

Certain fundamental questions should be resolved in this as well as in water and land pollution. The magic words of "accelerated research programs" which appear in all the legislation on pollution abatement endow the Federal agencies with a responsibility for developing expertise in dozens of industrial complexes from the combustion engine to the synthetic chemical fibers. In the absence of real and enthusiastic industrial participation, possible only in a climate of joint understanding, such agency expertness in science and technology will be most difficult, if not impossible, to create.

A second dilemma in the air pollution effort should be recognized. The drive toward controls for internal combustion engines to reduce noxious effluents adequately may fall short of present promise and hopes. More important, however, is that the enforcement agency, in the drive, not lose sight of possible more desirable alternatives. In essence, what is required is a radical new approach to the problem of motive power for transportation. Conceivably, the electric powered automobile for many metropolitan uses, the return of metro transit and the creation of more efficient combustion equipment should be explored intensively. The accomplishment of such departures from the installation of devices on existing motive power units requires an integration of effort among a number of Federal agencies as well as with industry. Machinery for such integration is not only lacking, but interagency comity still leaves something to be desired.

An analogous situation prevails with respect to ultimate correctives in the power industry. Fly ash and sulfur dioxide removal is contingent upon the availability of equipment, upon variation in chosen fuels, upon powerplant location, and upon economic feasibility. In these objectives again multiple agency impact and private industry cooperation hold the keys to success. Is such joint implementation by HEW implicit either in legislation or in administrative behavior?

It must be reiterated that, despite widespread concern with the problem, little or nothing appears in most hearings and only limited study has been given to the engineering and economic aspects of proposed performance levels for combustion equipment in relation to air pollution. Physiological tolerances vis-a-vis capital investment costs to attain acceptable levels are rarely discussed or presented.

The Building Research Advisory Board of NAS-NRC recently reviewed this gap in its study for FHA of flue-fed apartment house incinerators. Some 60,000 of these units are operated in the United States. A theoretical ideal goal was the production of no more than 0.65 pound of particulate emission per 1,000 pounds of flue gas. However, a level of 0.85 was recommended by the ad hoc committee as an immediate goal, with 0.65 for some future attainment. Even this more lenient first goal would entail an average investment of \$2,500 per unit. A performance level of 0.65 apparently would require electrostatic precipitators at some \$8,000 to \$12,000 apiece. In addition, they are complex to maintain on such small installations.

In any event, immediate complete compliance with 0.65 would necessitate capital investments from \$480 to \$720 million. For the lower limit, some \$150 million would be entailed. Performance levels hence should be closely related to practicable and economical equipment commensurate with physiologic and aesthetic necessities or desire.