Cleaning Up EPA's Dioxin Mess

By KATHRYN E. KELLY

A panel of scientists has told the Environmental Protection Agency that the much-revered Emperor Dioxin has no clothes. The question is, will EPA finally see the naked truth about dioxin before it allows a multibillion-dollar mistake to grow into a trillion-dollar blunder?

The scientists, chosen by EPA to serve as an independent panel of the agency's Science Advisory Board, have challenged the agency's long-held position on dioxin risk, chiding the agency for failing to keep politics out of the scientific process. That ruling should give a big impetus to the effort currently under way in Congress to force EPA to give greater weight to scientific opinion before issuing its rules.

A Ubiquitous Byproduct

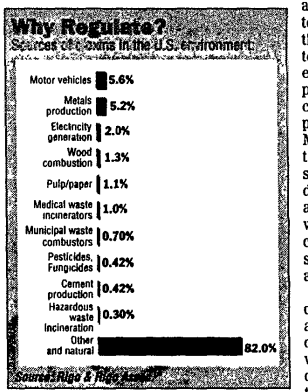
It is difficult to overstate the emotional, fiscal and international impact of the EPA's position on dioxins over the past decade. A ubiquitous and natural byproduct of combustion, dioxins are generated by automobiles, forest fires, wood stoves, barbecues, even cigarettes. Incinerators and pulp and paper mills, generally believed to be the major source of dioxins, account for just 3% of emissions. Because combustion is common, dioxins are found in essentially all components of the global ecosystem, and virtually everyone carries minute amounts of dioxins in their body fat.

No one disagrees that dioxins are the most toxic compounds around to a guinea pig. It is assessing the effects on humans at current widespread levels of exposure that is at the heart of the panel's review.

EPA's position is that current levels of exposure are already posing unacceptable risks; the agency limits human daily intake of these widespread compounds to an amount equivalent to one billionth of one grain of sand. The cost of complying with these rules already stands at several billion dollars in the U.S. alone. If EPA's claim of additional health effects had been found to be valid, it would have given the agency justification for requiring even lower dioxin emissions from paper mills, incinerators, and other regulated sources. Other countries whose environmental policies are based on that of the U.S. would likely have followed suit.

The EPA documented its position in a three-volume, nine-chapter report on dioxins issued last fall. The document reportedly took more than four years and several million dollars to produce. The agency then selected 39 scientists and asked them to peer-review EPA's report and respond to 43 questions submitted by the agency. The scientists were drawn largely from academia and chosen by EPA for their expertise and objectivity.

In a stunning indictment of the lack of defensible science in setting EPA policy, the independent panel told EPA that the agency had overstated the risks of dioxins, that its conclusions were not scientifically defensible and that it could not endorse the report as currently drafted. Further, the panel said it could not agree with the document's overall characterization of risk to humans.



The scientific panel's conclusion was distinctly at odds with EPA's long-held position that the family of compounds known as dioxins and related compounds, including PCBs, were leading to adverse effects on reproductive, immune, and hormone systems; to abnormal fetal development; and even to cancer at current levels of exposure. If anything, the scientific panel told EPA, the evidence pointed toward no excess risk at these levels of exposure; the scientists directed EPA to go back to the drawing board and reconsider its conclusions.

This is not the first time a scientific panel has taken the agency to task on the issue of dioxins. In 1988, another advisory panel said the data did not support EPA's conclusions regarding the ability of dioxins to cause cancer. However, that advisory panel fell short of recommending that EPA change its position, citing lack of enough information to offer a better alternative.

This time, the weight of scientific evidence was overwhelming. The firmness with which scientists rejected EPA's claims clearly shows why the politics of environmental management needs to be kept out of the scientific review process. And herein lies the problem: Regulators don't look at scientific data the same way scientists do.

Take 20 studies, 19 of which show negative results. In the scientific arena, the weight-of-evidence approach to evaluating data would tend to favor the 19 studies, all other things being equal. Not so in the regulatory arena, where one positive result is sufficient for policy making. "Regulatory agencies don't want to disprove anything; they just want to know if there is enough data to support a regulatory decision," explained a participant at the May 16-17 meeting of the scientific advisory panel. "If the data are ambiguous, a regulatory agency will simply pick and choose the data that support its position and ignore the rest."

Hence EPA's frequent assertion of adverse effects of dioxins, despite the vast weight of evidence contradicting that position. "EPA's review highlights findings that demonstrate associations between dioxins and human cancers, while ignoring contradictory data," said panelist Michael Gough of Congress's Office of Technology Assessment. "That's not science, that's policy."

The dilemma is compounded by the inherent conflict of interest created when EPA conducts research on the very issues it regulates. Like asking a fox to design the building specifications for the chicken coop, asking EPA to conduct scientific research and then regulate objectively on the basis of those results creates a hopeless conflict of interest. "EPA is doing EPA's research in EPA labs with EPA employees under EPA oversight. How could they not have a vested interest in the outcome?" said another scientist who participated in the May meeting. "Scientific research needs to get out of EPA and out of agency oversight, and be brought back into the harsh light of peer review."

Many scientists, here and abroad, would agree. Much of EPA's flawed position on dioxins has been based on internal research, much of which has not met international standards for scientific review. The agency's conclusions based on these data have met with harsh criticism from the scientific community, both in the U.S. and in other countries.

The French Academy of Sciences has been particularly critical of EPA's dioxin report, publicly saying it had looked at the same data and arrived at very different conclusions. EPA's response? "There really are no dioxin experts in France, so I don't know who has done their evaluation," said an unnamed EPA source cited in the Oct. 14, 1994, issue of Risk Policy Report newsletter. That there are no dioxin experts in France will no doubt come as a surprise to the many scientists at the prestigious International Agency for Research on Cancer based in Lyon.

Legislating Science

If EPA can't keep politics out of its science, it is likely Congress will. Regulatory reform legislation—passed by the House and about to come to the Senate floor— will force the agency to conduct risk-assessment and cost-benefit studies. There are understandable concerns that the bills place too much burden on agencies by requiring them to prove that the benefits outweigh the costs of their rules. But the concerns are readily offset by the staggeringly high costs of the status quo—billions of public and private dollars spent complying with standards like the dioxin rules, which produce no commensurate gain in health or the environment.

Bringing science back into the regulatory process should result in a dramatic improvement in human health and environmental protection, without increased cost. In a time of limited resources and competing priorities, we can't afford anything less than what we already pay for.

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