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DRAFT STAFF PAPER ON "CONTRACT POLICY FOR OFFSITE RESEARCH"

SYMBOL: ORR:DFC

The draft staff paper, dated September 5, 1952, "Contract Policy for Offsite Research", has been analyzed and reviewed at Oak Ridge with a great deal of interest.

The Commission's directive, under the Atomic Energy Act, to bring about the accomplishment of research so as to expand theoretical and practical knowledge in fields related to the uses of atomic energy brings important problems to field offices charged with making practical arrangements for offsite research which will yield effective results in an economic way.

It is because of this responsibility that we are fully cognizant of the advantages of developing and stating a reasoned policy to serve as a guide throughout the Commission in making such arrangements.

We are fully appreciative of the full and objective presentation in the draft staff paper of the offsite research problem, the background, objectives, and recommended policy. We are very glad to have this opportunity to contribute to the discussion.

With the objectives as presented, we, in general, agree. However, and solely in order to get the most research for the money available, we recommend that universities engaging in AEC research be encouraged and, at times, required to support the projects. In this and some collateral respects, we differ from the conclusions and recommended policy of the draft staff paper, for the reasons discussed below.

It is generally agreed among scientists that we are rapidly running out of basic information upon which to build our applied programs. It is also agreed that this type of research, in many cases, can be done most economically and with great productiveness at the universities. Certainly, the universities are, in many ways, better suited to do this work than are the laboratories. The environment of the university researcher, and the fact that his thinking and his associations are not as limited as the laboratory researcher, enables him to take a less restricted view of the basic research problems which should result in a greater productiveness of new ideas. Also, the universities are well suited for taking on small but important problems, while the laboratories can concern themselves with problems of more immediate importance and with the research problems of

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greater scope which they are uniquely qualified to handle. Hence, every effort should be made to increase the funds available for university-type research. Furthermore, it follows as a matter of course that one would seek to invest these funds in institutions having the facilities and competent investigators with which to produce the most reliable results. However, it also must be recognized that research, by its very nature, is speculative and that any sound scientific approach to the solution of problems by the research method must insure diversification of the work. In this particular case, this is interpreted to mean that, consistent with other limitations, the program should be diversified to include as many universities as possible. Another facet of this proposition is that research competence is not always immediately recognizable; the history of science is replete with examples where recognition of outstanding accomplishments was delayed for many years after the actual performance of the work. The merit of some of these accomplishments will fully justify a considerable monetary risk on the part of the Commission in the hopes and expectations of developing scientists who will make important contributions to the program. This proposition could be developed to great lengths but in essence it again points up the desirability of diversification of research programs so as to spread the opportunities. This diversification, in its turn, increases the capacity of the nation for the training and development of scientists because the smaller institutions can expand much more rapidly than can the larger ones which are approaching a leveling out period in their growth.

However, Conclusion (a), Paragraph 51, of the draft staff paper, concludes that the Commission should authorize contracts at a rate consistent with annual appropriations. Furthermore, Conclusions (b) and (c) suggest that university participation and interest should not be used as a basis for contracts, and that lump sum contracts which cover the actual costs of the work should be the general rule. It is presumed from this that the cost per contract to the Commission would increase; hence, unless appropriations should be increased proportionately, the number of university contracts and the number of participating universities would be decreased. For the reasons discussed above, this is thought to be an undesirable situation, and constitutes a logical argument for participating contracts in which the cost is shared, allowing the Commission funds to spread over a larger number of universities. If appropriations should be increased, it is believed that the same reasoning will indicate that greater benefits can be obtained by a broader distribution of the funds than by giving increased support to existing programs. Furthermore, the adoption of a program whereby the Commission pays full costs in each case, but is limited with respect to the number of participants, would result in each institution tailoring their program to the anticipated desires of the Commission. The net effect would be a very realistic influence on internal university policies by the Commission regardless of their intentions in the matter.

It is believed that the place for participating contracts (Type I, Paragraph 6 of the draft staff paper) is among institutions where research does not constitute a large portion of the university's activities and where the work can be undertaken without major increases in staff, overhead, or facilities. For the most part, the OROO contracts in the South have been invested in promising people located in small institutions where a little assistance goes a long way, but even the larger schools, as indicated below, have been beneficiaries of this program. Up to the present time, the southern universities (large or small) have not become overloaded with Government research contracts to the extent that the participating phase has become a burden. On the contrary, there is still manifest interest in this type of program. There are two schools, Vanderbilt University and the University of Alabama, which are interested in additional research but are unable to undertake expansion of permanent facilities at present. It is understood that Vanderbilt has requested assistance for a building, and that the University of Alabama has a building with space for some research work if arrangements could be made to provide additional staff and facilities. On the other hand, Emory University obtained \$9,000,000 to build up their medical research facilities. In general, the larger and better schools in the South have been able to obtain support for buildings and staff in sufficient amount to warrant support of the part of the research program of interest to the Commission. Duke University, Rice Institute, and the University of Texas provide excellent examples of this cooperative program in operation. Duke and Rice constructed buildings for a Van de Graaff machine while the Commission furnished the machine. Other equipment was purchased in part from AEC funds and in part from their operating funds. Texas, on the other hand, paid the major costs of the building alterations and the Van de Graaff machine while the Commission paid for the shielding and other equipment. It is questionable if any one of these three cases would have materialized under a plan which incorporates the conclusion of Paragraph 51 (b) of the draft staff paper.

Historically speaking, some of the greatest contributions to science have come about through selection of the problem and the digressions involved in its solution rather than in the solution itself. Participating contracts tend to invite and stimulate thinking about potential problems, and the Commission receives valuable contributions by the mere submission of these problems to it. Moreover, the submission of proposals by the many scientists throughout the country implies that in their judgment the participating program is a sound one. The soundness of the program is also attested to by the fact that universities, hard pressed as they are for funds, voluntarily submit projects for consideration. In general, it is believed that the results obtained from the participating contract program justify the present policy in force and that there should be no change in this respect until there is strong evidence that worthwhile research is not being supported.

There will, of course, always be research programs, such as the cyclotron programs and the like, which will be large enough to tax the facilities of the contracting university. These should be treated as special cases, like the Type II contracts mentioned in Paragraph 6 of the draft staff paper. In these instances, such factors as the competence of the investigator, size of the university, and the past record of the university, become of paramount importance. Such contracts might well be covered by Conclusion (b), Paragraph 51 of the draft staff paper, and it is here that one can take into account the inability of the school to absorb even a small part of the costs and in this way justify payment of full costs by the Commission. Generally speaking, the larger contracts have a greater number of variables involved and therefore more leeway should be provided in drawing up such a contract.

The criteria as to when a contract should be considered a "special case" involve such things as, a) is the contract big enough to have a decisive impact on other research programs of the university, and, b) is the university, by accepting the contract, incurring additional maintenance and upkeep costs such as occupation of a building that would not otherwise be occupied? These cases sometimes could be handled by modification of the definition of overhead but even then they would be considered as special cases. The experience of this office indicates that one might set a rather arbitrary upper limit of \$100,000 above which contracts are to be considered under the "special case" category. On the other hand, this dividing line for special consideration might be placed at some point between cost and lump sum contracts, as discussed in the draft staff paper.

With reference to the matter of overhead, this office, in accordance with directives from Washington, has adopted the figure of eight percent. Although it has been labeled "overhead" or, in a few cases, "secretarial assistance", it was felt that this fixed percentage of the Commission's contribution could be used in any manner desired by the university. It is our opinion that the figure merely reflects the cost, directly or indirectly, of spending the funds contributed by the Commission. In some cases the eight percent has been used for direct support of the research program while in others it has gone for administrative costs, building maintenance, etc. However, it is felt that this so-called overhead is not to be applied for general support of the university and that any consideration for increasing the overhead should be based on a demonstration that the existence of the contract actually increases the expense to the university by more than the eight percent allowed.

It is conceivable that the university lacks funds to maintain and operate its facilities and wishes to turn to the research business as a means of meeting its expenses. In such cases it seems only logical

that the university should be considered as being in the same category as any industrial contractor and thereby treated accordingly rather than as an operation within "ivy walls". By any other token, the Commission places itself in the role of supporting the university. By thus assuming the role of "financial angel" to the universities, the Commission may or may not be on firm ground; this involves entirely different considerations. However, at the best, it confuses the issues to permit this question to enter into contract considerations. It appears that the two problems should be studied as separate and distinct aims and should have no bearing on one another. In fact, to enter into a contract with a university on an actual cost basis in order that the university may have the money, which would normally be applied to the contract, for other purposes is a devious method of providing general support and, as such, is contrary to our general objectives of putting all items involved in the contracts on an honest basis that will stand or fall on their own merits.

In the past, where the university contribution has been spelled out specifically there has been some difficulty with the General Accounting Office as to whether the contributions made by the universities have fulfilled the terms of their contract. This does not imply any criticism of the GAO procedures. On the contrary, the government methods are sufficiently flexible if the contracts are appropriately written. This office has corrected this difficulty by drawing up the contract in such a way that the universities contributions are expressed in terms specifying services and facilities, and to date this appears to be a satisfactory approach. In general, it is believed that the method adopted in drawing up contracts should be one which will conflict as little as possible with the general methods of disbursing and accounting for federal funds.

The report from the Committee of the American Society of Engineering Education on contractual relations with the Federal Government merits some comment in view of the serious implications of their criticisms. First, it should be noted that the members of this committee, by virtue of their positions, are more apt to be interested in the financial solvency of their schools as business institutions than in their academic accomplishments. As such, one might question the objectiveness of their comments insofar as the scientific research program of their respective institutions is concerned. This is important because, in accordance with the provisions of the Atomic Energy Act, the Commission's primary interest with respect to the universities is to foster and develop scientific research and not to provide general support to the universities. It seems, therefore, that this report could be more appropriately directed to the sponsors of a federal aid to education policy. Indeed, the report specifically and unambiguously develops the thesis "that every project negotiated by AEC with an educational institution should recognize the full

cost to the institution of undertaking the research". In this respect there are many, within and without the universities, who still believe that research is a major part of the normal university functions. It, therefore, follows that if it should so happen that the university has a research program, or can develop a program, wherein there is mutual interest between the university sponsors of this program and the AEC, then there is a mutual moral obligation to contribute to its support. Any other course is "federally sponsored education" under a new name. Once the above principle is established, this office is prepared to accept as constructive some of the criticisms on the details of the handling of university contracts even though there has been little trouble in this respect between OROO and their contracting universities. In summary, it seems desirable to reiterate the two principles which are believed to be fundamental in establishing a policy on the contractual relations between the universities and the AEC:

1. Where there is mutual interest in a research program between the university and the AEC, the university's interest being evidenced by the desire to do this research regardless of AEC participation if the means are available, then there should be a recognition of mutual obligation to contribute to the financial support of the program;
2. That if the universities place themselves in the research business in order to contribute to the general support of their institution then they must expect to be treated on the same competitive basis as any other commercial contractor.

The OROO finds that a fixed overhead figure is the simplest and best from an administrative point of view. It has the further advantage that the operations offices are not called upon to pry into the internal management policies of the university in order to determine and justify the actual costs in each case. This office considers the soundest policy to be the one which results in a minimum of interference with university affairs and which can be administered with a minimum of red tape. In addition, the present OROO contracts provide the needed flexibility without giving rise to increased administration burdens in the way of costly audits and other forms of paper work. Evidence of the proper intentions of the universities in this respect is the large number of extensions which have a sizeable carry-over of funds.

In this connection, considerable confusion on the present university contracts policy could be eliminated by placing them into a different classification from the integrated contractors. The reason for this is that many GM Bulletins are issued on such subjects as Finance and Accounting Procedures, Insurance, Classification Procedures, Use of

Critical Materials, Contractor Selection, and many others of the like, which have no bearing on university contracts. As an example of this, attention is invited to "Guide for Contractors", issued by the AEC, Washington D. C. Nothing in this guide specifically exempts the university-type contractors from its provisions, yet the amount of material contained therein which specifically applies to these types of contracts is relatively small. Excepting the universities from the provisions of GM Bulletins and issuing a special simplified set of instructions for them instead, would result in a marked increase in efficiency and understanding.

In the matter of property, OROO has followed the general practice of permitting the university to retain title to the equipment in those cases where a substantial contribution was made by the university and where, because of obsolescence and the nominal value of the equipment, it was not economical to maintain property records. This office does not feel that there is anything to be gained by adjusting the contract so that the university money goes for equipment and the government money for operations costs, salaries, etc. It appears that this is merely avoiding the issue, so long as it does not alter the amount of money contributed by the Government. It is felt that the preferable method is to accept the actual realities of the case rather than attempt to distract from the fact that equipment is being furnished by the Government. It would appear that tangible evidence of support to the program in the form of equipment which would be in existence for many years would be the type of support most easily justified now, or some future date. Furthermore, it is more easily determined that funds spent in this manner are to serve, or have served, a useful purpose than if the same amount of money had been used to cover intangible costs such as overhead or salaries. Moreover, even after termination of the contract, the equipment remains with the university and provides them with the means and incentive for training and developing new scientists and carrying out research on their own initiative. This would be particularly true where the Commission terminated their contractual interest in the program because of lack of funds. In addition, in many cases, the rapid obsolescence of the equipment and the cost of maintaining property records provides sufficient justification to turn this equipment over to the contractor as part of the Commission's contribution to the program. In this respect, there is some difficulty in foreseeing use of the equipment for other purposes. Some of the reasons for this are that the equipment might undergo modifications to adapt it to the desired program, thus creating a non-standard item; it might be made part of an accessory system; or use of the item might be lost by it being stored under a non-standardized nomenclature. Because of these, and other similar reasons, this office has adopted the practice of retaining title to large items, such as Van de Graaff machines, around which the program is built, but of transferring title to smaller items of equipment.

With reference to payment of salaries, this office believes that payment of summer participants can be justified. First, is the fact that there are few, if any, summer participants in the university contracts programs who could not enjoy as much or more monetary income by hiring out to the national laboratories or other research institutions often at a greater salary. To stay at the university during the summer at less salary indicates an intense personal interest in the contract. This is to the advantage of the Commission as it provides for work continuity and maintains interest throughout the year, resulting in increased efficiency. Furthermore, it is believed that close scrutiny by the operations offices of the progress of the work at the end of each contract year would insure against a contract being perpetuated unless a real contribution were being made. However, it is believed that the salary of any faculty member participating in the contract but who has permanent tenure with the university should be paid by the university for all periods other than the summer as mentioned above. The purpose of this is to not encourage the university to build up a permanent staff which they cannot support when and if their contracts are terminated.

The draft staff paper (Pars. 30 and 50) indicates that the authority of the Commission to enter into off-site research contracts is contained in subsections (b)(1) and (b)(3) of Section 1 of the Atomic Energy Act. It is the understanding of this office that Section 1 of the Act is merely a statement of the policy and purpose of the Congress in its enactment, and that the authority to enter into off-site research contracts is specifically provided in Section 3(a) of the Act, as follows:

"Sec. 3. (a) Research Assistance. -- The Commission is directed to exercise its powers in such manner as to insure the continued conduct of research and development activities in the fields specified below by private or public institutions or persons and to assist in the acquisition of an ever-expanding fund of theoretical and practical knowledge in such fields. To this end the Commission is authorized and directed to make arrangements (including contracts, agreements, and loans) for the conduct of research and development activities relating to --

- (1) nuclear processes;
- (2) the theory and production of atomic energy, including processes, materials, and devices related to such production;
- (3) utilization of fissionable and radioactive materials for medical, biological, health, or military purposes;
- (4) utilization of fissionable and radioactive materials and processes entailed in the production of such materials for all other purposes, including industrial uses; and

(5) the protection of health during research and production activities."

Attention is invited to the fact that the Commission is not only authorized, but is directed, to make arrangements for the conduction of the above program of research and development. It is felt that the program stated above implies a much broader research base than is being presently applied to university contracts. Therefore, a statement of policy by the AEC which recognizes these broad implications would be most beneficial to the program and also would be in keeping with the wording and the spirit of the Atomic Energy Act.

In summary, the Oak Ridge Operations Office:

1. Agrees with Conclusion (a), Paragraph 51 of the draft staff paper on "Contract Policy for Offsite Research"; subject to the fact that the Commission should adopt a policy which will make every effort to obtain as much research as possible for each dollar spent, and, to this end, should insist that the universities support as much of the load as possible, consistent with their interest in the program; the type and amount of Commission support being uniform in small contracts for less than \$100,000, but with provisions for individual negotiations for contracts larger than this amount, or for contracts covering a specific need and in which there is no expressed interest by a university;
2. Believes that there should be as little tampering as possible with the general presently accepted method of disbursing federal funds so as to not make the problem of justifying additional funds more difficult;
3. Believes that the participating contracts advocated by Paragraph 1 above should pay a fixed rate for overhead rather than adopt one which requires an audit of the universities' books;
4. Agrees with, and has followed except on large items of equipment, Conclusion (d), Paragraph 51, of draft staff paper, on transfer of equipment;
5. Believes that contracts for basic research should cover no portion of the salary, other than for the summer months, of the university representative designated as in charge of the project, or any other faculty member having tenure;
6. Agrees with Conclusion (f), Paragraph 51, of draft staff paper on "Contract Policy for Offsite Research".

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7. Believes that the authority for university research contracts rests on Section 3(a) of the Atomic Energy Act rather than Section 1. Furthermore, it is believed that any policy statement by the Commission should recognize that not only is a broad research program authorized but is necessary in order to carry out the directives of this section.

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