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PRESIDENT'S CORNER

AEEP Testimony before the
Subcommittee on HUD and Independent Agencies
Committee on Appropriations
of the
United States Senate
May 25, 1982

Mr. Chairman, members of the Senate Appropriations Committee, I appreciate the opportunity to appear before you. I am Francis A. DiGiano, Professor of Environmental Sciences and Engineering at the University of North Carolina-Chapel Hill and appear today in my capacity as president of the Association of Environmental Engineering Professors (AEEP). Our membership is comprised of faculty at over 100 major universities in 36 states in the U.S. and in Canada which have programs of study in environmental engineering.

Our members are engaged in both short-term and long-term research related to EPA's Congressionally mandated mission. Short-term research focuses on narrowly defined, regulatory problems and is closely directed by EPA. Long-term research, on the other hand, is more exploratory in nature and anticipates problems which will be of concern to EPA in the future. These research efforts have always been vital to EPA and its predecessors in accomplishing their goals. Over the past 20 years, the educational programs I refer to have produced most of the environmental engineers who now work in industry, state and federal agencies, and consulting engineering firms.

AEEP is deeply concerned about the lack of direction in EPA's Office of Research and Development as evidenced by the lack of the EPA Administrator to nominate a new Assistant Administrator to fill the vacancy created over a year ago. Undoubtedly, these conditions have not only contributed to a lack of direction, but also to a FY 83 budget for R&D which is totally inadequate to meet the Agency's and the nation's needs.

The mandate of Congress, as set forth in several excellent pieces of legislation, emphasizes the need for research to solve the problems which stand in the way of achieving a clean and safe environment for the people. However, the signal being sent by EPA contradicts this mandate. AEEP deplores the continued weakening of EPA's extramural research program which has been reduced from 199 million in FY 81 to 189 mil in FY 82, and is now proposed to be cut to just 133 million in FY 83. Unfortunately, this comes at a time of great need for a sound scientific base for federal and state regulations. For example, the California State Senate last year pleaded with the House Appropriations Sub-committee on HUD-Independent Agencies to release impounded R&D funds because they feared an irreversible setback in the quest for a better scientific base in support of regulations protecting human health. Then, too, the National Academy of Engineering Roundtable concluded recently that EPA should continue to be responsible for educational (including training of graduate students) and R&D segments of the Clean Water Program. Leading consulting engineers have publicly expressed their concern over the lack of a scientific base with which to advise their industrial and municipal clients on how to comply with environmental regulations. Within EPA, Deputy Administrator Hernandez has just asked that the scientific data base supporting the regulatory effort be reviewed by the EPA Science Advisory Board. How will the widely acknowledged gaps in the scientific base be filled if R&D funding is insufficient? What is the rationale for replacing "science," which had sometimes been flawed by less than complete research, with virtually "no science?"

A severe blow is being dealt to water quality research. It is our understanding that the 50 percent reduction in funding (13.3 mil, down from 26.5 million) includes elimination of all extramural research in such areas as the ecological effects of effluent discharges and the development of site specific water quality criteria for toxic pollutants. With regard to toxic pollutants, research on biological monitoring, standardization of toxicity tests,

validation of predictive strategies, and establishment of safe concentrations are all needed for development of a sound policy which is neither overprotective nor underprotective of aquatic life. There is clearly an urgent need for scientific data to support EPA-developed water quality criteria, state water quality standards and the regulatory effort in general. The in-house FY 83 budget (since the present budget proposal does not allow for any extramural research) for research on these issues is only 0.9 million. The Great Lakes Research Program is also being eliminated just when signs of progress in pollution control begin to emerge. To cite one example, university research supported by EPA led to a phosphorus control strategy which gave spectacular improvement to the shoreline at Harbor Beach, Michigan, and this strategy is now ready to be investigated and used elsewhere.

In order to provide the nation with a substantial base of fundamental research knowledge, Congress mandated that 15 percent of R&D funds be designated for this effort. EPA responded by establishing the Exploratory Research Program. Unfortunately, the best the Exploratory Research Program ever managed to get was 11 percent of the R&D budget. With the large R&D cuts proposed for FY 83, the most optimistic budget for this program is just 12.4 million. The University Grants Program component has been reduced from 26 million in FY 81 to 16 million in FY 82 and is now projected to be just 9 million in FY 83. This is a cumulative reduction of 75 percent and places it in a phase out mode according to some EPA program managers.

Also in jeopardy in FY 84 are the eight newly established, Exploratory Research Centers of Excellence located at universities. While these are to be funded in FY 83 (4 million), they remain vulnerable if the Office of Exploratory Research continues to suffer severe budget cuts. An important scientific resource, which can support EPA's mission, will be lost if this trend continues.

Drinking water research is being reduced from 21 million in FY 82 to 15 million in FY 83. Yet, at the same time, the GAO reports that 13,600 community water systems cannot meet any federal water quality standards unless these facilities are improved. It is especially discouraging that little of the extramural drinking water research in FY 82 was done by universities and much less is likely in FY 83. Yet, university research has been shown to be important. For example, leading university researchers were able to help establish scientific data on inadvertent production of trihalomethanes (a group of suspected cancer causing chemicals) in water treatment and methods of control, and this contributed to EPA's regulatory effort.

Despite recession and inflation, the public assigns a high priority to environmental protection. This is evidenced by the editorials and feature articles appearing in national magazines and leading newspapers. The need for improved scientific knowledge and for training of environmental engineers will continue regardless of the avowed shift of regulatory responsibility back to the states. The information is essential regardless of the regulatory agency.

University graduate programs in environmental engineering have much to offer in assuring progress in environmental protection. There are currently 1500 students being trained in water and wastewater engineering and another 1000 in air pollution control and environmental sciences. However, further reductions in R&D, especially in wastewater treatment technology and water quality effects, will erode administrative support for such graduate programs at many universities, dull student interest in environmental engineering and science careers, and threaten to re-direct the research interests of highly competent faculty away fom environmental protection. A valuable national resource for scientific discovery and development of future leaders will be lost.

Environmental Science and Technology, a leading technical journal, reported that the proposed EPA R&D cuts will mean 1500 fewer senior researchers and 4000-5000 fewer of their associates would be working on EPA projects. Further, even if the decision is made in 1984 to rebuild the R&D program, it would be 1990 before a flow of research results equivalent to the present could be reestablished.

Protection of the environment is a national responsibility. We must maintain a viable, high quality base of external research and training as well as exploratory, long-term research even though the results may not be directly related to an immediate regulatory effort. In fact, it is likely that regulatory decisions reached on the basis of short-term research, which ignore examining all implications, could waste capital investments for pollution control equipment. For example, fine particles emitted into the atmosphere are not removed by in-place, electrostatic precipitators, yet these devices were required of industry before the recent results of exploratory research showed that fine particles are a health hazard. Now, new investments will be required to remove these particles.

Admittedly, EPA's dual role of regulation and research in support of regulation is a difficult combination to carry out. The R&D budget cuts might not be so critical if other agencies were available to pick up the slack. Unfortunately, this is not the case. The Office of Water Research and Technology (OWRT) in the Department of Interior has been eliminated and the National Science Foundation's (NSF's) budget has not increased enough to accommodate the additional requests for support. For example, NSF expects the combined effects of OWRT's elimination and EPA's budget cuts to place an additional demand of 9 million (over the 6.5 million currently budgeted) on their Water Resources and Environmental Engineering Program.

Cost-effective, reasonable, and technically sound solutions to very complex problems created by the wastes of our advanced technological age can be found only if there is a sense of continuity in the R&D policy and extramural support in EPA. It is short sighted not to capitalize upon the breadth of capabilities, extent of physical facilities, and diversity of talent existing outside the EPA. Just as important, it is short sighted not to provide a better balance between long-term research and specific and directed researchds. Further, AEEP be-

lieves the drastic reductions in EPA's spending for FY 83 to be disproportionately larger than that demanded of other segments of government in the effort to reduce the national deficit. Given the assumption that budget cuts are inevitable, the concerns expressed by AEEP can at least be lessened by

- providing a better balance between internal and external R&D
- continuing fundamental, exploratory research.

Thank you.

Francis A. DiGiano, Ph.D.
President, AEEP

An abridged version of this testimony appeared as a guest editorial article in the August issue of Environmental Science and Technology.

AEEP/NSF CONFERENCE:

Fundamental Research Needs for Water And Wastewater Systems

December 1 & 2, 1982
Marriott Key Bridge Hotel
Arlington, Virginia

This conference is organized by AEEP and supported by the National Science Foundation in cooperation with the U.S. Environmental Protection Agency. The Co-chairmen are Fran DiGiano and Nick Clesceri. An organizing committee met in June and nearly all speakers have since been confirmed. From universities, the speakers thus far confirmed are Drs. Walter J. Weber, Jr., Perry L. McCarty, Donald O'Connor, Vernon L. Snoeyink, Joseph A. Fitzpatrick, Vincent P. Olivieri, C.P. Lesley Grady, Jr., Gerald Orlob, George Pindie and James J. Morgan. A brochure will be sent in September giving further details on registration. There will also be a limited number of travel grant awards made available with NSF funds.

AEEP ANNOUNCEMENTS

Enrollment Survey Committee

The Enrollment Survey Committee is preparing for the 1982 data collection activities. Aarne Vesilind, the former chairman of the committee, compiled and submitted to the Membership the 1981 Survey of Environmental Sciences and Engineering Graduate Student Enrollment. At the completion of that study, Aarne's files with data and contacts from all previous surveys were transferred to the committee's new Chairman, Jeff Peirce.

The committee currently is developing a revised questionnaire on enrollments which reflects suggestions and comments made by the AEEP membership. This questionnaire will be mailed in the early fall, and all AEEP members are encouraged to assist with the data collection process at their respective institutions. The committee relies on your help in developing a timely report.

J. Peirce, Chairman
Committee on Enrollment Survey

Faculty Achievement Award

Ben Dysart, past AEEP president, recently received the McQueen Quattlebaum Faculty Achievement Award from Clemson University. In addition to receiving a medal and stipend, Dysart will have the title of McQueen Quattlebaum Professor of Engineering during the next academic year.

AEEP Register of Graduate Programs

AEEP plans to publish a new register by June, 1984. We would like to use a word processor to ease the revision process. If any program would like to volunteer its word processing service (with some form of remuneration for secretarial time), please contact:

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AEEP Members Selected to WPCF Board

The nominating committee of the Water Pollution Control Federation has selected two AEEP members to its slate of officers scheduled for election by the Board of Control. Frederick G. Pohland, Professor of Civil Engineering at the Georgia Institute of Technology, was nominated to the position of Director-at-Large. Earnest F. Gloyna, Dean of the College of Engineering of the University of Texas at Austin, has been slated as the next President-Elect.

AEEP Luncheon

A general AEEP membership meeting is scheduled for 12 noon to 1:30 p.m. on Monday, October 4, 1982, during the WPCF conference in St. Louis. Both the Nalco and Engineering Science awards will be presented. The luncheon meeting will be held in the Benton Room of the Radison St. Louis Hotel. Response forms will soon be sent to AEEP members. Others wishing to attend the luncheon should contact:

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