



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

April 21, 1992

EPA-SAB-EC-COM-92-006

Honorable William K. Reilly
Administrator
U.S. Environmental Protection Agency
401 M Street, S.W.
Washington, DC 20460

OFFICE OF
THE ADMINISTRATOR

Dear Mr. Reilly:

The Executive Committee of the Science Advisory Board invites your attention to the recently issued report of the National Research Council (NRC) Opportunities in Applied Environmental Research and Development¹, in particular the section on Anticipatory Research. We were briefed on this study, sponsored by EPA, ATSDR and NIEHS, at our 7 January meeting by Dr. R.N.L. Andrews, Chair of the NRC Committee preparing this report. The need for anticipatory research also was pointed out in our 1988 Future Risk report.² Given the importance of these issues and the initial, but limited, progress that the Agency is making in some of these areas, we would like to indicate our continuing support of and our persistent concern about the Agency's efforts in anticipatory research. This letter summarizes the principal arguments from these two reports, which are still relevant and germane.

Society frequently finds itself reacting to environmental problems when they become public crises and wishing that timely research had helped either to anticipate the crises or to provide means to deal with them. Acid deposition, biomagnification of DDT, asbestos fibers, and clean-up standards for ground water and soil, all are examples of problems for which we might have been better prepared. The absence or inadequacy of relevant scientific knowledge and understanding frequently makes it difficult to generate rational environmental policy to deal with problems as they arise.

There are a number of steps EPA should take to enhance its ability to anticipate environmental problems before crises develop, and before costly, after-the-fact clean-up actions are required. For example:

- 1) Continue to stress programs that monitor environmental quality (such as EMAP) and human exposure (such as NHEXAS) and develop ways to predict the ecological and health consequences of continued patterns of pollutant loadings.
- 2) Conduct expert workshops to review emerging basic science information for early indicators of potential environmental problems.

- 3) Monitor technological trends supported by socioeconomic responses and trends and develop ways to predict their environmental and health consequences. Conduct activities that develop goal-oriented, surprise-oriented, and other scenarios that reveal potential environmental and health problems.
- 4) In addition to improved early identification of new problems, conduct more basic research in areas we know need to be shored up for EPA to be ready to address emerging environmental quality and health needs.
- 5) Establish a dedicated group within EPA to conduct the above work and to prepare periodic reports on new, emerging, and escalating ecological, health, and welfare problems caused by environmental stressors. Ways to mitigate such problems should be identified.

The afore-cited reports provide more details on these and other proposed anticipatory research studies.

In light of your new vision for the Agency with its emphasis on information and data, it is important that anticipatory research be available to guide future directions and decision. The EMAP effort (#1 above) is clearly a step in this direction, a course which the SAB has encouraged in the past and continues to support today. We understand that #2 may be addressed as a consequence of the Expert Panel Report.³ We are also aware of initiatives being considered to upgrade basic scientific and social science research (#4).

However, we also encourage the Agency to think creatively about methods for identifying emerging technological and sociological trends that could generate or amplify environmental problems and develop scenarios that can reveal emerging problems (#3); and, most importantly, to organize and/or to analyze efforts #1 to #4 into a coherent strategy and operation (#5). We are aware that some of these actions are included in the February 14 Draft Research Issue Strategy for Anticipatory Research for Emerging Environmental Issues, but your special attention still seems needed to activate this long-considered, but long-dormant effort. We are also aware that the National Advisory Committee on Environmental Policy and Technology (NACEPT) has an interest in anticipatory research and could participate in any reviews from a policy perspective.

We look forward to your response and update on the status of these suggestions.

Raymond C. Loehr

Raymond C. Loehr, Ph.D.
Chair, Science Advisory Board

1. Opportunities in Applied Environmental Research and Development, National Research Council, National Academy Press, Washington, DC 1991 (pp159-171).

2. Future Risk: Research Strategies for the 1990's, SAB-EC-88-040, September 1988 (Recommendation No. 4 and Section 3.2 of Appendix D).

3. Safeguarding the Future: Credible Science, Credible Decisions, EPA/600/9-91/050, March 1992.