

## Science and an EPA Mission Statement

The Environmental Protection Agency needs a mission statement. It needs this mission statement for a variety of reasons, not the least of which is to enhance the development and use of science pertinent to protecting the environment. Given the constraints of our nation's deeply legalistic approach to environmental problems, the amount of scientific information that has been developed and incorporated into environmental protection should be a source of pride to everyone involved. Yet much more could have been and still can be done, particularly now that easy solutions to environmental threats are in our past. Providing a simple mission statement, a credo which focuses attention on a healthy environment beyond the pressures of a regulatory deadline, could be one effective step in that direction.

EPA was put together by President Nixon's administrative order in 1970. In contrast to federal regulatory organizations such as the Food and Drug Administration and the Occupational Safety and Health Administration, which have a defining piece of legislation that serves as their rationale and guide for action, EPA was formed from pieces of various federal agencies. The original EPA began with intact bureaucracies already administering existing laws, to which have been added yet new laws to regulate. There is no single statement that defines to EPA's employees its mission, its credo, or its reason for being.

Too often in administering its many different laws, EPA has found itself at cross purposes with what ought to be its goals, that of protecting public health and the environment. Intermedia issues, such as whether to burn wastes, place them in a landfill, or dump them in the ocean, tend to be dealt with on a piecemeal basis, often with conflicting regulatory approaches from different parts of the agency, and often at the expense of obtaining and using the best available scientific information. Consider, for example, the past practice of ridding wastewater of volatile contaminants by stripping them into air, allowing these contaminants to be breathed. At other times slavish adherence to regulations that are later rescinded makes EPA the butt of ridicule, at the cost of the respect that is necessary to enlist citizen participation in its goals. A recent example that left Alaskans both hooting and indignant was the attempted ban on the sale of pepper spray as a bear repellent while permitting its continued sale to repel human muggers. Alaskans enjoyed asking which EPA employee planned to use the control spray in a test of the efficacy and toxicity of pepper on a charging wild bear.

EPA needs a mission statement not only to rally its disparate elements around a common goal of protecting the environment, it also needs a mission statement to enhance its ability to obtain and incorporate the best possible science into its decision-making. In using the term "science" I include technology, long-term and short-term efforts, and work done by anyone, anywhere, not just that funded in the EPA budget.

Any mission statement that enhances the likelihood that EPA will work as a coherent organization will inevitably increase the value assigned to obtaining scientific information and to making scientifically credible decisions. Science inherently cuts across programmatic boundaries. Consider, for example, that EPA has organized its own Office of Research and Development (ORD) into divisions that are based primarily on traditional disciplinary expertise which, much like traditional university departments, provide the nurture that leads to the best science. While there are certainly specific laboratories and groups that focus on one medium such as

air, or on questions related to Superfund, they are located in an organizational component that inherently has a much broader view of its mission than any one law or regulation.

Further, a mission statement that included a role for credible science might help EPA come to an earlier recognition of the value of science and technology in dealing with environmental problems. This recognition has often come only after an initial attempt to meet a problem head-on was rebuffed, sometimes with significant casualties. The Superfund program is an excellent example. The original Superfund bill assigned billions of dollars to the cleanup of sites but nothing at all for developing the scientific information needed. The prevailing philosophy was to use a shovel and a bulldozer, and to sue the bastards. The primacy of lawyers over scientists in Congress and at EPA was evident from the fact that even demonstration projects of new scientific approaches to cleanup were prohibited on Superfund sites because they might interfere in the lawsuits, despite the fact that the technical approaches were little advanced from what Julius Caesar used to protect Rome's legions from the effluent of military latrines. At its 1986 renewal, specific funding for Superfund research was authorized. This research began in 1988, and a stream of new approaches to identify, assess, and remediate hazardous wastes has begun to emerge, many coming from the EPA-supported NIEHS Hazardous Waste Basic Biomedical Research Program.

As might be anticipated, the best understanding and support of scientific research and particularly of longer-term research, has come from the more senior levels of the agency. As a generalization, most EPA employees are involved in decision-making about regulations based on subsections of a specific law. As they are working under enormous pressure which focuses their attention on short-term informational needs related to a specific deadline, they are unlikely to understand, or care, about cross-cutting or longer-term research that is crucial for cost-effective protection of public health or the environment. And they are less likely to recognize the value of research that, through improving basic understanding of the interaction between chemical, physical, and biological processes, facilitates the primary prevention of environmental problems. In contrast, senior-level administrators have had their fill of chasing after what is already dirty. They more readily recognize the value of scientific information in providing the understanding necessary to deal with existing problems and prevent new ones.

Consider, as an example, the issue of support for developing better short-term tests for reproductive and developmental toxicants, an issue of serious concern to many in environmental health (1). Let us assume that this issue has a relatively high but not quite fundable priority for the Office of Air and Radiation, which gives higher priorities to research efforts which are only germane to air pollution; let us also assume that developing short-term tests for reproductive and developmental toxicants gets a similar priority ranking from the EPA offices concerned with water pollution, with toxics and pesticides, and with Superfund sites and waste management—in each case the programmatic office ranking more parochial issues higher. In such a situation, an EPA that focused on its overall mission would clearly recognize the need to increase the relative priority for research related to the needs of all of its program offices. Unfortunately, the processes involved in funding research at EPA have often led to the sacrifice of these important multimedia needs. Such tunnel vision has also had the unwanted impact of limiting EPA's ability to ask crucial, cross-cutting questions of the nation's scientific community, including universities and organizations such as NIEHS, and has limited its ability to enlist the nation's scientists in contributing to EPA's mission.

In every presidential administration, EPA leadership has made repetitive statements concerning the importance of science and technology. However, it is not enough for EPA administrators to say they support science. Consider this quote from Anne Burford: "When I entered EPA, zealotry poisoned every aspect of environmental protection and made intelligent judgment of the issues nearly impossible. We brought science and scientists into EPA to a greater degree than ever before. . ." (2). The point is not whether former Administrator Burford's statement is correct; the point is that no leader of EPA or any similar organization is ever going to say that they intentionally distorted the science or the scientific process. For most of our society, science is still a nominal good, and our leaders are expected to act as if they take scientific facts into account. It is not what is said but what is done to enhance the likelihood of obtaining the best available science and technology needed now and in the future.

Unfortunately, the major impetus to improve the national scientific contribution to environmental control has often occurred because something has gone wrong. The recognition that the credibility of all of EPA's regulatory actions is based on the credibility of its science too often has been reinforced by setbacks caused by an inadequate scientific underpinning for its regulatory approaches. Further, the history of EPA has amply demonstrated that the failure to provide a scientifically defensible base for any one decision becomes generalized in the minds of the regulated public and of congress to all of the EPA's decisions and becomes a means to discredit any of its actions.

This concern about the credibility of EPA's scientific and technical base for decision-making recently led former EPA Administrator William Reilly to convene a panel headed by Raymond Loehr of the University of Texas, who also heads EPA's

Science Advisory Board. The resulting document *Safeguarding the Future: Credible Science, Credible Decisions* (3) underlines the importance of a strong national science base for appropriate environmental decision-making and contains a number of suggestions for specific changes. Yet these changes can at most be expected to provide additional management tools to assist with the basic issue, the difficulty EPA has in fully recognizing the value of science in achieving the nation's goals in environmental protection, and in reaching out and obtaining that science.

It is important to me personally that I not be misunderstood as making an overall criticism of EPA's policy makers, its scientists, or the science it has developed. They have much to be proud of. Congress is considering a bill to elevate EPA to cabinet status, something long overdue. Congress should include in this bill a mission statement to help EPA's hardworking and dedicated employees look beyond the immediate task to the overall goal.

REFERENCES

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2. Burford, AM *Are you tough enough?* New York: McGraw-Hill, 1986.
3. U.S. EPA. *Safeguarding the future: credible science, credible decisions*. US EPA/600/9-91/050. Washington, DC:U.S. Environmental Protection Agency, 1992.

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