

state & society

No protection for outspoken scientists, says Nader

Scientists who want to speak or act on matters of conscience are in a basically defenseless position, according to Ralph Nader, speaking at the American Physical Society's April meeting in Washington. The professional societies should stand up for the rights of the scientist, but, because they are indentured to the industries they are associated with, they offer almost no protection. Nader remarked that a more apt title for his talk on the responsibility of scientists might be "The Determinants of Professional Slavery."

Up to now the legal system has offered very little protection to individuals who endanger their professional positions by speaking out against environmentally harmful practices of their employers. This condition exists because the legal definition of violence has been confined largely to traumatic physical violence. An understanding of the different styles of violence, including violence done on the environment, should be one of the first objectives of members of the legal, medical, scientific and engineering professions, according to Nader.

Nader pointed out that the blue-collar worker has far more rights in regard to management because of the protection offered by his union-management contract. Recognizing the unpopularity of the idea of unionization among scientists, he said that the professional societies must begin to stand up for the rights of their members to speak out, both on and off the job, when their conscience dictates such action. The American Association of University Professors has made some interesting case advances and articulated some specific principles concerning employees' rights, Nader pointed out, but at present the professional scientific and engineering societies have no structure designed to deal with this problem.

A first step in this direction is to develop the role of the public-interest scientist. Very few scientists have entered this area because of the lack of money in the field, but those who have made an impact all out of proportion to their number. As larger numbers go into this kind of work, their mere presence will provide a base from which a defense of the rights of other employed scientists can be launched.

Suggesting a parallel with what high-energy physicists managed to do with their powerful lobby in Washington, Nader said that a similar "articulate and advocasary presence" working on behalf of public-interest science could generate pressure on government to provide money to support organizations like the Center for Science and the Public Interest, which employs five full-time scientists on an annual budget of only about \$20 000. Limited as its resources are, this organization has demonstrated admirably the desperate need and beneficial impact of such activities, Nader said.

Other steps needed to develop the role of the public-interest scientist, Nader indicated, would include the establishment of a clearing-house for jobs in the field and some method for encouraging role-broadening, so that physicists will become involved with problems outside the pure discipline of physics. He also offered a strong criti-

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Call for a new energy R&D policy

A billion additional dollars should be added to the annual funding for energy R&D in the US, much of it going into basic research on energy, and a special federal agency should be set up to handle it, according to a report on energy research and development by the Task Force on Energy of the House Subcommittee on Science, Research, and Development. The Task Force, headed by Mike McCormack (D-Wash.) also suggested an ordering of priorities in energy research and development and cited the need for a "focal point for energy policy in the White House."

The report notes that although a very complete examination of the needs for energy research was completed in 1964 by the Independent Energy Study commissioned by President Kennedy, very little has been done to implement its recommendations. Total government and private funding for energy R&D has remained at a constant percentage of about 0.15% of the GNP since then. According to the Task Force report, this is inadequate for our future energy needs, and more money is needed now. McCormack said that while he was

"encouraged at the President's commitment of an additional 20% for this purpose in FY 1974, an additional billion dollars a year must be committed if the job is to be done."

The report also recommends organizational reforms in the executive branch in order to coordinate and direct the increased energy R&D program. Suggested is a policy group in the White House that would constantly review the energy situation, both in its long-range and short-range aspects, and make policy recommendations to the President. The report adds that the proposed group should be responsive to Congress as well as to the President if it is to be really effective. Also suggested is the creation of an agency responsible for managing government-supported energy R&D. This agency would pull together energy R&D work that is now being managed in various departments, commissions and independent agencies. The Task Force did not specify the way the agency should be created, that is whether it should be done by agglomeration of existing agencies, such as AEC, or by setting up a whole new body.

The Task Force suggested priorities among the various technological opportunities for investment in R&D in energy. Highest priority was given to basic research, which, the report states, is cheap compared to other aspects of research and development and which provides knowledge that "undergirds all advances in energy technology." The report suggests that "the progress of basic research should be limited by scientific and technical barriers rather than financial ones," and that "scientifically sound research in unconventional as well as conventional fields of energy R&D must be pursued at a vigorous pace." Other areas of research that were included among those of highest priority are materials research, solar energy, geothermal energy, nuclear breeders, coal and controlled fusion.

While describing the recommendations of the report, McCormack also noted that "although we must set our research and development efforts in many directions, priorities must be established, and conservation of our resources and protection of our natural environment must be primary among them."

Now that the work of the Task Force on Energy is ended, energy efforts within the House Science and Astronautics Committee will go forward under a newly created Energy Subcommittee chaired by Congressman McCormack.

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cism of the scientific pecking order, which sets up ideas of prestige employment that hinder the development of public-service scientific roles.

A self-funding mechanism of some kind will probably be necessary at first. Initially it could take the form of a charge levied on all members of a professional society. Here again it is up to these organizations to take the initiative. Individuals do not have the necessary resources.

Nader explained that a scientist working in this area can perform several important functions. He can get the right information to the public at the right time and in a form the media will feel compelled to report. He can also testify before courts, agencies, Congress and other bodies entrusted with administrative and judgmental powers. In regard to this function Nader brought up the difficulty of finding people who are qualified to be expert witnesses because most qualified individuals are economically dependent on employers with interests in the cases under investigation. Finally, the public-service scientist can provide

a display before the public of the fact that there is an untapped engineering and scientific capability to solve many widespread problems.

On this last point Nader spoke of the abuse of technology by corporate powers, who are motivated largely by profit motives. "This . . . lowering of the sites of technological and scientific feasibility," he said, "is the single greatest detractor to the mobilization of public support for the government and more competitive R&D to solve many of these technically sourced abuses and injustices." It took a long time to get the idea across to the public, Nader remarked, that it is not a law of nature that people must die in automobile crashes.

Solar energy and nuclear power provide two more examples of abuse of technological capability, according to Nader. The corporate powers that control fossil fuels either fought or neglected optional means of producing energy that could not also be controlled. Thus, there has been no large-scale development of solar energy. Likewise the production of nuclear

energy is in a less desirable state of development than it might otherwise be because the public was "lulled" into surrendering its critical scrutiny by assurances that all the technical problems would be solved. In the last few years a mere handful of scientists have been able to force the Atomic Energy Commission to admit to certain problems and risks in the present status of nuclear-energy production. Public scrutiny could have assured either that solutions to the problems be found sooner or that alternative sources of energy, solar power for example, be sought and developed at full pace. "The illumination of these kinds of technological and scientific options," Nader said, "has got to come from a free or liberated scientific and engineering profession."

"If there is one point to sum up in one sentence," Nader concluded, "it's that beneath all aspirations and all changes must be a commitment to solve the problem of deployment of scientific manpower into new careers that rest . . . on the conscience of the scientist and not the organizational dictates of the employer." —JG

Stever sees change in funding priorities

While the current Administration is showing its backing of physics and R&D in general through an increase in R&D expenditures, physics funding will continue to be limited by interest in social problems not directly related to physics, according to H. Guyford Stever, the new presidential science adviser and director of the National Science Foundation who spoke at the Washington meeting of the American Physical Society in late April.

Stever noted that there has been a change in the climate for science today and that science must now work with other factors in society and vie for funds in what has become a tight money situation. "Our science programs," Stever said, "are now operating in a climate of opinion that, while recognizing their importance, no longer exalts them hopefully as the sole means of achieving our goals. As a result of all this, the science community on the whole faces the challenge—and it is no less than that—of doing good science with less federal support in some areas than it has had in the past."

Some of the new areas that will be focused on are, according to Stever, environmental and resource problems, work on guiding the growth of population, land use, urbanization, transportation, production and, in general, improvement of the quality of life. While work in these areas will support science, Stever said, "we must recognize, however, that many elements of the problems we face today require re-

search in areas outside the physical sciences and physical technology. As a result, there has been, and will continue to be, a degree of reallocation of resources among the fields of science." Stever did note that energy is one area in which physics will continue to play an important role.

Harvey Brooks, Dean of Engineering and Applied Physics at Harvard and past chairman of the National Academy of Sciences Committee on Science and Public Policy, commented on the text of Stever's speech for *PHYSICS TODAY*. Brooks said that in his opinion, the two key phrases of the speech were "... the best talent and the ripest fields will receive the most support, and that certain programs will have to carry on with less support until overall conditions improve . . . or until they are able to gain new support by way of hard-won scientific accomplishment that receives public recognition," and "... very few of the presently salient 'problems of society' stand in any comparable state of maturity as regards the involvement of physical science" [italics Brooks's].

Brooks said that in his view, "this adds up to physics being the lowest priority of all the basic disciplines." He noted that "there may be considerable support for sciences derivative from physics, but declining relative support for what most physicists would regard as the 'intellectual core' or 'cutting edge' of the discipline of physics as such." Brooks also said that the phrase italicized above is the most ominous one