

Auto lead standard debate

Still another controversy broke out last week over the Reagan administration's Environmental Protection Agency — this one concerned with how the present gasoline lead standard of 0.5 grams per gallon is interpreted by enforcement officials. The EPA "has secretly raised the allowable gasoline lead limits for large refiners by 10 percent" by allowing them to sell gas with lead levels as high as 0.549 gpg, charged Clarence Ditlow, of the Center for Auto Safety, a nonprofit organization formerly affiliated with Ralph Nader. While the debate continued, however, some scientists said that enforcement of the 0.5 gpg standard was not the most important issue and that the standard itself must be re-examined.

The dispute began on May 25 when Ditlow made public a copy of a letter from EPA to an executive of Mobil Oil Corp. stating that "an average lead level of 0.549 gram per gallon would not lead to enforcement action by EPA." It was signed by Richard Kozlowski, director of the Agency's field operations and support division. In a letter to EPA Administrator Anne Gorsuch that same day, Ditlow said that "if this relaxation is left unchanged, then 10,000 additional tons of lead will be emitted into the air during the next year above the 90,000 tons presently being emitted." That much more lead in the environment "could make a significant difference for thousands of children," said Edward Groth of Consumers Union and a member of a 1980 National Academy of Sciences committee that published the study "Lead in the Human Environment."

But rounding off numbers below 0.55 to 0.50 "has been EPA's policy since October 1980 when the 0.5 standard went into effect," Kozlowski told SCIENCE NEWS. "It's consistent with what we do for other groups of pollutants and with the type of reduction [officials who set the standard] intended." Kozlowski has worked as an EPA enforcement official since the current lead standard was set in 1980.

"Why, then, do companies start receiving written assurances only between the third quarter of 1981 and the first quarter of 1982?" asked Ditlow. "I requested every letter like this and the earliest one they sent me was dated November 2, 1981." He also noted that the average lead content of gasoline produced by large refiners was down to 0.469 gpg in the spring of 1981 but had risen to 0.516 by the end of the year, after Gorsuch became EPA Administrator.

"I can't imagine oil companies risking the penalties of exceeding 0.5 gpg (up to \$10,000 a day) before the end of last year without getting something in writing first," said Ben Jackson, an EPA air quality enforcement official until April 1980, now a consultant to a Washington, D.C., law firm.

"I have no personal knowledge of averaging like this taking place when I was there," he said, "but, of course, it's possible."

The current lead standard "is based on what was known in 1971," says Groth. "But since then we've advanced light years in our understanding of the health hazards of lower and lower levels of lead." Although EPA is considering changing the lead standard, its proposals have been to raise or rescind, rather than lower, it.

—L. Tanglely

Acid rain: Talking up a storm

As the shadow of acid rain creeps across an increasingly large area of North America, members of Congress are trying to cope with the scientific evidence and uncertainties underlying their attempts to legislate solutions to the problem. Last week, the Senate Committee on Environment and Public Works held a two-day technical inquiry on the effects of acid rain. Seventeen scientists presented research findings, new evidence and advice. Some of them advised against an immediate legislated decrease in sulfur dioxide emissions until more information on causes and effects was available. All agreed the problem needed further study.

Acid rain is the result of chemical reactions in the atmosphere that turn sulfur and nitrogen oxides emitted from fossil-fuel-burning power plants, industries and vehicles into acids (SN: 2/2/80, p. 76; 2/16/80, p. 106). "Pure" rain has a level of acidity (pH) near 5.6. At the hearing, Ellis B. Cowling, a leader in establishing the National Atmospheric Deposition Program, which monitors chemical changes in rain and snowfall, said that "precipitation with an average annual pH of 4.6 (ten times more acid than 'normal') is occurring in every state and province of eastern North America," covering two-thirds of the continent's total land area. The effects have extended to the Appalachians in North Carolina, where for two years in a row fish kills have been linked to acid rain. Cowling noted that acid substances can be deposited as gases, particles or dissolved materials in precipitation.

Cowling stated, and the scientists agreed, that acid rain, combined with the movement of toxic metals like aluminum, had well-demonstrated harmful effects on fish and other aquatic life. However, the evidence of damage to forests and agricultural crops was less clear. Lance S. Evans of Manhattan College in the Bronx, N.Y., described a recent experiment that showed soybean seed yields decreased when the plants were exposed to simulated acidic rain. But he added that such reductions could go unnoticed in commercial production because other factors caused greater variations in annual yield. Plant responses vary greatly depending on

the species, environment and type of exposure, so studies must be done on a plant-by-plant basis, he said.

Arthur H. Johnson of the University of Pennsylvania said growth rates of trees in certain areas have decreased in the last few decades. These include pitch pine and shortleaf pine in southern New Jersey and red spruce in northern Vermont, where about 50 percent of the red spruce have died in the last 15 years. "Acid deposition is a plausible contributing or controlling stress," Johnson said, but other results suggest that acid precipitation, especially the nitrate component, "can stimulate growth, at least in the short run."

Despite many uncertainties, the documented effects of acid precipitation on streams and lakes warrant action, said Cowling. Last year, a National Academy of Sciences report recommended a 50 percent reduction in acid deposition in the most seriously affected areas, achieved by controlling sulfur dioxide emissions from electrical generating plants. At the inquiry, Volker A. Mohnen of the Atmospheric Sciences Research Center, State University of New York at Albany, testified that atmospheric science was not yet in a position to reliably establish links between sources and deposition areas.

Mohnen said, "What limited research has been done to date indicates that the reduction in sulfur dioxide emissions called for by the pending legislation would most likely *not* result in an equivalent reduction in acidic deposition in the sensitive areas and might result in no measurable decrease in acid rain in those areas."

Orie L. Loucks of the Institute of Ecology in Indianapolis, Ind., showed that the recent downward trend in sulfur dioxide emissions was matched by a reduction in sulfuric acid deposition. The rain's acidity stayed about the same because of compensating increases in nitric acid content, generally considered less harmful.

Loucks's concern was that "it is not technically possible to plan and carry out an orderly reduction of 10,000,000 tons of sulfur dioxide emissions within a decade," as mandated in proposed legislation. He suggested a more gradual approach, but added there would be a significant cost in not dealing with the problem.

Cowling said, "It probably will take at least five years to debate the scientific and management issues sufficiently to formulate an appropriate management plan. Also, at least another five years probably will be required to achieve an actual reduction in emissions."

Sen. George Mitchell (D-Maine), sponsor of one of the Senate's acid rain control bills, asserted that study of the problem was not enough. "The argument that we don't know enough to act has been used against every piece of environmental legislation introduced in Congress," he said. Sen. Robert T. Stafford (R-Vt.) said, "Failing to take action now puts an entire section of this country at risk." —I. Peterson