In: BM Files Civil Defense

TO : T. H. Johnson, Director, Division of Research
Washington, D. C.

December 8, 1952

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FROM : David F. Shaw, Manager, Hanford Operations Office,
Richland, Washington

SUBJ : DRAFT STAFF PAPER ON "CONTRACT POLICY FOR OFF-SITE RESEARCH"

SYMBOL: OH:KLE/OC:DGS

Reference is made to your memorandum of September 5, 1952, transmitting the draft staff paper on contract policy for off-site research. We do not believe the proposed policy statement is sound, and would harm rather than help our position. Our opinions are elaborated in more detail below.

RESEARCH PHILOSOPHY

We believe that the staff paper, as presented, fails to reflect the historical background of the provisions in the Atomic Energy Act under which the Commission's research programs are being carried on. In the period immediately subsequent to World War II, during the discussions and public debate which led up to the passage of the Atomic Energy Act of 1946, great concern was expressed by many individuals, technical organizations and publications about the relative weakness of the United States in fundamental research, as compared with the quantity and quality of such work in other nations.

This comparison was drawn in many fields, atomic energy among them, and it was pointed out repeatedly that while the United States' achievements in the field of applied research had, in general, excelled those of the rest of the world, we had made only relatively small contributions, by comparison, in the fields of fundamental research. In the case of atomic energy in particular, it was pointed out that a large measure of our success must be attributed to the contributions made by the outstanding refugee scientists from other lands who were members of the Manhattan District team.

In addition to recognizing the importance of maximum scientific progress in fundamental research to the maintenance of our superiority in the field of atomic energy, the importance of a vigorous program of applied research to take full advantage of new principles and new information as it became available was fully recognized at the time the act was passed, as can be ascertained from the reports of the Congressional hearings.

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The Congress, in passing the Atomic Energy Act, as can be ascertained from the hearings, recognized the fundamental difference between basic research and applied research and the conditions under which each will result in the maximum accomplishment. The basic concepts of free motivation and freedom from the restrictions of rigid programming and time-tables of accomplishment, which are essential to a healthy and vigorous fundamental research program, were recognized at the time as well as the need for definite objectives relative to immediate needs and close coordination with actual manufacturing operations, which are requisites of successful applied research programs in any field.

We believe, therefore, that the recognition of two separate and distinct missions, insofar as research and development is concerned, is still a sound and valid basis on which to establish the Commission's research objectives.

CONTRACT POLICIES

While it is true that the same private or academic research institution may conduct both basic and applied research we feel that there are strong reasons for differentiating between the two in our contractual relationships. In the case of basic research, we believe that to the fullest possible extent free motivation on the part of institutions should be the keystone of our policy. Original thinking can rarely be generated by outside pressure.

It may well be that as time goes on the Commission will wish to divorce itself more and more from fundamental research and turn over the responsibility for fostering and encouraging this type of research to the National Science Foundation. In the meantime, however, the Commission is carrying out its mission in this field of activity through its so-called joint participation contracts with numerous academic institutions throughout the country. We believe that the continued success of this activity is dependent, to a large extent, upon the institutions themselves.

As stated in the draft staff paper, fundamental research is a basic counterpart of the universities or colleges teaching functions. The primary purpose of Commission support is to permit the research investigator to improve the quantity or quality, or both, of his work by providing him with funds which the university's resources could not make available. We have long been of the opinion that such Commission assistance should be limited, as a general rule, to research projects in which both the institution and the investigator have a deep and abiding interest and which would be carried on in a more frugal fashion if Commission assistance were not forthcoming.

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For this reason, we have never been able to see any justification for overhead allowances in connection with such contracts. The volume of such work is subject to complete control by the institutions and it is our opinion that, as in the case of any successful business organization, they should limit themselves to that volume of voluntary undertakings which their normal resources can support.

That a policy of no overhead payments is workable is evidenced by the fact that no overhead was ever paid on any joint participation research contracts administered by the Hanford Operations Office until the Commission itself established the principle of paying up to 8 percent overhead on such contracts. At the time of this change in Commission policy, interest of the Northwest colleges and universities in conducting fundamental research on a joint participation basis without payment of overhead was far from exhausted. In the final analysis, university proposed research in which outside financial assistance is solicited is several decades old and firm policies are in effect in most schools as to the type of research which may be undertaken and the division of time which is to be allotted between research and teaching. The schools themselves find no difficulty in controlling non-government sponsored research of this type and we see no reason why government sponsored research should pose any more of a problem.

We have a certain amount of work performed between northwest universities and colleges in connection with our local plant problems. This type of work seems to us is analagous to the vast majority of Commission originated research which has been assigned to colleges and universities throughout the country. This type of work is a burden over and above that which would normally be taken on by the institutions concerned. It is advantageous to have such work performed by the colleges and universities because of the availability there of individuals with unique skills necessary for successful conduct of the work and because, in general, colleges and universities with graduate research assistants available can usually perform the work at a lower cost than would be possible in the national laboratories or plant assistance laboratories at our various production sites. On such contracts we think it is proper that the government should pay full cost, including overhead, for such work. We do not see how such a policy would in any way compromise a policy of no overhead on institution originated work.

Most of the northwest colleges and universities would disagree with your proposed policy with respect to academic and summer salaries for principal investigators. We concur with them that it is entirely appropriate to pay two months summer salary to principal investigators.

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Likewise, it is highly inadvisable to pay any part of academic salaries. Payment of part of the regular academic salary can all too frequently cause hardship and embarrassment at the time of contract termination by forcing the university into an unplanned financial burden which results from restoring faculty personnel to full academic salary. On the other hand, the inability to furnish adequate salaries in many colleges and universities causes scientific personnel to seek summer employment outside the university. The payment of summer salaries to these individuals often makes possible the retention of valuable scientific personnel who otherwise would be forced to seek employment elsewhere during the summer months.

SELECTION OF RESEARCH CONTRACTORS

We note with some concern your conclusion that a university that already carries on research at a high level will naturally be continued to be favored by the Commission on the basis of its greater capabilities. The staff paper also makes a point of the need for training scientific manpower and expanding interest in the fields of science, of interest to the Commission. We believe that the conclusion and statement are in conflict. It is hard to conceive of any long term broadening of interest in any field of science if assistance is limited to a relatively few schools. It seems to us that this policy, which several government agencies appear to have adopted, may well be one of the underlying reasons for the increasing pressure for increased level of government support of college and university research on the part of a limited number of schools.

Graduate training in the basic sciences, after all, can be accomplished in any university and in many colleges. We feel that the fostering and encouragement of better scientific training in the smaller institutions through improving the quality and quantity of the research that they are able to perform through the vehicle of joint participation contracts can pay valuable dividends. The case of Reed College in Portland, with a total enrollment of less than 600 students and a very limited source of outside funds, is a worthwhile object lesson. By contract assistance completely of a joint participation nature, some from the government, a substantial amount from private industry, this institution has earned an outstanding reputation for the quality of its undergraduate training in chemistry and physics. Its graduates applying for advanced education have had the highest scholarship and fellowship selection rates of any college or university in the nation for the last several years.

We do not feel, therefore, that the eagerness of the large, well-established research centers to extend their activities is sufficient reason, by itself, to warrant concentrating Commission research in

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such centers. The eagerness to extend research activities must be tempered with the ability to conduct such work within the framework of the established university program and budget. We believe that the argument presented in Paragraph 38 of the Staff paper, with respect to joint participation and its potential undesirable control on the university program, in actual reality is a matter of far less concern than the growing attitude of many of the large colleges and universities which has led, for all practical purposes, to their seeking larger and larger federal subsidies for their normal operations, which can lead ultimately only to government control of their educational programs.

RECOMMENDATIONS

It is our recommendation, in light of the foregoing discussion, therefore, that the following points be the basis for the Commission's policy, with respect to off-site research contracts:

1. The Commission has a definite directive under the provisions of the Atomic Energy Act to foster and encourage a program of fundamental research in the nuclear sciences to stimulate progress and strengthen the position of the United States in these fields.

2. The Commission also has a primary responsibility for developing and undertaking a vigorous program of applied research to insure adequate and prompt application of all new fundamental developments.

3. The Commission recognizes fundamental differences between basic research and applied research and the conditions under which each will result in maximum accomplishment.

4. With respect to basic research, the Commission should stimulate and encourage sound and imaginative fundamental research programs at as many academic and private research institutions as possible. Financial assistance from the Commission should be limited to an extent which will permit the research investigator to significantly improve the quantity or quality, or both, of his work. Such assistance should not extend to payment of administrative expenses which are normally the responsibility of the institution.

5. Academic and private research institutions should be reimbursed for all costs, including an appropriate apportionment of administrative overhead costs of the institution, for all Commission initiated research programs.

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6. The historical significance of the Commission's responsibility, with respect to the sponsorship of fundamental research, whether it is related to the immediate needs of the Commission or not, should be emphasized to the Appropriations Committees of the Congress when appropriation requests are presented. It would seem appropriate to enlist the aid of the Joint Committee on Atomic Energy in impressing this point upon both the Appropriations Committees and the houses of Congress at large.

7. It is also recommended that a change in the patent clause be made under joint-participation contracts. The use of the type "A" clause has been the subject of considerable objection and may actually have deterred full development of patentable ideas and applications for patents. We believe that the development of novel ideas are possible under joint-participation contracts and we would gain more from the use-rights possible under a type "C" clause than under the present restrictive clause which has netted this area nothing to date.

cc: Dr. J. C. Bugher, Division of Biology and Medicine
R. W. Cook, Director of Production

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