



New Air Quality

Standards Are Tighter but Compliance Is Distant

by J.W. Anderson

The nation's latest air quality standards will tighten pollution emissions rules. But they also contain careful compromises, postponing compliance. And the margin of health safety to be ensured remains as hazy as ever, thanks to a flaw in the Clean Air Act that remains uncorrected.

In a directive signed on July 16, President Clinton ended the sharp debate between the Environmental Protection Agency and its critics in and outside the administration. EPA got, with only minor exceptions, the goals that it had originally proposed last November. But it gave some ground in the timetables for the standards and the process of achieving them.

The new standards do three things. They reduce the permissible concentrations of ground-level ozone. They continue the present rules for coarse particulate matter in the air. And they set a new standard for fine particulate matter—particles with a diameter of 2.5 microns ($PM_{2.5}$).

Long Lead Time on $PM_{2.5}$

In terms of public health, the new standard for $PM_{2.5}$ is by far the most important. The administration calculates that these fine particles cause some 15,000 premature deaths a year in this country. In contrast, EPA did not argue during the standard setting process that ozone causes deaths. Rather, ozone's best-documented effects are short term and reversible, although it can aggravate diseases like asthma and over years of exposure may damage people's lungs.

While there is good reason to consider $PM_{2.5}$ dangerous, actual monitoring data have been gathered in only a few cities. Some industries and scientists, in congressional testimony, urged a five-year delay for further research.

Over the spring, a compromise began to take shape in congressional hearings. Since in any case it would

take several years to set up the complete national network of monitors to measure $PM_{2.5}$, and several more years to collect the baseline data that the standard requires, a delay for more research would not significantly hold up actual implementation.

President Clinton seized that idea and wrote it into his July 16 directive. The new $PM_{2.5}$ standard is now nominally in effect and states will immediately begin setting up monitors (with federal funding). But meanwhile EPA is to undertake another five-year cycle of health research and review. Until it has completed this process and formally considered whether to adjust the standard, the President said, it is not to require any state or local area to take action under it.

Under this schedule, in the years 2002 through 2005 EPA will identify the local areas that are out of attainment with the standard. The states will then have three years to submit implementation plans.

This long lead time raises an issue that the administration has not yet fully addressed. Since it believes a substantial death rate attaches to $PM_{2.5}$, it may want to consider taking action sooner than 2005. One possibility might be incentives for industries to begin curbing these emissions voluntarily, before the mandatory reductions take effect.

OTAG Option on Ozone

The new standard for ground-level ozone represents a significant tightening. When this year's ozone season began last spring, one hundred and six counties failed

to meet the old standard. EPA has calculated that about three times as many counties will fail to meet the new standard.

Some of those counties, and the states in which they lie, protested the tighter standards and charged that they would interfere with economic development. EPA replied that many of those counties would soon be brought into compliance by a separate initiative to reduce the pollution that blows from one state into another. In an organization called the Ozone Transport Assessment Group (OTAG), EPA worked with state governments throughout the eastern half of the country. Over the past two years OTAG has developed models to estimate the amounts of ozone and its precursor gases that the wind transports from one state into another, and EPA is now developing rules to reduce them.

President Clinton picked up this point. His directive said that in states cooperating with the OTAG strategy, no additional ozone controls will be required in those local areas where OTAG's models indicate that reductions in long-distance transport will suffice to bring them into attainment.

In any case, no area will be designated out of attainment with the new ozone standard before the year 2000.

With a focus on the long-distance transport of ozone and its precursors, EPA intends to implement the new standard primarily by requiring large industrial plants, especially electric utility generating stations, to reduce their emissions. The exhaust from their tall stacks contributes disproportionately to pollution transported on an interstate scale, according to EPA.

Reducing the emissions from those tall stacks further will be expensive, since the rules for them are already restrictive. But Washington has learned well that there is little public opposition to cleanup costs that are filtered gradually and invisibly through the regulatory system into people's electricity bills.

One question is whether this process will continue to operate quite so smoothly as the electric utilities are deregulated. Generating plants along the East Coast are under much heavier and more expensive restrictions than some of their competitors in the Midwest in areas already in attainment of the ozone standard. President Clinton's directive told EPA to reexamine its rules for new sources in nonattainment areas "in order to deal with issues of fairness."

Style Points

A basic issue in all environmental regulation is whether to be highly prescriptive, in what is often called the "command and control" style, or to allow people flexibility to work out their own ways of meeting goals. Each side of this continuing debate scored one important win in the new air standards.

Flexibility and efficiency won when the President's directive declared "a strong desire to drive the development of new technologies with the potential of greater emission reduction at less cost." EPA, the directive said, is to "encourage" concepts like a Clean Air Investment Fund, capping the costs of emissions control at \$10,000 a ton. If a source—a factory or power plant—faces higher costs, it can comply by paying a set amount into the fund, which will use the money to stimulate new technologies by buying cheaper reductions from nontraditional and small sources.

But command and control won the esoteric struggle over Subpart 2 of Part D of Title I of the Clean Air Act. Subpart 2 was enacted in 1990 by a Congress that deeply mistrusted both the administration and the states to carry on the flagging campaign against ozone. It produced a set of legal requirements carried down to the finest detail and it allowed little administrative discretion. Under a legal interpretation offered earlier by EPA, Subpart 2 would have vanished altogether with the adoption of the latest standard. But some in Congress and in the environmental movement protested and, in another compromise, for those metropolitan areas with high ozone levels, Subpart 2 will continue in force until they finally attain the old standard. That gives Subpart 2 a very long life, since it appears to be impossible for some cities to meet the old standard, let alone the new one.

Pursuing Risk through the Floor?

But there is a greater flaw in the Clean Air Act—and, although widely acknowledged, the problem won't be addressed this year. Inaction was inevitable, given the mistrust between the Democratic administration and the Republican majority in Congress. However, the missed opportunity needs to be noted.

When written in 1970, the act was based on the assumption that each pollutant has a threshold below which it has no effect on human health. The act

The new standards

Ozone: The standard used to be a concentration of 120 parts per billion (ppb) in the air averaged over the highest hourly reading in a day. One exceedance per year was permitted over a three-year period, which meant that a local area—usually a city and its suburbs—was in compliance if, over three years, the fourth highest reading at any monitor was no higher than 120 ppb.

The new standard is an average concentration of 80 ppb over eight hours. Instead of counting exceedances, the new standard will take the fourth-highest eight-hour reading at each monitor each year and average it over three years. If that average is no higher than 80 ppb, the area will be in attainment. The reason for the change in method is to provide a more stable index that will be less likely to flip areas in and out of attainment with the vagaries of the weather.

Particulate matter: The old standard applied to PM₁₀, particles with diameters up to 10 microns. The annual limit was an average concen-

tration of no more than 50 micrograms per cubic meter over three years. The daily limit was a concentration of no more than 150 micrograms per cubic meter. The new standard continues the rules for PM₁₀, with a slight adjustment of the computation procedure.

Much more important, it adds new rules for smaller particles with diameters no larger than 2.5 microns, PM_{2.5}. For PM_{2.5}, the annual standard is 15 micrograms per cubic meter, generally calculated as a three-year average of all the readings on all the monitors in an area. The area that attains this standard will probably also be in compliance with the 24-hour standard, designed to control hot spots. The 24-hour standard is 65 micrograms per cubic meter, calculated as a three-year average of the 98th percentile reading at each monitor separately. As in the case of ozone, violation of the 24-hour standard at any single monitor in an area will put the whole area out of attainment. That possibility can raise issues about the location of monitors.

directed EPA to find that threshold and set the standard for each of the common air pollutants below it, with “an adequate margin of safety.” Over the years, with more sophisticated measurements and better epidemiology, scientists have found health effects at lower and lower concentrations of ozone and particulate matter.

As data appeared showing health effects for particulate matter below the previous standard, the American Lung Association sued EPA for failing to carry out the requirements of the act. A federal judge set a deadline for EPA to review the standard and, because the government was vulnerable to a similar attack on ozone, the agency began to move on both pollutants together. The new standards are not the result of EPA’s initiative. As is often the case in environmental policy, they were forced by litigation.

The requirements of the act now raise a question about the next step. What happens when the next round of studies shows health effects at even lower concentrations? EPA observes that no one knows whether there is any threshold for PM_{2.5}. As for ozone, it is entirely possible that it produces health effects at background levels—that is, levels that occur naturally. The new standards for both PM_{2.5} and ozone are not far above background levels.

EPA acknowledges that even the standards just adopted do not protect everyone from harm. It also emphasizes, in the ozone rule, the importance of increased protection for unusually sensitive people who experience distress at lower concentrations than the population as a whole.

But EPA declares that the act does not require standards that provide zero risk. Rather, it says, the act only requires standards that “protect health with an adequate margin of safety.” The protection of health is undefined, and as the administration points out, with many legal citations, the courts give EPA great latitude in defining an adequate margin of safety.

In other words, the new standards protect health adequately because they protect health adequately—and anyone who wants a better definition of the term can go to court and let the judges write it.

In an ideal world, EPA would have gone to Congress and pointed out that the present language of the statute is pushing the standards down to background levels, at which point they will become unenforceable and merely aspirational. But the Clinton administration does not want to open up the Clean Air Act to revision, since it cannot control the consequences in Congress. For their part, the congressional Republicans have concluded that attacks on the environmental protection laws cost them votes in the last election and they do not want to repeat the process in the next one.

Meanwhile, EPA has put the standards more or less where the present flawed law requires, based on the present data as it interprets them. As for actual implementation, the White House has deferred that until the next administration—or in some cases to the one beyond.

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