

that a jump in high energy funding to \$440 million, even if forthcoming, was unlikely to occur in just 1 year. It therefore asked for a substantial increase in fiscal 1983 and a Reagan Administration commitment to the full figure in 1984 and beyond. HEPAP estimated that the level

of spending needed to finance the subpanel's core program would still come to \$395 million, but noted that the loss of ISABELLE would be a severe blow.

All in all, the most positive face to put on the subpanel report is that now the ball is in the Reagan Administration's

court. (The core program by itself is "insufficient to maintain the preeminence of the U.S. high energy physics program through the end of this decade.") But is anyone in the Administration playing this game?

—ARTHUR L. ROBINSON

Acid Rain Bills Reflect Regional Dispute

Congressmen from Northeast want midwestern states to reduce sulfur dioxide emissions

"I don't think my neighbor should be permitted to throw garbage on my lawn, and say it's too expensive for him to hire a garbage man, and that it's cheaper for him simply to continue throwing it on my lawn," says Senator Robert Stafford (R-Vt.). The neighbors he has in mind are the citizens of the Midwest, and the



Senator George Mitchell

Concerned with fish and forests

garbage is windborne sulfur dioxide and nitrogen oxides, the precursors of acid rain. Stafford is one of a growing number in the Northeast to become militant about the pollutants. As chairman of the Senate Environment Committee, he recently co-sponsored legislation that would force midwestern states to spend billions of dollars to control acid rain.

The legislation, which was also introduced in the House, has considerably quickened the pace of debate about the adverse effects of acid rain. Supporters feel that it may be more important than any other single aspect of the ongoing rewrite of the National Clean Air Act. It may also be the most divisive. The pri-

mary cause of the debate is geographical inequity. Pollution that causes acid rain is largely produced by utilities in Ohio, Indiana, Missouri, Pennsylvania, and Illinois among other states. Yet the bulk of the adverse environmental effects are felt hundreds of miles away, in Stafford's state of Vermont and others nearby, as well as in Canada.

The preeminent questions in the dispute are whether enough is known about acid rain to apportion blame, and if so, how much. Senator George Mitchell (D-Maine) believes that midwestern states are guilty, and that "a reasonable and effective solution to the acid rain problem" can be purchased by taxpayers in those states for \$2 billion to \$4 billion annually. Mitchell is the principal author of the Senate bill that has been introduced in the House by Representatives Toby Moffett (D-Conn.) and Judd Gregg (R-N.H.). "I have no desire to point a finger at any state," Mitchell says. "I am simply looking at the facts. Some states contribute more sulfur to the region than others. That is the amount to which they must clean up."

Mitchell is concerned about acid rain because of its immediate impact on fishing, as well as its potential future impact on the forest industry, which accounts for 30 percent of all manufacturing jobs in Maine. His bill, which was drafted with help from several environmental groups, requires a 40 percent reduction in the sulfur dioxide being emitted in a 26-state region east of the Mississippi. The choice of 40 percent is of necessity somewhat arbitrary. Acid rain models are not yet sensitive enough to demonstrate the economic benefits of a specific percentage reduction in pollution, a significant drawback that will make it hard for proponents to gather much support.

A similar, but less stringent, bill has been proposed by Senator Daniel Moyni-

han (D-N.Y.). His proposal calls for a 35 percent reduction in sulfur dioxide emissions by 1991 from 16 states east of the Mississippi. The reduction is to be accomplished first by forcing each state to meet existing requirements to limit emissions; many are not now in compliance and otherwise would not be for years.



Senator Daniel Moynihan

Proposes a 35 percent total SO₂ reduction

Then the states must reduce emissions further by requiring pollution scrubbers at old utility plants, by coal washing, by switching to alternative fuels, or by energy conservation. "While we do not know all there is to know about the acid rain phenomenon, I feel the available evidence is clear that if we do not begin to act now we run the risk of causing irreversible damage," Moynihan says.

Another bill has been proposed by Senator David Durenberger (R-Minn.) in an effort to strengthen the ability of a state to stop pollution generated outside its borders. His bill would make it easier for a state receiving acid rain to affix legal liability on a state where sulfur

emissions occur. Durenberger is concerned because research has shown that 35 percent of the lakes in northeastern Minnesota are nearing critical acidity.

The utilities have responded by arguing that action on all these bills would best be put off until more of the facts about acid rain are known. William Gerstner, executive vice president of the Illinois Power Company, notes, for example, that "at the present time, we have no firm evidence that emission reductions will make rainfall less acidic. . . . We believe these requirements are premature, irrational and punitive."

A similar view has been adopted by the Reagan Administration. Kathleen Bennett, an associate administrator for air pollution of the Environmental Protection Agency (EPA) recently told the Senate Committee on the Environment and Public Works that uncertainties about the formation of acid rain and the feasibility of potential controls must be resolved before regulatory action is taken. "The American people have the right to expect that their government will not impose additional multibillion dollar programs without first determining with some assurance that the intended environmental benefit will be achieved," she says. Bennett formerly worked in legislative and public affairs for consulting firms and the paper industry. Previously, she acknowledged that "if you make the assumption that emissions of sulfur dioxide are causing the acid rain problem, yes, you are probably talking about a retrofit approach," in which utilities that do not now have pollution control devices would be required to install them. "This is precisely the area we think requires a great deal of study because, of course, the costs would be—could potentially be—tremendous." She says it will be 3 to 5 years before the data necessary for regulation are available.

Senator Mitchell is critical of the EPA approach. "Those of us who are deeply concerned about this problem question the good faith of this Administration," he said at the 29 October hearing. He noted that the Office of Management and Budget had recently tried to eliminate funds for acid rain monitoring and modeling by the National Oceanic and Atmospheric Administration. The funds were replaced by congressional order. In addition, EPA is seriously considering petitions from 20 midwestern utilities for increased sulfur dioxide emission allowances, a proposal that a subcommittee of the Canadian parliament recently called appalling. Mitchell also cited a recent report of the National Research Council, which endorsed the idea that midwest-

ern utilities must be at fault for acid rain (*Science*, 2 October, p. 38).

Congressional sources say that despite such support from the scientific community, action on the acid rain legislation is unlikely this year. Congress is notoriously slow to settle fractious regional disputes, particularly those with such high

economic stakes. Ninety representatives agreed last year that "We believe we must take every reasonable step to control acid rain before all the evidence is in." An equally large group, with utilities in or near their districts, can be counted on to support the opposite view.—R. JEFFREY SMITH

IOM Counsels Secret Service

Three weeks before the presidential assassination attempt last March, the the Institute of Medicine (IOM) convened a study group to advise the secret service on how better to identify dangerous individuals. The report of that meeting, held at the request of the Secret Service, was released a few weeks ago.

The IOM panel, headed by W. Walter Menninger of the Menninger Foundation in St. Louis, confirmed what the Secret Service knows, that efforts at predicting violent behavior are generally unsuccessful. However, it concluded that the Service should develop more behavioral expertise and closer ties with mental health professionals.

The Secret Service has the names of about 26,000 persons in its files; 300 are considered dangerous, and 90 percent of these have histories of mental illness. The Service receives reports on at least 20 new cases daily from its offices around the country. A special agent interviews each person and a "dangerousness" determination is made.

Members of the IOM panel of psychiatrists and criminal experts predict that this case load would be going up, both because of the rise of single-issue and fringe political groups and because of the nation's growing population of deinstitutionalized mental patients. Most of the latter have neither treatment nor social supports and are thus more likely to engage in the kind of behavior—such as making threats—that will bring them to the attention of the Secret Service. The report says the Service should not put too much faith in institutionalization of cases that come to its attention since people are usually out again in a matter of weeks. Thus it may be more appropriate to try to arrange for continuous outpatient monitoring.

Although most of America's assassins have been marginally associated with some political fringe group, the IOM panel suggests that the Secret Service should be alert for violence from new sources, such as women and minorities, terrorists, political extremists, and individuals who may be aggrieved by cutbacks in government services. The number of women making threats is apparently on the rise, says the report.

The panel proposes that the Secret Service eventually develop a behavioral research capacity. Since the number of assassinations is too small to provide predictive data, the panelists suggest that "proxy" behaviors be analyzed for their predictive potential. That is, among individuals now classified as dangerous, the Service could look at behaviors that might be related to a penchant for assassination—such as interpersonal violence, aggressive driving offenses, violent sports, and suicide, especially suicide attempts conducted in an attention-getting fashion. The panel also suggests that some Secret Service agents receive special training that includes supervised interviews with mentally ill people.

Panel member David Hamburg, director of the Division of Health Policy Research and Education at Harvard University, told *Science* that everyone agreed the best way to reduce the risk of assassination is for presidents to be prudent about their public appearances. "The kind of public interaction which is dangerous is mostly pretty meaningless interaction," he observes. There has been a tendency for people to regard a president as cowardly or aloof if he avoids exposure to the masses. Actually, he says, it is only sensible for a president to shun unnecessary risks, as President Reagan did when he stayed home from the funeral of Egyptian President Anwar Sadat.

—CONSTANCE HOLDEN