Science in the News

The New Administration: It Faces a Number of Questions of Scientific Policy; No Easy Solutions in Sight

The new administration is committed to taking strong action immediately after inauguration to put through its program for expanded efforts in education, defense, agriculture, civil rights, and several other areas. But in the field of science policy the problems are less susceptible to legislative or administrative blitzkrieg.

Some indication of the direction of the new administration will be evident in the revised budget proposals it will submit soon after taking office. The requests for research funds should show an increase over the last Eisenhower proposals. But the deeper problems of developing policies and mechanisms for carrying out a coordinated national program of scientific research are expected to be developed gradually, partly through a process of trial and error, as the administration struggles to find its way.

There are several points at which the new administration may wish to change the direction of Eisenhower policies. Two of them, possible revisions of an Atomic Energy Commission report published last week, are discussed below. But there will be a great deal of continuity.

Science Advisory Committee

The President's Science Advisory Committee, the highest-level organization for dealing with questions of science policy, has a reputation for being singularly nonpartisan. It is almost universally regarded as an extremely valuable organization, and a group like Senator Jackson's National Policy Machinery Subcommittee, which will shortly begin issuing a series of reports highly critical of Eisenhower's methods of dealing with policy questions and the way he has used such bodies as the National Security Council, apparently has found little to criticize about the workings of the Science Advisory Committee.

Because it is widely regarded as having worked so well and having been free of partisanship, the Science Advisory Committee is singularly free of worries over problems of transition to the new administration that have troubled so many other government bodies. George Kistiakowsky, chairman of the committee, made it clear before the election that he would leave the government in January. But the new top Presidential science adviser is expected to be someone well known to the committee and its staff, indeed probably a member of the present committee.

A measure of the committee's nonpartisanship was suggested when a member was identified in the press as a top science adviser to Kennedy. In almost any other area of the government a man publicly associated with the anti-administration candidate would have been promptly asked for his resignation. In this case the man voluntarily offered his resignation, but it was promptly turned down by Eisenhower. Almost anywhere else but on the Science Advisory Committee it would be regarded as unthinkable for a man to be simultaneously on the staff of the President and on the staff of the opposition candidate.

Multidisciplinary Efforts

Some of the questions the Science Advisory Committee has been struggling with and will continue to struggle with in the months ahead are how to organize support for multidisciplinary efforts such as oceanography (*Science*, 27 May) for which responsibility is fragmented among a number of different agencies and which therefore have a tendency to get lost in the shuffle under current methods of budgeting and presentation of programs to Congress; how to assure an adequate level of support for expensive, high-priority programs while assuring adequate support for less glamorous but still very important fields (this problem comes up, for example, in working out programs to support the very expensive work in high-energy physics while still assuring adequate support for low-energy physics). Another side of this general problem is to assure a reasonable balance remains between support for physical and biomedical sciences and support for the social sciences and the humanities.

In another area, there is general agreement on the need for making the Federal Council on Science and Technology a more effective agency for gaining cooperation throughout the government on national science policy. The two, the President's Science Advisory Committee and the Federal Council, are parallel organizations, both part of the executive office and both headed by the science adviser to the President. Both are quite young. The organization of the council was announced at the AAAS annual meeting in December 1958, and it has been in operation only about a year. The President's committee, itself, has been a really important organization only since the increased concern with science was developed as an aftermath of sputnik.

Federal Council

The President's committee advises the President on policy; the Federal Council's major function is to enlist the support of the agencies of the government in carrying out the policies that are decided upon, a far more difficult task than is commonly realized, for government agencies have numerous ways of dragging their feet in carrying out presidential decisions.

Beyond the problems that lie specifically in the area of science, there is the feeling that a more efficient method of budgeting has to be evolved in order to improve the efficiency of the government in general. Budgeting consumes a major part of the time and energy of top officials. In areas like scientific research and foreign aid the present year-to-year budgeting procedures make it difficult to make the long-term commitments that nearly everyone feels should be made. In areas like oceanography, where programs are fragmented among many agencies, it is impossible to present a unified program to Congress, and the bits of the program must be considered by many different Congressional committees, few of which have the knowledge to understand the importance of the segment that comes

under their consideration as part of the over-all program. Reorganization of budget procedures has been talked about for years, without much progress being made. It will be a major accomplishment if the new administration can put it across in the course of the next 4 years.

AEC Report

Two questions of scientific policy the new administration will face were suggested by an Atomic Energy Commission report published last week sketching the expected role of the Commission's national laboratories over the next 10 years. The report was not intended to represent a firm commitment, which would be premature even without the extra uncertainty over what the new administration will do. But it represents a useful yardstick against which to gauge what is actually done in the years ahead.

AEC-sponsored research (not including weapons research) now runs to well over $600 million a year. Two-thirds of the money is spent in the AEC's 20 major national laboratories, which are run on a contract basis by an industrial company, a university, or a group of cooperating universities. The laboratories are owned and completely supported by the government. They represent an investment of over a billion dollars in equipment and buildings. Their staffs, though, are employees of the contract management rather than the government; this arrangement relieves the organizations of some of the restrictions, including salary limits, which would exist if the staffs were part of the civil service.

Volume of Research

The report suggests that the volume of AEC-sponsored research will grow with the growth of the national economy, but does not specifically suggest that the growth of research will be only proportionate to the over-all economic growth of the country. It can be assumed that investment in research both by the AEC and by other government agencies will grow considerably faster than the national economy; one of the tasks for the new administration will be to decide how much faster.

The Defense Department, for example, is spending only half as much money on basic research as its scientific advisory committees have been recommending. And when the Navy sponsored an attempt to calculate an optimum ratio of basic to applied research effort, its study committee decided that a ratio as high as 50/50 might be advisable. This would imply a basic research effort in the Defense Department about 10 times the current level. And the desirability of such an expanded effort in turn would imply the need for a strenuous program of federal assistance to higher education in order to develop the scientific manpower necessary to carry it out.

Federal Role

Aside from the problem of deciding on a proper level of investment in research, the new administration will be faced with deciding whether it will accept the present administration's view of the role of the government in promoting research, which has been to try to hold to a minimum the amount of work done in facilities owned by the government.

The AEC report on the future role of the national laboratories represents the view of the outgoing administration. It suggests that the government-owned laboratories are "mature" institutions not likely to grow very much, and that the bulk of the increased AEC-sponsored research in the years ahead will be done through contracts and grants to the universities and industry. The national laboratories would continue to carry a great deal of responsibility for basic research in fields such as high-energy physics, where enormous outlays are required for equipment, and for basic and applied research in high-priority areas where the group effort possible in the government-owned laboratories can produce results faster than the individual efforts of university scientists. Development projects, many of them involving improved types of reactors, would be handled in the national laboratories through the preliminary stages and then would be transferred to industry for advanced development as soon as it became economically and technically feasible to do so. But the relative importance of the government laboratories would decline as further investment in research was directed primarily toward industry and the universities.

This attitude may be revised by the new administration. There is general agreement on the wisdom of supporting basic research through the universities whenever possible, if only to strengthen the universities and their ability to turn out greater numbers of well trained new men. An especially fast growth is seen for AEC-sponsored research in the universities in the fields of basic physics and biomedicine. But there seems to be some difference of opinion over industry's future role.

Complaints are heard that the Eisenhower administration, always anxious to work through private industry rather than through government-owned facilities, has sometimes been premature in moving projects out of the national laboratories and into industry, although industry critics say that just the opposite is true.

There have been cases where projects have had to be taken back into the government laboratories for further development after it became clear that industry was not in a position to carry on the work.

One of the major national laboratories, for example, let a contract to an industrial firm to fabricate a new type of reactor fuel element. The assumption was that research and development problems had been solved to the point where the industrial company could deal with any further hitches. A year was wasted until the project was taken back into the national laboratory, where the facilities and personnel were on hand to solve the technical problems which had turned out to be more than the private company could deal with.

Pressure on Laboratories

Barring an increase in the size or number of the national laboratories, the number of new projects that can be undertaken will be limited by how quickly established projects can be moved to industry. This situation will put increased pressure on the laboratories to hand projects over to industry as quickly as possible. The present administration regards this pressure as desirable. But if the new administration should decide that this will lead to premature or inefficient transfers of responsibility, it may recommend an expansion of the government-owned laboratories beyond the modest expansion foreseen in the report. It may ask for greater expansion of the government-owned laboratories in any case if it becomes apparent that important projects are being shut out because the national laboratories, without expansion, cannot take them on and that industry, faced with the need for huge and hard-to-estimate investment in specialized facilities, cannot profitably handle them.—H.M.