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C. W. Shilling, M. D., Deputy Director
Division of Biology and Medicine

May 11, 1959

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John F. Bonner, Asst. Chief, Medical Research
Branch, Division of Biology and Medicine

COMMENTS ON ROUGH DRAFT OF AEC LABORATORY HEARINGS.

SYMBOL: EMM:JFB

I agree with the initial definition of the term, "basic research," but I do not agree with the sentences that follow, which actually destroy the meaning of the definition. I cannot resist pointing out that basic research may have immediate practical application, and the fact that there is a practical application does not exclude the research from the basic category. Rather, one just doesn't know whether basic research has practical application, nor is there any guarantee that it will have eventual application. That is, "Wait long enough and someone will find a practical application," is not a generally true fact. The actual fact is that the majority of basic research is useless from a practical viewpoint because it is later superceded by newer knowledge. The number of definitive classical experiments in physics, chemistry or biology are few indeed.

One needs to think only of the concepts of elementary particles in nuclear physics thirty years ago or the biochemist's knowledge of intermediary metabolism at that same time. I must take emphatic exception to the statement that medical research bears the same relation to biological research as engineering development does to basic research. This is not a valid comparison. For example, human blood groupings, so important for successful blood transfusions, were not first observed in animals, - and in fact, no animal has the complex immunological relationship shown by the blood cells of man. We would have to wait until after the millenium before the various problems could ever be worked out with laboratory animals. At the present time, although we support considerable basic work in the effect of radiation on immune mechanisms, many clinicians believe that the successful use of bone marrow transplants in the treatment of radiation sickness can only be worked out in man, and cannot be extrapolated from laboratory animals.

This discussion is aimed at clarifying the position of several of our university laboratories. The fact is that the four "university" programs supported by DEM are more "programmatic" than those of the national laboratories. By "programmatic", DEM means research basic

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to and in support of our need to know the answers to specific questions. These questions are often prosaic, and the answers do not push back any frontiers. They are, however, absolutely necessary for the safe operation of the entire atomic energy complex.

It is, therefore, true that several of the DEM laboratories do have definite research missions, and these missions may receive more, rather than less emphasis, in the immediate future. And in the search for programmatic or practical solutions to AEC problems, occasionally someone does stumble across a piece of fundamental information.

Basic research is the product of an inquiring and analytical mind, not of an academic atmosphere.

OFFICE ▶	DEM				
SURNAME ▶	JFBonner:cw	INFORMATION & PUBLICATION	6		
DATE ▶	5/11/59				

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March 20, 1959

Major Kent T. Woodward, M. C.
 Division of Nuclear Medicine and Chemistry
 Walter Reed Army Institute of Research
 Washington 12, D. C.

Dear Kent:

I passed along your paper "The Determination of Internally Deposited Radioactive Isotopes in the Marshallese People by Excretion Analysis" to Dr. Dunham per your request. Did you wish us to do anything with the paper classification-wise?

There are two thoughts that might be of some use to you. I think the University of Washington people have developed more data on contamination in the Rongelap plants than perhaps you had knowledge of at the time of writing. Secondly, an ostensibly representative sample of a Rongelap meal was collected at the time of the 1958 visit. A summary of these data is enclosed. If you wish to use these data I would suggest giving due credits to Bob Conard et al for their collection and to HASL for their analyses. Unfortunately this is a single sample and further there is some question about its being representative and about the sample treatment before analyses. As you know the teams are out there now and we hope for more and better samples of diet. In any event, my estimates made about two years ago based on the limited data then available may be low compared to present day contamination in the food. Whereas, my estimates and the still limited data give a perspective to the potential hazard, they may not be precise enough for use in establishing relationships with the analyses results. Incidentally, the relationship expressed in the last sentence of the section on strontium-90 is not clear to me.

Sincerely yours,

INFORMATION & PUBLICATIONS *6*

Gordon M. Dunning, Chief
 Radiation Effects of Weapons Branch
 Division of Biology and Medicine

wo Enclosure: *6 files*
 Sample of Rongelap meal

cc: Dr. Dunham
 Dr. Shilling
 Dr. Western

OFFICE ▶	BMREW				
SURNAME ▶	GMDunning:em				
DATE ▶	3/20/59				

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