

Military research and development

About half of the annual budget for the Atomic Energy Commission is devoted to military expenditures. Research and development for nuclear weapons exceeds all AEC support for nonmilitary physical research.

It would seem more appropriate to charge expenditures for weapons to the Department of Defense budget. First of all, these are strictly military expenditures and thus belong in the DOD share of the national budget. Secondly, to continue to incorporate such military items in otherwise peaceful appropriations is a deceptive practice, which tends, among other things, to camouflage the proportion of military allocations of our nation. Thirdly, there are those of us working on peaceful applications of nuclear energy who feel uncomfortable about association with continued nuclear-weapons development within the same agency.

The AEC operating expense authorization for fiscal year 1970 is 2220 million dollars, a reduction of 350 million dollars from the previous year. It is commonly mentioned that this is a decrease of 13%; what is not usually brought out is that the military portion of the budget was diminished by only 1.3% while peaceful applications were reduced by 25%.

Perhaps it is time for the AEC to relinquish its role in research, development, production, maintenance and effects-testing of nuclear weapons. If divested of responsibility for weapons enhancement, the Commission laboratories could benefit the public better by independently evaluating the safety of nuclear weapons systems and the efficacy of peacetime compliance to nuclear test bans. For example, in the controversy regarding the safety of siting nuclear missiles near populated areas, it would have been of considerable value to the civilian sector of the population if the AEC could have provided an autonomous review of the technical issues.

In a similar vein, management of Plowshare by the AEC should be reconsidered. Although there have been a number of technical and political objections raised with regard to

peaceful uses of nuclear explosives, there are also unassessed possibilities for immense benefit to mankind. Perhaps foremost among the political objections is the complication of clandestine nuclear weapons testing. Thus continuation of Plowshare in its present form endangers both the Non-Proliferation Treaty and any agreements that may come from the Strategic Arms Limitation Talks. A solution to this dilemma could be in turning over operational management and allocated nuclear devices to an international agency, such as the IAEA, under a dual-control arrangement.

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If someone argues that a scientist should be condemned when he is doing war-related research, he condemns all science because there is no such thing as war-unrelated science ("Congress requires relevance for DOD research," February, page 63). Research on shoes or medical progress in the fight against influenza can definitely be war-related. But if someone cares to enumerate the disadvantages of a particular technology, he should be fair enough to also cite the positive effects.

All modern technologies have to be assessed carefully with respect to their conflict with the human and natural environment. And science is the only discipline that can lead to rational control of our environment and resources (see: A. M. Weinberg, "In Defense of Science," *Science*, 9 January, 1970).

The "Schwartz amendment" as newly broadened in its aim (February, page 13) is an attempt to draw the science community into the decision process. As long as the purpose is an advisory form of influence on public decision makers, this seems desirable, but when Schwartz wants to blame the scientists for the results of their research he puts himself in line with the uninformed irrational onlookers. Human knowledge of, and interest in, all natural phenomena is the root of all progress, but can also be made the

root of all destruction. There is no way to choose only "good" knowledge. All knowledge without discrimination is useful if rationally applied. If our political world is still so far back in the Stone Age that we may say that it would have been better not to have known the wheel, or gunpowder, or atomic power, or bacteriological studies, and so on, we had better start educating politicians. The physicist and, generally, the scientist is only a contributor to human knowledge and can-



not be considered a superpower within society. But, despite the present job crisis, it would be desirable to increase considerably the number of those knowledgeable in science. What humanity needs are not less, but more, people who are able to argue rationally and to understand better where technology will lead us when pursued without scientific and conscientious control.

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Public suspicion justified?

The May editorial smugly writes off public distrust of the nuclear-power experts as "simply one example of the more general suspicion of science and technology." However, an important part of this general suspicion stems from the past failures of such experts to recognize and control effectively the environmental impact of new tech-