



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

November 9, 1993

OFFICE OF THE ADMINISTRATOR
SCIENCE ADVISORY BOARD

EPA-SAB-EEAC-COM-94-003

Honorable Carol M. Browner
Administrator
U.S. Environmental Protection Agency
401 M Street, S.W.
Washington, DC 20460

Subject: Commentary on Peer Review of Research Used in Support of
Environmental Policy

Dear Ms. Browner:

Since the Environmental Economics Advisory Committee (EEAC) is a relatively new Committee within the Agency's Science Advisory Board, we felt that this was an appropriate time to reflect on our activities during our first two years; as a result, we have developed some general recommendations regarding the role of peer review of scientific research conducted in support of environmental policy-making.

Based on our Members' experience both prior to joining this Committee and in the tasks we have undertaken as part of its activities, it is clear to us that the Agency's staff is attempting to develop and use research methods and findings at the frontiers of their disciplines in the areas relevant to EPA's regulatory mission. These efforts are to be commended and encouraged. They reflect well on the professional training of the staff and the incentives provided to them. Although our direct experience has been primarily related to the research in environmental economics, we believe the same experience is shared in a number of other areas where EPA staff plays a significant role in the definition and development of research.

Because the research is often directed at the frontiers of each discipline's scientific understanding, it is particularly important to incorporate peer review as an integral part of the development of the research design. In these cases, it is essential that the design, implementation, and final results of significant research initiatives be subjected to **external** peer review. Clearly, the need for such comprehensive involvement of peer review at all stages in research design and execution will depend upon the scale of the research undertaken. For modest efforts, review at the outset and then



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again prior to the use of final results would offer a prudent approach that recognizes the needs for evaluation and the scarcity of resources available for reviewing. As the size and complexity of the effort (as well as its importance for policy) increases, so also should the resources devoted to peer review.

Our experience with the economics components of the research efforts we have reviewed has found only limited evidence of systematic **external** peer review conducted prior to the time when documents were presented to the Committee for evaluation (This is apparently not a recent problem -- the Environmental Engineering Committee commented on the need to organize peer review efforts in a 1989 report on mathematical models [EPA-SAB-EEC-89-012]). We believe that this lack of peer review is a mistake, and understand that it is not consistent with Agency policy on peer review which calls for such review as an integral part of the research activities associated with EPA's regulatory policy. The resulting *de facto* assignment of the **primary** peer review to the SAB's Committees typically imposes that review at the wrong time in the process -- when the research is largely done. Equally important, the areas of research involved can relate to very specific "niches" within a discipline or sub-discipline where Committee members may not have the required expertise.


Ideally, **external** peer reviews (other than those performed by the SAB) would be conducted on an ongoing basis as research for large projects is underway, and the results of all such reviews made available to the relevant SAB Committee at the time a more comprehensive review of a research program or policy evaluation was undertaken. EPA staff should develop a network of external peer reviewers in topic areas where there will be continuing research interests. This could enable these reviews to be conducted prior to submitting materials to SAB Committees. In cases where SAB involvement at other than the final stage is desirable, Agency program officials should seek Consultations, through which the SAB can provide discussion and advice from various individual Members directly to the appropriate staff, outside the formal framework of a full review. The use of a Consultation in no way precludes a full review and a formal SAB report at a later stage of the effort.


A number of Members of the Committee have had past experience in designing and implementing peer review programs for proposed and on-going research activities. The Committee would be happy to advise Agency staff in developing an appropriate external peer review procedure for EPA research activities that is consistent with


completing these reviews prior to submitting materials to the EEAC for its evaluation and input.

We look forward to receiving your response to our comments.

Sincerely,


Dr. Raymond C. Loehr, Chair
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Dr. Allen Kneese, Co-Chair
Environmental Economics
Advisory Committee


Dr. V. Kerry Smith, Co-Chair
Environmental Economics
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