

GENERAL ADVISORY COMMITTEE  
to the  
U. S. ATOMIC ENERGY COMMISSION  
Washington 25, D. C.

April 10, 1954

DELETED VERSION ONLY

Mr. Lewis L. Strauss, Chairman  
U. S. Atomic Energy Commission  
Washington 25, D. C.

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Dear Mr. Strauss:

Herewith is the summary report of the 39th Meeting of the General Advisory Committee, held in Washington on March 31, April 1 and 2, 1954.

All members were in attendance.

We wish to thank the Commission and its staff for their cooperation in supplying background information for the subjects which we considered, and in arranging for the attendance of staff and of Drs. Froman and Mark of the Los Alamos Laboratory, who greatly aided the deliberations of our Committee at this meeting. We paid particular attention to: (1) the results of the Castle tests of [redacted] (2) the problems of production of fissionable materials and of tritium and lithium-6 -- included in these deliberations were discussions of the problems raised by [redacted] thermonuclear weapons; (3) the problems of the Research Division in a number of specific aspects which will be detailed below; (4) ways and means of answering the question which the General Manager directed to us on the subject of the boiling water reactor.

We also discussed at length the use of the Nevada Proving Grounds for further tests. Our conclusions in this matter are being forwarded to you in a separate letter.

(1) The GAC was naturally very gratified with the results of the Castle tests of [redacted]. These tremendously successful tests go far to alleviate some of the concern expressed in the last report of the Committee with regard to the thoroughgoing change which seemed to be necessary in the materials requirements as a result of the DOD request. We now feel as a result of our meeting that our objectives can be met without any serious disruptions of the main parts of the program. We hope that the Commission will find some appropriate way to express the debt which we all owe to the Los Alamos Laboratory for their brilliant achievements in the defense of our country.

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(2) From our discussions with Dr. Froman and Dr. Mark, we suspect that the problems which have been raised with regard to the possible incidence and effects [redacted] are now less pressing as a result of the Castle tests. It seems likely to us that the pressure for the production of plutonium of a better grade than 200 g/T is greatly diminished. In this connection, we reiterate our suggestion that at the next test series at the NPG, a test be made to determine more accurately the conditions [redacted]. In the same connection, the GAC felt it desirable that we proceed with the production of U-233, at least in the amounts contemplated at the time of our meeting, because it seems likely that the problem of [redacted] may arise again in connection with other weapon developments. In any event the properties of U-233 as a weapon material are well worth exploring.

(3) Research

a) We were very much concerned at the reduction in the budget for research which was made in the House Appropriations Committee and fervently hope that the budget will be restored to the requested amount of \$42 million. The increase in the research facilities of various laboratories, both on-site and off-site, and the general improvement of the level of research both in quality and quantity make this cut appear very unwise at the present time. The necessary overhead expenses, which must increase as the facilities themselves increase, are such that a budget cut would mean the elimination of researches in the on-site laboratories which are of great importance to the whole research program. It will surely be agreed that the great increase in the Commission's program, both in magnitude and variety, should be reflected by an appropriate increase in the research effort.

b) We have previously had occasion to remark on the excellence of the joint ONR-AEC program in nuclear physics. We recommend that the Commission try to find ways and means to continue this program, at least at the old level, without the expenditure of longevity funds which are so important for the stability of a research program in the university environment.

c) It has always been difficult to obtain sufficient effort directed towards research leading to methods of isotope separation. The GAC feels that the Commission should be very responsive to proposals from Commission laboratories or other research organizations for research in this field.

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d) The GAC had the opportunity of discussing with the General Manager the Commission policy with respect to the employment and admittance of aliens to unclassified research in Commission laboratories. We feel that the policy adopted by the Commission is a very good one. However, it has come to our attention that in practice the implementation of this policy suffers from very long delays in AEC action on requests for

[redacted]

approval. These delays are frustrating to laboratory personnel and administration and very often result in the unnecessary loss of efficiency and good will. We hope that the Commission policy will be promulgated to the laboratories concerned and that decisions with regard to approval can be made more promptly in the future.

(4) During the month of July, the Subcommittee on Reactors, Materials and Production intends to make a series of visits to various sites, including the Argonne National Laboratory, in order to be able to comment on questions raised by the General Manager with regard to reactor development and to the boiling water reactor in particular. Later in the same month, the Weapons Subcommittee intends to visit Los Alamos, Sandia and possibly Livermore to discuss recent developments and plans for the future.

The next meeting of the GAC will be held in Washington on May 27, 28, and 29, 1954. In the meantime, the members of the Committee will continue to be available to the Commission for any problems which may arise.

Sincerely yours,

I. I. Rabi  
Chairman

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