by its elimination or reduction with the costs to achieve such benefits. From this a more realistic standard could be set (*1*).

Although the Environmental Protection Agency is supposed to be a total environmental agency, it appears that the waste effluent standards are set without regard to the effects on the atmosphere and lithosphere. In the case of thermal pollution elimination standards, these effects would include the environmental costs of treatment of the chemicals concentrated in the circulating cooling water (possibly an even more severe environmental insult than the hot water); the decrease in efficiency and consequent increase in air pollution resulting from the greater use of fossil fuels in central generating stations; and the fog, drift, icing, and acidic rains that occur in the immediate vicinity of plants because of the combination of sulfur dioxide from power plant stacks and the water vapor from the cooling towers. We need to change the law to require environmental impact statements for these effluent guidelines, and we need to have the Office of Technology Assessment determine the actual effect rather than the desired effect.

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References

1. For a more detailed exposition of these views, see F. L. Parker, in *Energy Production and Thermal Effects*, B. J. Gallagher, Ed. (Limnetics, Inc., Milwaukee, Wis., 1974).

Abelson's editorial may come as a surprise to some environmentalists. Nevertheless, in this connection, I want to call attention to one of Czechoslovakia's regulations that borders on genius: "A plant's water intake is to be down stream of its discharge."

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Air Quality Control

In the context of her report "Clean air: Congress settles for a restrained coal conversion plan" (News and Comment, 21 June, p. 1269), Constance Holden states inaccurately and perhaps unfairly that "intermittent control strategies" proposed by certain industries are a potent threat to the Clean Air Act, while states moving ahead to secondary standards are, by contrast, supporting it. The intended effect of the act, indeed, of any air pollution control system, is the resultant ambient air quality. The suggested emission control strategies, including the use of tall stacks to penetrate inversions and of fuel-switching techniques which permit taking advantage of the dispersive properties of the atmosphere, are some means toward that end. If they can be shown to be most cost-effective in any given situation, they should be encouraged by control authorities and not summarily rejected.

An integral part of the dispersive strategy, of course, is the ability to maintain control of the ambient concentration of pollutants by use of adequate predictive mathematical models of the atmosphere (*1*). Fortunately, this technology has advanced rapidly in recent years and will now permit a total "systems approach" to air quality control (*2*) well beyond the restraints of fixed emission standards.

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References

1. R. J. Bibbero, *IEEE (Inst. Electr. Electron. Eng.) Spectrum* **8**, 47 (December 1971).
2. ——— and I. G. Young, *Systems Approach to Air Pollution Control* (Wiley-Interscience, New York, in press).

Quality of Chemical Compounds

In the past few years, several instances in which the deficient quality of commercially labelled chemical compounds, and in some cases of particular shipments, have been reported in the literature by unhappy users. As a result of these and many other unreported experiences, the International Union of Biochemistry and the International Union of Pure and Applied Chemistry have established a joint Ad Hoc Committee on Radioactive and Isotopic Specifications of Labelled Compounds, of which I serve as chairman, to assess the problems and take whatever action seems appropriate. The committee would like to be kept informed of problems that arise and would be happy to have constructive suggestions and comments from both users and suppliers of labelled compounds.

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Science and Public Policy

In his editorial of 10 May (p. 617) Brewster Denny states that there is a surplus of available science advice for state and local governments, but since the mechanisms are weak, "state and local officials, their staffs, . . . civil service bureaucracies . . ., and citizens will simply have to be brought up to a level of understanding at which decisions involving technical issues can be made through the political process."