NOAA Buffeted by Budget Storms

The Administration's budget proposals lack a clear rationale but would cut deeply into basic research programs

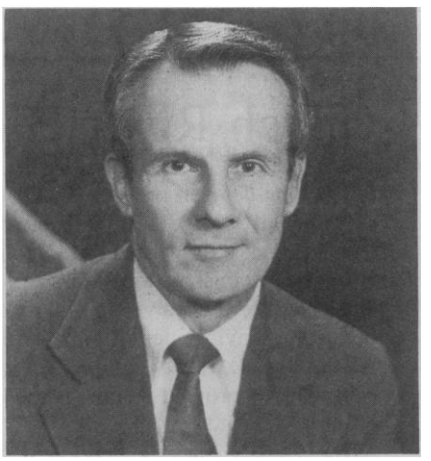
The top officials of the National Oceanic and Atmospheric Administration (NOAA) are planning to go on a three-day retreat this month to thrash out a long-term plan for the agency. The meeting is an attempt to provide some stability for NOAA at a time when it is being buffeted by budget cuts and many of its programs are facing an uncertain future.

A reappraisal of NOAA's goals is vitally needed, for the Reagan Administration has proposed deep cuts in many of its key programs, and there is concern that the knife has been applied with no clear plan in mind. Although Congress refused to go along with many of the proposed reductions last year, the Administration has renewed the attack on NOAA's fiscal year (FY) 1983 budget, and there is thus an air of considerable uncertainty in the agency.

If carried out, the budget cuts would slice into many of NOAA's basic research activities and eliminate entirely the Sea Grant Program. This would seem to run counter to the Administration's often professed intent to protect basic research while cutting back in applied research and development. Also scheduled for the knife are many activities designed to provide information on pollution of the oceans and the Great Lakes, which are generally regarded as important to provide a baseline to assess the effects of such things as ocean dumping. And several international scientific programs would also be severely cut back.

Although it is difficult to obtain a clear picture of just what is being proposed for NOAA because its FY 1982 budget is still somewhat uncertain (it may be funded for the entire year under a continuing resolution) and changes have been proposed in the way some activities are budgeted, a congressional staff analysis indicates that the entire agency would suffer a 20 percent cut if the FY 1983 proposals are carried out. NOAA's research activities would be cut even more deeply, by at least 30 percent, according to these figures.

NOAA Administrator John V. Byrne, while publicly supporting the Administration's budget proposals, has nevertheless expressed concern about the potential impact on research and development. "With the limited resources available to address ocean and atmosphere problems, I am particularly concerned about the vulnerability of 'new programs'—and I believe many science and technology activities fall in this category," he told a congressional subcommittee on 3 March.



John V. Byrne

The most prominent reduction in research support is a proposal to eliminate entirely NOAA's Sea Grant Program. Established in 1966 by Congress, the program provides funds for university-based research in marine sciences and coastal resources. Some matching funds for the research programs are provided by state governments.

In FY 1981, NOAA provided $41.8 million through the Sea Grant Program; next year, it plans to spend only $1.7 million to wind the program up. The reason, according to budget documents submitted to Congress, is that the program has been so successful in attracting matching funds that the federal share should be phased out. There is, however, no real indication that state governments, which will soon be saddled with a variety of programs consigned to them from the federal government, will be willing or able to increase their funding of sea grant activities. Consequently, Congress, which has long been a keen supporter of the sea grant program, is expected to keep the program alive, though probably at a reduced level.

One area in which particularly deep cuts have been proposed is research on ocean pollution. NOAA's budget request would reduce such activities by about 50 percent, and terminate entirely programs aimed at assessing the impact of ocean dumping. This cut, which comes at a time when the Environmental Protection Agency is considering relaxing its regulations on ocean dumping (*Science*, 5 March, p. 1217), has been bitterly attacked by environmental groups and by Representative James Scheuer (D–N.Y.) who heads the House science and technology subcommittee that has jurisdiction over NOAA. Other activities slated for extinction in this area are programs aimed at studying pollutants in Puget Sound, a waterway that is receiving greatly increased tanker traffic; a project looking at pollutants in the lower Hudson River and in parts of Newark, Raritan, and Jamaica bays; and a program of monitoring pollutants in marine mammals from South Carolina to Maine.

International opposition has been stirred by another proposed cut. NOAA's budget request contains no funds for the Great Lakes Environmental Research Laboratory in Ann Arbor, Michigan. The laboratory, which had a budget of $3.5 million last year, supports a variety of basic research programs on the Great Lakes and monitors levels of agricultural and industrial pollution in the waters. It also participates with Canadian organizations in research on the lakes, and helps provide technical monitoring for a 1978 transborder pollution treaty between the United States and Canada. The threatened closure of the laboratory thus has international implications, which are exacerbated by the fact that the Environmental Protection Agency is also planning to close its Great Lakes research facility next year. The impending demise of both laboratories has drawn a note of protest from the Canadian government.

Among other research programs that are threatened with elimination next year are the following:

- Research on weather modification. This has been targeted for a $6 million cut, which would result in the termination of the Stormfury hurricane modification program, the elimination of convective cloud seeding programs, and the termination of basic research aimed at understanding both purposeful and inadvertent weather modification.
- Upper atmosphere research. NOAA is planning to eliminate the basic research programs of the Space Environ-

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ment Services Center in Boulder, Colorado, which is aimed chiefly at understanding the impact of solar disturbances on the earth's upper atmosphere.

• The Global Atmospheric Research Program. NOAA is planning to reduce the level of U.S. participation in several major international climate research programs, for a savings of $2.2 million.

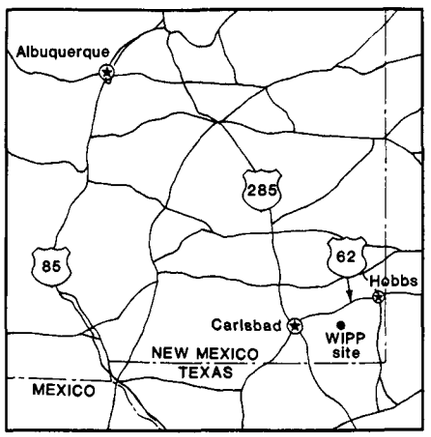
Although the cuts in NOAA's programs have received far less attention than those in many other agencies, they add up to a major shift in the agency's priorities, and they have caused considerable unease among NOAA's staff. According to one participant in the top-level staff meeting, adoption of a long-range plan for NOAA could be crucial in restoring morale by giving a sense at least of where the agency is headed over the next few years.—COLIN NORMAN

Radwaste Dump WIPPs Up a Controversy

A proposed pilot repository has sparked local opposition and there are doubts about the geological stability of the site

Tucked in the southeast corner of New Mexico is a desolate tract of land covered with sagebrush and shifting sand, a seemingly unlikely target of controversy. This 27 square miles of wasteland, however, is the heart of a battle over nuclear waste that has pitted New Mexico against the federal government. On this site next year, the Department of Energy (DOE) plans to begin contruction of a pilot facility for storing radioactive waste from defense programs. It will be the first of its kind in the nation and a model for future repositories.

But according to many environmentalists and state officials, the federal government has unfortunately fumbled its management of the $950-million project known as the Waste Isolation Pilot Plant or WIPP. "The Energy Department has badly mishandled the issue with the state," said Allan Kneese of Resources for the Future. In doing so the federal government has set a poor precedent for other radwaste sites to come.



Relations between New Mexico and DOE deteriorated to the point that the state last spring sued the department, charging that it had violated state's rights and failed to consult adequately with state officials. New Mexico State Attorney General Jeff Bingaman said, "We obviously had a serious breakdown of communication" before the lawsuit was filed. Other states "have an awful lot to learn" from New Mexico, he said.

Some believe that WIPP was misplaced from the start for geological reasons. Last fall, DOE discovered a pocket of brine below the repository. The concern is that the brine might compromise the safety of the repository, although the issue is not settled. Tests on the brine are to be completed this summer. But the impact of the discovery has heightened the political and scientific controversy that has beleaguered the project since it was authorized in 1976.

The irony is that DOE believed that the New Mexico site, although not perfect, was as close to an ideal location as it would find—for geologic and political reasons. Deep below the sandy terrain of the WIPP site are beds of salt that are considered the best immediate option in which to bury radwaste. Salt beds are stable, isolated from ground water, and plastic, enabling fractures to heal in repository walls. Although other states have salt beds, this one in New Mexico is in an area that is relatively free of drill holes. (The site originally selected for WIPP, in Lyons, Kansas, was abandoned in 1972 after scientists decided that it contained too many mining boreholes that might jeopardize the safety of the repository.) DOE selected a site 25 miles east of Carlsbad to store two types of defense radwaste generated from nuclear weapons production. The site would permanently store mainly transuranic waste, which emits relatively low levels of radiation, and temporarily warehouse small amounts of high-level waste for research and development purposes.

But 4 days before Thanksgiving last year, a drilling rig boring a test hole struck what geologists had hoped would not be there, namely, the brine pocket. Others had been discovered before, but none as close as this one, which may be as near as 600 feet to the proposed repository. If the brine is connected with other reservoirs, DOE might have to disqualify the site and move the repository to yet another spot on the tract. The site has already been relocated twice because of geologic aberrations found in the area.

Attorney General Bingaman

One geologist who has studied the southeast portion of New Mexico believes that the federal government never should have placed WIPP where it is. Roger Anderson, a University of New Mexico professor of geology, contends that the proposed dump is located where salt beds are still actively dissolving in subterranean areas that are difficult to predict. His theory is not widely accepted by other geologists. But if the recently discovered brine pocket proves to be joined with others, "that will lend cre-

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