because it was "a loyalty oath—who would dare refuse?"

Although most petitions from nuclear-oriented groups seem to favor nuclear energy, a dramatic exception is a statement drafted with the participation of some nuclear specialists at Los Alamos Scientific Laboratory, the famed nuclear weapons laboratory. The statement was issued in March 1975 by the board of directors of New Mexico Citizens for Clean Air and Water, an environmental group of some 2000 members, a few hundred of whom work at Los Alamos. The group said it was neither for nor against nuclear power. But it cited "potentially serious problems," including radioactive waste disposal, lack of a coherent national nuclear policy, and hazards associated with plutonium, ranging from toxicity to possible theft to possible diversion of plutonium to make weapons. Unless all the problems are solved or clearly on their way toward solution by March 1977, the group said, it will oppose further construction of nuclear power facilities (except for research purposes) "as an imminent hazard." According to John Bartlit, the group's chairman, a chemical engineer at Los Alamos who works in cryogenics, not nuclear research, about half of the 18 individuals most active in drafting the statement had degrees in nuclear engineering or related fields.

At least two polls of technical sentiment were conducted last year—with differing results for engineers and scientists. The Opinion Research Corporation, of Princeton, N.J., polled some 3200 engineers, mostly active and former members of the National Society of Professional Engineers. When asked which two or three energy sources should receive "immediate priority" in research and development and capital expenditures, 58 percent picked solar and 56 percent nuclear, with all other sources far behind. In contrast, when the Federation of American Scientists asked its members to choose among four different positions on nuclear power, 62 percent of the respondents favored either a moratorium on construction of new plants or a phaseout of existing reactors (*Science*, 16 January).

Both sides in the nuclear debate are claiming support from technical "experts" in an effort to influence the uncommitted public. There is some ground for believing that the public does in fact place great stock in what scientists say. A poll conducted by Louis Harris Associates last year concluded that "for the final word on nuclear energy the public looks not to environmentalists, not to government leaders, and not to the media," but rather to "scientists—in fact, scientists inspired confidence in people on both sides of the fence." However, the poll did not indicate how an individual would react if confronted with conflicting statements by scientists. Nor was it designed to probe the deeper question of whether all those scientists and engineers who are sounding off on nuclear power are really well informed or whether they are simply acting from the same emotions and impulses as the rest of the citizenry.

—PHILIP M. BOFFEY

Science Information: SIPI Expands, Puts New Emphasis on the Economy

The science information movement dates from the late 1950's, when scientists concerned about the threat of nuclear weapons began organizing to provide independent, expert information, particularly on the hazards of radioactive fallout. The pattern of organization was decentralized, with pioneering groups in St. Louis and New York providing models for groups in other places.

By 1963 the leaders of the movement felt that it needed a mechanism for national coordination to deal with what were recognized as national problems and established the Scientists' Institute for Public Information (SIPI) in New York. For the next decade, although SIPI did form task forces from time to time to deal with particular issues, it functioned primarily as a clearinghouse for information and a fund-raising arm for the local groups. In the past 2 or 3 years, however, SIPI has undergone a tranformation which amounts to a new start.

The change can be dated from 1973, when SIPI formally took over the ownership of *Environment* magazine (*Science*, 9 March 1973), which had been published by the St. Louis group. More significant, SIPI got its first full-time president, Alan McGowan. An engineer by training, McGowan has given SIPI a new direction and momentum.

The most obvious change in SIPI is a bigger budget and bigger staff. As recently as a year ago SIPI operated with three people on its regular staff. Now there are 18. The budget in 1974 was $74,000. Last year it rose to about $300,000 and the organization is now spending at an annual rate of over $400,000.

In terms of issues, the most noticeable change is that SIPI has developed as a major concern dealing with the impact of energy problems on the economy. What has occurred appears to be a broadening of SIPI's focus rather than a shift away from traditional concerns. The organization continues to be interested in environmental issues generally and nuclear energy problems in particular. But an example of SIPI's new economy-oriented activity, in this case in the field of occupational health and safety, is the initiation of a news service for union publications, Job Health News Service.

If expansion has meant a change in character for the organization, it is that SIPI has become less the institutional extension of environmentalist Barry Commoner. There is universal agreement among those who have been involved in SIPI over the years that Commoner played a primary role in shaping SIPI and keeping it going. As one SIPI veteran put it, "Barry spoke for SIPI, and SIPI spoke for Barry." Others have influenced SIPI and helped to raise money for it over the years, notably Margaret Mead, who is past president of SIPI.* But there seems to be general agreement that Commoner's interests and dynamism have been dominant.

SIPI's new departures seem to imply no rebuff to Commoner. McGowan, in fact, came to the SIPI president's job from St. Louis, where he had worked closely with Commoner in the St. Louis group. And the organization's new initia-

*Other officers are Commoner, Chairman; Peter J. Caws, vice chairman; Donald Dahlsten, vice chairman; Allen C. Nadler, vice chairman; Glenn Paulson, secretary; and Martin Sonenberg, treasurer.

tives are said to have been undertaken with the support of Commoner. (Commoner was out of the country on an extended trip when this was written and was not available for comment.)

SIPI's new emphasis on the economic implications of environmental issues seems to have developed as a result of questions from legislators and industry asking whether increasing use of energy isn't needed to maintain high levels of employment.

Many of those involved in SIPI now see a backlash developing against "pure environmentalism." At a time of high unemployment, workers are particularly sensitive to environmental-protection actions which directly cost jobs. Commoner, among others, is credited with early recognition of this source of conflict and with seeking ways to come to terms with concern about unemployment.

While it is difficult to gauge the effectiveness of the science information movement, it does have a fairly impressive record of anticipating issues. There is little question that the movement helped to raise the public's consciousness about the dangers of fallout during the period of nuclear testing in the atmosphere by the Soviet Union and the United States and contributed significantly to debates such as that on civil defense policy during that era.

SIPI, however, was formed in 1963 after the Cuban missile crisis and about the time when the limited test ban treaty was concluded, so that the nuclear issue had lost some of its urgency. There was a question at that point of whether science information was not a single-issue movement that might wither away. The founders of SIPI argued that the responsibility of scientists to the public required that the movement should inform the public on a broader range of issues, including air and water pollution and the dangers of pesticide use. Their perspicacity was proved as the environmental movement gained momentum as the decade developed.

Generalizations about the science information movement are hazardous because local groups have had differing operating styles and principles. A basic tenet accepted by the founders of SIPI was that the organization should provide reliable scientific information but not attempt to influence decisions on particular public policy issues.

Local groups have not always followed that rule, in some cases campaigning openly on one side of an issue. Some leaders of SIPI, in fact, have also argued against the code of scientific neutrality, and the issue has been a source of chronic, apparently creative tension in the organization over the years.

A field test of the impartiality principle seems to be coming up again soon. Voters in the California primary in June will be deciding on the question of imposing fairly tight safety criteria on nuclear power plants, a question placed on the ballot by the initiative process (*Science*, 9 Jan.). SIPI opened a California office in December and will be active in the nuclear power debate. SIPI's annual national meeting is scheduled for 24 and 25 April in Berkeley, and it is organizing teach-ins on the nuclear power issue just preceding the meeting. McGowan says that the organization will not be taking a stand for or against nuclear power.

The nuclear issue has been a particularly important one to SIPI. Concern about the military and nonmilitary uses of nuclear energy have historically been

Briefing

NIH to Open Budget Sessions to Public

The National Institutes of Health (NIH), prodded by Congress, has agreed to open to the public previously closed portions of advisory committee meetings dealing with budget issues. Until now, most federal agencies have reluctantly complied with the letter of the Freedom of Information Act that was designed to expose the workings of government to the taxpayers. NIH has taken a step toward complying with the spirit of that law as well.

The Freedom of Information Act has been around since 1967, but it was not until 1972 that an executive order, and, subsequently, the Federal Advisory Committee Act, explicitly extended its provisions to federal advisory committees (*Science*, 4 August 1972). Then, a perceptible wave of panic swept through federal agencies as one bureaucrat after another predicted an end to the days when the government could get candid advice through its advisory systems. How on earth, they wondered, could public business be conducted in public? They concluded that it could not and hid behind an exemption that allowed them to close advisory meetings whenever money—and therefore substantive policy—was on the agenda. The explanation given for holding executive sessions under exemption 5 of the Freedom of Information Act was that the preparation of the President's budget is a privileged process and that any discussion of budgetary considerations, no matter how preliminary or general, could be construed as being part of that process.

Senator Lee Metcalf (D–Mont.), chairman of the Subcommittee on Reports, Accounting and Management has consistently taken issue with that narrow interpretation of the law. For the past few years, he and members of his subcommittee staff have quietly but persistently been pushing for reform and, with NIH for a start, it looks as though they finally may be gaining ground.

Following Senate hearings on advisory committees earlier this year, Metcalf wrote to NIH director Donald S. Fredrickson about closed meetings. He pointed out quite clearly that the particular exemption behind which agencies have been hiding refers to the confidentiality of "budget estimates and supporting materials submitted to" the Office of Management and Budget for preparation of the actual budget document the President submits to Congress each year. "It seems to me that these meetings should properly be opened to the public, if indeed they involve preliminary stages of budget development. . . ."

Within a week, Fredrickson replied that he agreed with the Senator. Fredrickson wrote that in the past the meetings had been closed because "we made a judgment that the rendering of advice on budgetary matters is an integral part of the decision-making process . . .," the "we" in this case not including Fredrickson who has been NIH director only since last July. (The fact that budget-making is integral to decision-making, of course, is precisely why it should not be conducted out of public earshot.) "Upon receipt of your letter," Fredrickson went on, "we have reviewed our decision. . . ."

Fredrickson personally favors greater openness and is, perhaps, the first high federal official to explicitly point out that the exemptions that have been used to justify closed meetings are discretionary, not mandatory. And so, as he wrote in his letter of 18 March, "from this time forward," most advisory meetings will be fully open when it comes to matters of the budget. Metcalf hopes to cite NIH's new posture as a precedent as he continues efforts to open up other federal agencies as well.—B.J.C.

the strongest recruiting factor for SIPI and most of those active in the organization continue to give the subject a high priority. SIPI has acquired a vague antinuclear power aura, perhaps because both Commoner and Mead have been critics of aspects of nuclear power development. McGowan, however, says that SIPI has people on its board who believe that nuclear power is "viable" and that the organization is not antinuclear.

SIPI has a task force on energy options which has had several irons in the fire. In January it attracted press notice with the comment that the nuclear industry was facing adverse economic trends and that coal-fired plants could be producing power less expensively than nuclear plants by 1985 if present trends continued.

On the other hand, the task force has issued a report titled "Synthetic fuels and cancer" which, at least by implication, provides arguments in favor of nuclear power. The report cites evidence that the coal gasification process and the production of synthetic oil from coal and of shale oil caused a significant rise in the incidence of cancer in workers engaged in the processes.

SIPI's main work continues to be done mainly through voluntary efforts by scientists across the country. The organization operates with a two-tier system of "fellows" and "members." Fellows are scientists who are expected to share in the technical work of the organization, to represent it at hearings and meetings, and, by tradition, to contribute honoraria they receive as SIPI speakers to the SIPI coffers. Members are supporters of SIPI who pay $25 a year, which entitles them to a subscription to *Environment* and a SIPI newsletter.

In addition to membership income SIPI depends on grants, contracts, and individual contributions to make up its operating budget. It does accept government funds for projects, and at present its major federal funding is an $88,000 grant from the National Science Foundation for a study of the social and environmental implications of the establishment of energy centers, concentrations of power production facilities, which are represented by utilities, as providing a more efficient and less environmentally threatening mode of power production.

A grant of $35,000 from the Department of Health, Education, and Welfare has provided initial funding for the Job Health News Service, a semiweekly publication containing material designed for dissemination through publications of union locals. Subscriptions for the service are nearing 400, about a third of the number necessary to make the project financially self-sustaining. Federal funds are expected to run out in June, but SIPI officials are hopeful that support can be found to continue the service.

Private foundation support has financed the activities of a task force on scientific aid to Indochina. A $50,000 grant from the Christopher Reynolds Foundation has underwritten the task force's efforts to extend scientific assistance to Vietnam (*Science*, 29 August 1975). The same group has been negotiating with the United Nations Environmental Program to carry out a study on environmental warfare. Another SIPI task force has been studying the use and abuse of technology in the criminal justice system.

SIPI has also initiated an intern program designed to bring college students in for 2 or 3 months' work, with about 75 percent of their time spent in research on projects and the rest in an educational program organized by SIPI. The program is still in the formative stage with a few interns working in the New York office, but McGowan says that tentative plans are for interns to work also with local science information groups, other organizations such as the National Resources Defense Council (NRDC), and perhaps corporations.

New Alliances

SIPI in recent years has been readier to work in alliance with other organizations and has also recruited more nonscientists to its leadership. It is cooperating now, for example, with the League of Women Voters and the YWCA.

In the early years of the science information movement there was something of a debate over how large a role nonscientists should play in the organization. The St. Louis group made much more use of laymen than did the New York group, which relied more exclusively on scientists and physicians. While Ph.D.'s and M.D.'s still dominate the leadership, the board of directors includes several nonscientists such as Peter S. Hunt, a congressional staff member, Dan W. Lufkin, chairman of a brokerage firm and former Environmental Protection Commissioner of Connecticut, and Anthony Mazzocchi, legislative director of the Oil, Chemical and Atomic Workers International Union. This trend toward heterogeneity is likely to continue as the expanding SIPI seeks leaders who can help with funding and provide access to the new "publics" which SIPI is addressing.

Currently, SIPI gets roughly a third of its operating funds from federal grants, perhaps a quarter from private foundations, and the rest from memberships and individual contributions.

SIPI in late years has had less luck in eliciting support from the big foundations than it had in its earlier years. In the 1960's, for example, the Sloan Foundation provided a series of grants for SIPI, prompted apparently by the foundation's willingness to encourage the involvement of scientists around the country in public policy issues. It may be that the big foundations are cooler to environmental issues these days, as some activists suggest, or simply that they share a reluctance to provide what appear to be sustaining funds to mature organizations. SIPI, however, does seem to be doing reasonably well in winning grants from smaller foundations for new projects. The organization has always lived dangerously financially and that tradition will apparently be continued.

Environment operates on an annual budget of about $300,000, which is separate from the SIPI budget. The magazine has had a stable staff and quite a loyal readership. It is close to the break-even point financially, and is probably in the black currently as a matter of fact, but it needs added funds for the special editorial projects its editors feel are important.

As everyone involved in the SIPI expansion seems to agree, it is too early to tell where the new push will take the organization. The science information movement has come a long way since local groups ran speakers' bureaus and mounted a number of ingenious strategies (like the St. Louis group's campaign to collect deciduous teeth of children to measure radioactivity in the region). The local groups have waxed and waned over the years according to the intensity of local issues and the energy of individual local leaders, and the initiative now seems to have shifted to the national organization.

SIPI is diversifying its style. For example, it has sponsored congressional briefings prepared by the energy task force and there are plans to open a Washington office. A few years ago SIPI joined NRDC in an action which ultimately compelled the Atomic Energy Commission to prepare an environmental impact statement on the breeder reactor, and SIPI officials do not rule out legal action on other issues in the future. But just as SIPI did not develop into a protest group in the style of the 1960's, it seems unlikely that it will now become a public interest litigator like NRDC or a lobbying organization, but will try to continue and to expand its own brand of activism.—JOHN WALSH