

Waterborne emissions are harder to generalize about, but the evidence seems to suggest that water quality has improved in many areas. Volumes of municipal solid waste continue to climb, total releases of airborne toxins have stopped increasing, and the total amount of hazardous waste may be declining. The problem lies in attributing these changes to the regulatory system. Davies and Mazurek correctly note, "It is neither conceptually nor factually correct to assume that, because declines in many pollutants have followed investment in pollution control programs, the decline is due to the programs" (p. 95). There are several problems. Emissions are very much a function of changes in the structure of the economy, the drop in manufacturing and the rise of the service economy. Also, as the authors note, much emission reduction behavior is voluntary. "Voluntary compliance has significantly reduced pollution below what it would otherwise be" (p. 15). In the much-vaunted federal transferable emission program to reduce sulfur dioxide emissions from power plants, current total emissions are below the total permit holdings. What is causing overcompliance? The authors conclude, "Overall, it is impossible to document the extent to which regulations have improved environmental quality" (p. 54).

Chapter 7 is a review of some of the benefit-cost analyses that assess the accomplishments of federal pollution control regulation. EPA recently concluded a set of congressionally mandated studies to estimate the historical benefits and costs of federal air pollution regulations. Not surprisingly, these studies found that the benefits have far exceeded the costs. The consensus among economists is probably the following: Net benefits have been substantially positive for the Clean Air Act and Safe Drinking Water Act, perhaps slightly negative for the Clean Water Act and the Resource Conservation and Recovery Act, and strongly negative for the Superfund law. As for cost-effectiveness, there is widespread agreement that the main approaches embedded in most federal environmental statutes have been substantially cost-ineffective.

Other chapters in this book include—

6 "Targeting the Most Important Problems" (EPA is not allocating its budget in terms of real risk factors, but apparently on a political basis);

8 "Social Values" (more public involvement would be good in EPA regulation making);

9 "Comparison with Other Countries" (the United States sets more stringent standards but relies too much on end-of-the-pipe approaches and, of course, on litigation in regulation and enforcement);

10 "Ability to Meet Future Problems" ("... for the next fifteen to twenty years, the economic and population growth of the United States will probably not lead us over the environmental cliff" [p. 262]).

CHANGES IN THE WIND

FEDERAL POLLUTION CONTROL IS STILL largely infused with the spirit of the 1970s. According to that view, pollution control is a technical and legal problem for which public authorities must step in, identify the best technical pollution control options, then mandate their use while pretending to overlook

cost considerations. But things are changing.

First, the notion that pollution is instead a behavioral and incentive problem is gaining much wider acceptance. This change accounts for the wider acceptance of the incentive-based approaches to pollution control, especially transferable permit programs.

Second, there has been a growing appreciation of the perverse incentives that lurk in naive command-and-control regulations. That is not to say that everyone has seen the light. Many in the environmental community still believe that any pollution-control law is better than no law.

Third, environmental politics are becoming less polarized (despite events seeming to the contrary—e.g., the World Trade Organization meeting in Seattle). There is more appreciation of the idea that, for many problems, reasonable people can together devise reasonable solutions—at the local level and often through voluntarism. The key is getting people the information on which they can act and make the appropriate tradeoffs. ■

Where Politics Trumps Science

Reviewed by S. Fred Singer

SCIENCE AT EPA: Information in the Regulatory Process

by Mark R. Powell

433 pp. Washington, D.C.: Resources for the Future, 1999

RESOURCES FOR THE FUTURE (RFF) is an independent research organization whose economics, natural resources, and risk-management programs have drawn support from the U.S. Environmental Protection Agency (EPA). RFF has nevertheless produced a report that severely criticizes EPA's use and management of science. But the report could have gone much further than it does. And it arrives at a rather surprising recommendation—a non

sequitur, in fact—which is to double EPA's science budget.

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According to the foreword, Powell's study "describes the basic inner workings of how scientific informa-

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tion is processed, used, and occasionally misused in the development of pollution control regulations” (p. ix). Science is employed both “as a means to truth and as a political weapon” (p. ix). Said to be the first attempt to describe that process, the RFF report adds considerable detail to the oft-cited shortcomings of EPA’s science programs.

POLICY VS. SCIENCE AT EPA

THE REPORT MAKES IT ABUNDANTLY clear that EPA steadfastly puts its regulatory role ahead of science. As Powell correctly notes, the main impediment to research at the EPA is that it is first and foremost a regulatory agency: “EPA’s primary constituencies tend—with some justification—to view science and analysis as an obstacle to regulatory action” (p. 120).

I can vouch for the accuracy of Powell’s characterization of EPA. On the day the agency was established in December 1970, my position as Deputy Assistant Secretary of Interior for Water Quality and Research was transferred to EPA, where I found myself as a newly minted Deputy Assistant EPA Administrator for Policy. Filled with youthful ambition and an idealistic desire to fight pollution, I met with EPA Administrator William Ruckelshaus (whom I had known when he was in the Department of Justice) and asked to be promoted to Deputy Administrator.

Ruckelshaus gave me a quizzical look—undoubtedly weighing my limited legal qualifications—and finally asked me what I would expect to do. I explained that a lot of science and economic analysis was needed to decide “how clean is clean” (the very words I used). I will never forget his very friendly response, as he patiently explained, “That’s not our job, Fred. Our job is to enforce the law and sue the polluters.” I decided then and there that I had no future in EPA. I promptly retreated to the Brookings Institution, as a Federal Executive Fellow. Six months later I left government service

for the University of Virginia.

A THOROUGH ANALYSIS

PREDICTABLY, EPA’S INITIAL REACTION to the RFF report has been defensive. In a staff memo, Office of Research and Development chief Norine Noonan calls the report “naïve” and guilty of “flawed analysis.” But Powell has done his homework. His analysis follows from eight detailed case studies of regulatory decisions and from interviews with some 100 persons.

Powell finds, not surprisingly, that “the environmental community is politically charged” (p. xii) and that there are

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“competing agenda, interests, and views within EPA, with bureaucratic jousting, congressional parochialism and the like influencing the use of science” (p. xii). Science often has little to do with how a decision is made: “EPA for a variety of reasons is unwilling, unable, and unequipped to address and acknowledge the uncertainties in the underlying science” (p. 134).

The report provides insights about how science can be mustered to “legitimize or undermine [positions] in political battles over policy choices” (p. 6). Powell cites some examples of congressional misuse of science but also reveals how environmental advocates misuse science as a political weapon. As he points out, the policy convictions (or prejudices) of many eminent scientists “reflect their environmental values more than their scientific credentials” (p. 7). Those same scientists also “create a political climate within the scientific community that makes it difficult for [others] to challenge the ‘politically correct’ views of the prominent scientist-activists” (p. 7). Powell quotes from a 1993 editorial by former Science editor-in-chief Philip Abelson, who wrote that the

accumulating history of environmental “doomsayers reveals their lack of judgment, respect for facts, and honesty” (p. 18).

Powell offers plenty of raw material in his eight case studies, from which one may draw one’s own conclusions—which may differ from Powell’s. I will recap some of the cases, then mention others that Powell should have included in his report.

A SAMPLING OF THE CASE STUDIES

THE CASE OF THE LEAD/COPPER DRINKING water rule neatly illustrates the use of sloppy science to support a regulatory action. The putative association between lead exposures and lower IQ and increased behavioral problems is well described in Cassandra Moore’s *Haunted Housing: How Toxic Scare Stories Are Spooking*

the Public Out of House and Home (Washington, D.C.: Cato Institute, 1997). There is still the nagging question whether the original data were falsified or the statistical analysis was poor. A side issue is the extent to which EPA pushed the phaseout of leaded gasoline because it fouled catalytic converters in automobiles, rather than for health reasons.

The third case study is about the continuing saga of the 1987 revisions of the National Ambient Air Quality Standards for Particulate Matter. Powell brings it up to date by discussing the May 14, 1999, decision of the Court of Appeals for the District of Columbia to remand EPA’s proposed standards for fine particulates and ozone, for which EPA did not provide scientific justification. “The Appellate Court was essentially saying that setting ambient air quality standards was too important for Congress to delegate to EPA” (p. 263).

The sixth case study takes up the 1989 asbestos ban and phaseout rule under the Toxic Substances Control Act, which created a new industry for the removal of asbestos from public buildings. EPA first issued an asbestos ban in 1979, prohibiting the use of

asbestos cement pipe in water systems. In 1984, the Natural Resources Defense Council (NRDC) petitioned EPA to prohibit the use of asbestos in motor vehicle brakes. The 1989 rule, banning all commercial uses of asbestos, forced school districts to spend uncounted billions of dollars that might have gone to better uses. Ironically, by disturbing asbestos already in place, removal efforts led to the release of more asbestos fibers into the atmosphere. Here, too, the agency ran afoul of the courts. In 1991, the Court of Appeals for the Fifth Circuit ruled, partly for procedural reasons, that EPA had not presented sufficient evidence for banning all commercial uses of asbestos.

The seventh case study looks at control of dioxins and other organochlorines from the pulp and paper industry under the Clean Water Act. Although there is much discussion of the reassessment of the cancer risk of dioxin, there is only brief mention of the huge release in Seveso, Italy, which caused little more than chloracne, a transient skin problem. Nor is there much discussion of the debacle in which the whole town of Times Beach, Missouri, was evacuated in 1983 at a cost of \$200 million—an operation for which a responsible official of the Centers for Disease Control admitted (in 1990) that there was little justification.

MORE CASES TO BE STUDIED

ONE WISHES THAT POWELL HAD DISCUSSED some of the more spectacular examples of EPA's misuse of science. EPA Administrator Ruckelshaus's 1972 decision to ban DDT, in spite of contrary scientific advice, may have the most far-reaching consequences of any EPA decision, especially if it leads to the global ban now being proposed by the United Nations. Malaria carried by mosquitoes kills 2.7 million people annually, and 300 million to 500 million new cases of malaria are reported every year. Only last year we read about encephalitis-carrying mosquitoes causing deaths in New York City. That threat was

fought with Malathion, one of the many pesticides that EPA wants to abolish.

Other notable cases are EPA's role in the deplorable Alar scare, its misuse of statistical analysis in claiming cancer deaths from second-hand smoke, and its campaign to promote a radon standard based on an outdated, linear (no-threshold) extrapolation of radiation effects. The same mindset about radiation risk has led to unreasonably onerous (and costly) requirements for the disposal of spent nuclear fuel.

Powell's critique might have been a good bit stronger if he had talked to the editor of the newsletter *EPA Watch* or

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with any of the EPA scientists who went public with a devastating attack on how the agency conducts its research and development (R&D) programs (letter to the editor, *The Washington Times*, June 10, 1998).

It is even more surprising that Powell never interviewed or even mentions Dr. David Lewis. Having spent three decades at EPA, microbiologist Lewis became so concerned about the misuse of science that he wrote letters to EPA Administrator Carol Browner and Vice President Al Gore. Having received no response from Browner or Gore, in 1996 Lewis published his views in the prestigious scientific journal *Nature*. He was then harassed and charged with various ethical and criminal violations, all thrown out by a Department of Labor mediation board. Before leaving EPA, Lewis filed several whistleblower complaints and, in settlements last year, was awarded \$140,000 in damages and legal fees.

Had Powell talked to me, I would have told him of a 1998 petition to the Supreme Court in which the Science and Environmental Project, with a number of engineering organization, filed as *amicus curiae* to overturn a lower-

court decision that deferred to EPA in defining "use" of a recycled pollutant. According to EPA, the total use of a solvent in a manufacturing operation is calculated by multiplying the volume of solvent times the number of cycles, whether or not there was any discharge into the environment. (Our petition was not accepted.)

Had Powell talked to former Office of Technology Assessment scientist Dr. Michael Gough, he would have learned that EPA based its recent air-quality standards in part on data from a study by the American Cancer Society (ACS). But EPA had never seen the data, which

ACS was unwilling to release for independent examination.

Another book could be written about EPA's role in delaying the final report of the National Acid Precipitation Assessment Program (NAPAP) until after passage of the

1990 Clean Air Act Amendments. NAPAP's conclusion—that acid rain was only a minor environmental issue—was then judged by EPA to be no longer "policy-relevant."

The scientific analysis of stratospheric ozone deserves a full treatment—especially the estimates that have led EPA to claim a \$32 trillion (!) benefit for a ban on the production of chlorofluorocarbons.

EPA also has been a leading advocate of the regulation of greenhouse gas emissions. Although much of the scientific analysis was carried out by the United Nations' Intergovernmental Panel on Climate Change, early EPA studies were responsible for raising unjustified fears about sea-level rise and other imagined disasters.

A future volume on the subject of science at EPA should deal with these various cases, giving them the same careful treatment that Powell gave to his eight cases. Such a book would explore the incestuous role of environmental groups (e.g., the American Lung Association and NRDC) that draw financial support from EPA but also sue EPA to enforce stricter standards. According to Missouri Sen. Christopher "Kit"

Bond, in the past five years EPA has passed out nearly \$1 billion to about a thousand such groups.

How much is EPA driven by its staff's environmental zeal and how much by the bureaucratic urge to enlarge its budget? Good question. After all, once the environment is reasonably clean, EPA could be out of a job unless it comes up with new and deadlier threats to justify itself.

POWELL'S NON SEQUITUR

OVERALL, POWELL DOES A GOOD JOB of evaluating the factors that affect the use of science in decisionmaking, the impediments to using science (see

Table 5.2 on p.119), and the difficulty of getting valid, unbiased scientific inputs. He recounts the history of EPA's R&D budget and decries EPA's lack of resources for research. EPA's total budget authority grew 10-fold between 1976 and 1996, but R&D funding has remained at about 5 percent of the EPA budget since Carter years. Surprisingly, perhaps, EPA controls only 15 percent of the federal environmental research budget.

Thus, in spite of his case studies, Powell recommends doubling EPA's research budget. In this, he follows the well-trod Washington path of identifying a failed government operation

and recommending more funding for it. I would recommend just the opposite: cut EPA's science budget to zero and do the necessary science elsewhere.

It would be a challenge to find a home for policy-relevant environmental research that is neither beholden to special interests nor perceived to be beholden to them. Perhaps Congress should reconstitute the defunct Office of Technology Assessment. As a sister agency to the General Accounting Office, it would be an independent source of scientific expertise for lawmakers, who must learn to take more responsibility for environmental legislation and subsequent regulation. ■