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MINUTES

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*31st Meeting  
Washington DC*

Advisory Committee for Biology and Medicine

April 4 and 5, 1952

Attendance

ATTENDANCE

Members of Committee

- Dr. Alan Gregg, Chairman
- Dr. E. W. Goodpasture, Vice-Chr.
- Dr. Edward A. Doisy
- Dr. G. Failla
- Dr. Curt Stern
- Dr. Joseph T. Wearn

Staff of AEC and  
Division of Biology  
and Medicine

- Dr. Shields Warren
- Dr. John C. Bugher
- Dr. Walter D. Claus
- Dr. Gordon Dunning
- Dr. Paul B. Pearson
- Dr. N. Edward Tolbert
- Dr. H. H. Plough
- Dr. C. L. Dunham
- Dr. G. A. Hardie
- Mr. J. F. Haggerty
- Mr. R. L. Corsbie
- Mr. H. L. Bowman
- Mr. Ward Miller, Jr.
- Dr. George V. LeRoy
- Dr. Merrill Eisenbud
- Mr. H. C. Brown, Jr.
- Mr. R. L. Butenhoff
- Mr. R. W. Johnston
- Mr. L. Joe Deal
- Mr. E. R. Fleury
- Col. W. R. Sturges
- Mrs. Frances R. Montgomery

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Visitors

- Dr. Norvin C. Kiefer
- Dr. Robert H. Flinn
- Dr. Vincent B. Lamoureux
- Mr. Jack C. Greene
- Dr. Karl M. Wilbur
- Dr. James H. Sterner
- Col. G. M. McDonnel

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FRIDAY, April 4, 1952

The Chairman convened the meeting at 9:30 a.m.

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CLASSIFICATION CANCELED

DOE NEW DECLASSIFICATION REVIEW E.O. 12958  
BY 60354 BCF/STP/STP/STP/STP

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Minutes of Meeting  
held at University  
of California on  
January 10, 11,  
and 12, 1952

The first order of business presented to the Committee was the draft minutes of the meeting held at the University of California in Davis and Berkeley, California on January 10, 11 and 12, 1952. The minutes were approved unanimously upon a motion by Dr. Wearn and seconded by Dr. Stern.

Mr. James F.  
Haggerty

Dr. Warren introduced Mr. James F. Haggerty as a new member of the staff of the Medical Branch and welcomed Dr. Karl M. Wilbur of Duke University. Dr. Wilbur plans to join the staff of the Biology Branch during the early summer.

Report on Research  
Proposals approved,  
extended and  
declined during  
January, February  
and March, 1952

Research proposals totaling 81 approved or extended during the months of January, February and March, 1952 were reviewed by the Committee as well as the nine projects which had been declined. The programs of the projects were outlined by Drs. Pearson, Plough, Tolbert, Claus and Dunham.

(A list of the projects approved and declined is attached as Addendum No. 1).

Dr. Warren advised the Committee that particular care is being exercised in approving the renewals. The progress reports are judged critically and staff members of the branches visit the projects periodically to ascertain the quality of the work and the progress that is being made.

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The Committee reiterated their previous recommendations that the subtitles of research projects be more clearly defined by specifically describing the work of each project. They further recommended that in reporting contracts renewed or approved that such contracts be listed in the following order: new projects first, followed by renewals; list the projects in order of priority which show the most promise. It was stated that this information would be valuable to the Committee in reviewing the list and will afford them a method of approach in their review. It was further recommended that after the investigator's name, it should be indicated precisely where the work is performed i.e. University of California, Berkeley, Davis, or Los Angeles as the case may be.

The Committee stated also that it should be indicated on the list of projects whether or not the investigator is utilizing graduate students on the training and teaching aspects in connection with his AEC contract. They felt that this would be a significant justification for carrying on off-site research work.

These suggestions will be adopted and placed

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in effect in listing the projects for the next meeting.

The Committee concurred in the action of the Research Committee of the Division in their approval of the list of projects and they were of the opinion that the proposals declined were turned down in accordance with general policies of the Division of Biology and Medicine of the Atomic Energy Commission.

Consultants

Dr. Warren advised the Committee that upon their suggestion made at the meeting held in January, consultants should be selected geographically from throughout the United States, three additional consultants had been selected from the southeastern area and were in the process of being cleared and appointed, namely:

- Dr. Douglas H. Sprunt, University of Tennessee
- Dr. Wiley D. Forbus, Duke University
- Dr. Russell L. Holman, Louisiana State University School of Medicine.

Overhead as related to research projects

The Deputy Director presented the broad problem of overhead on research projects for the consideration of the Committee and requested their guidance and advice. He stated that the Division had tried to follow a principle of 8% of the entire contract to cover cost of overhead on lump-sum contracts for basic research.

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Dr. Bugher brought out that it was the desire of Harvard University to establish a fixed overhead sum applicable to all Government-supported contracts. It would be automatic under their procedure to apply 25% to any contract, whether it be applied and programmatic or whether it be basic research.

This creates some difficulties owing to the large gap between 8% which the Division has followed and the 25% which is involved with the Harvard contracts. Dr. Bugher further advised the Committee that the 8% allowed on the majority of contracts does not, of course, cover the true overhead cost to the institution and suggested that consideration might be given to raising the level to somewhere between 13% and 15%.

After a full discussion and in view of the importance of the problem the Chairman requested that a vote on raising the amount of overhead from 8% to 12% or 15% be deferred until the next meeting. The Chairman further requested that each member consider himself a committee of one to come to some conclusion for presentation at the next meeting when a vote will be taken and guidance given to the Director of the Division of Biology and Medicine and his staff.

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AEC Expansion  
Program

Mr. Walter J. Williams, Deputy Manager of the AEC, summarized the proposed AEC Expansion Program. He stated that if the program as outlined is approved by the Congress, it will cost approximately five billion dollars. This expansion would include additional piles at Hanford twice the size of the present pile; and new plants at Oak Ridge and Paducah.

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Civil Defense  
Matters with  
Emphasis on  
Radiological  
Warfare. Mr. R. L.  
Corpsie, and Lt.  
Col. G. McDonnel

Col. McDonnel summarized the data relevant to radiological warfare from Operation Jangle. In this connection a film was presented depicting Operation Jangle. Col. McDonnel gave an interesting narration of this film. A broad discussion ensued on the radiological warfare program and further reports regarding this problem will be made at a later date.

Beryllium Meeting  
of April 3, 1952

Dr. James H. Sterner advised the Committee that a group of individuals who had been closely identified with the beryllium problems held a meeting in order that they could be reoriented in the problem and to evaluate what has happened since certain controls were put in and certain standards were adopted. In summary, it was stated that the present standards which have been placed in effect are reasonable and they should be continued on the present basis and

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permitted to operate. He did urge, however, that the AEC should not use beryllium except where absolutely necessary and in as few places as possible.

Radiation  
Cataracts

Dr. Dunham reviewed the proceedings of the last meeting of the NRC Radiation Cataract Committee.

It was brought out that only about 10% of so-called radiation cataracts are clinically important, i.e. producing visual defects that affect the person's vision. The Committee was pleased to learn that no new cataract cases have been uncovered in Hiroshima and Nagasaki among those surveyed 18 months previously.

Atomic Bomb  
Casualty  
Commission

Dr. Gregg reported on the visit that he had made to the ABCC project in Japan while enroute home from a personal visit to India. He stated that the project seemed "to be going smoothly and well" in terms of meeting their regular load of examining patients and getting material recorded. Morale of personnel was considered good.

SATURDAY, APRIL 5, 1952

Disaster Plans -  
Mr. Fleury

Mr. Fleury brought the Committee up to date on Disaster Plans since his last appearance by advising them that the Commission had discussed the need for shelters at individual installations with the

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Military Liaison Committee and with representatives of FCDA. Mr. Fleury said the Commission had decided that they would only make a request at this time of the Budget Bureau for approval of funds for shelters and a control center at Hanford. Hanford had been selected because of its obvious vulnerability, due to geographic location. The Budget Bureau passed the request for funds for shelters and a control center at Hanford, and the Congress has approved this request by appropriating 3-1/2 millions of dollars. The Committee was oriented on the plant evacuation plans at the various field installations as well as the Washington headquarters and the blast protection program.

In this connection it was brought out that a protective construction committee reviews all these sites from the point of view of vulnerability and desirability for building or providing certain buildings with complete blast protection.

Shelter Plans and Structural Screening Committee, Biomedical Planning and Screening Committee - Dr. Bugher and Mr. Corsbie

Dr. Bugher presented the background and proposed functions of these two new Committees:

- Mr. A. E. Gorman, Reactor Development, AEC
- Mr. Richard W. Alger, Construction & Supply, AEC
- Mr. Christian Beck, Engineering, AEC
- Col. W. R. Sturges, Military Application, AEC
- Mr. R. L. Corsbie, Civil Defense Liaison Branch
- Mr. Ward Miller, Jr., " " " "
- Mr. H. L. Bowman, AEC Consultant



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Dr. T. L. Shipman, Los Alamos Scientific Laboratory  
Mr. W. E. Reynolds, Public Buildings Administration  
Mr. W. C. Clark, Public Buildings Administration  
Mr. H. K. Gayer, FCDA

Biomedical Planning and Screening Committee

Dr. Shields Warren, Biology & Medicine, AEC  
Dr. Howard Andrews, USPHS  
Dr. Alvin C. Graves, LASL, AEC  
Capt. H. H. Haight, Military Application, AEC  
Dr. George V. LeRoy, University of Chicago  
Dr. W. Randolph Lovelace, II, Lovelace Foundation  
Dr. Wright Langham, LASL, AEC  
Dr. T. L. Shipman, LASL, AEC  
Dr. E. G. Williams, FCDA

Mr. Corsbie followed by talking about shelters and summarized the current status of the construction screening committee.

Mr. Corsbie closed his remarks by setting forth what had been done by the AEC to assist the FCDA and he quoted the following excerpts from remarks made by Commissioner Glennan to State Directors of Civil Defense at a meeting held on January 11, 1952 which are as follows:

"The sponsorship in 1950 of a series of instructor training courses in radiological monitoring techniques, and the medical and nursing aspects of atomic warfare. During these courses 83 radiological monitors, 157 doctors and 70 nurses received training. These people are now available as a cadre of instructors for use by state and local governments in their civil defense programs.

"The establishment of emergency radiation monitoring teams in 18 different locations in the United States. Although these were established mainly to meet the needs of the AEC itself, they

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have been and still are available for emergency civil defense needs in the areas where they are located. As the local civil defense monitoring teams are organized, we hope that these AEC teams can be reserved for the AEC's own emergency use.

"The preparation and publication, jointly, with the Department of Defense, of the propulsive value, effects of atomic weapons, with which you are doubtless familiar. Despite recent advances in weapons development, this volume continues to be qualitatively accurate in most significant respects and remains the most valuable single source of information on weapons aspects. We will, of course, revise this publication from time to time as the new knowledge learned in our weapons test programs become available. But for present purposes, it provides a very sound basis for civil defense planning.

"The participation of Commission people as consultants and advisers in the civil defense exercises held in Washington, Seattle and Chicago in 1950, under the sponsorship of the National Security Resources Board.

"The development in cooperation with the Civil Defense Administration of emergency exposure for food and water.

"Preparation for the non-secret bibliography, for the NSRB. This comprehensive list of publications on matters related to civil defense contains more than 400 titles.

"The loan from our emergency stockpile of radiation detection instruments and radiation sources to state and local civil defense organizations for training purposes. To date instruments have been loaned by various AEC installations to 24 civil defense organizations, in 22 states, and radiation sources have been loaned to 21 organizations in 19 states.

"The arrangement whereby 25 qualified technical people from the FCDA, cleared for access to secret information, participated in the last series of atomic weapons tests in Nevada--this would be Buster-Jangle last fall--as working observers and radiation safety technicians."

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Greenhouse -  
Dr. LeRoy

Dr. LeRoy advised the Committee that the final report of the Biomedical program at Operation Greenhouse would soon be available. He reviewed the summaries and conclusions of what was learned from the whole operations, and stated it was the sense of the biomedical group that such a large-scale study need not be duplicated. The project seems adequate as a base line to enable the planning of several much smaller projects, well conceived and executed on a statistically significant scale. Dr. LeRoy further stated that the description of the procedure for the biomedical program has been written in some detail principally for the benefit of experimenters who may be required to plan comparable studies in the future. It was felt that the additional effort and expense required to conduct the biomedical program at Eniwetok was justified by the results.

Sub-Human Primates  
Dr. Dunham

Dr. Dunham enlarged upon his previous statements in reference to the work now being undertaken on sub-human primates. The Committee displayed a great deal of interest in the purport of the progress reports on projects under the guidance of Dr. Horace W. Magown and Dr. Andrew H. Dowdy of UCLA; Dr. Theo. C. Ruch of the University of Washington School of Medicine, Seattle, Washington;

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Dr. John Z. Bowers, University of Utah, Dr. Stanley Cobb, Massachusetts General Hospital, and Dr. Richard R. Overman, University of Tennessee.

Dispersal  
Problem -  
Mr. Corsbie

The Chairman asked Mr. Corsbie to give a few remarks on the dispersal problem and the Committee was interested in hearing Mr. Corsbie outline a bill that had been presented to the Congress last year by the NSRB, which in all probability will be placed on the calendar this year. He stated that it was for the security of the National Capitol and its government employees. The bill covered the following three points: (1) to disperse government agencies vital to the carrying on of the Federal Government in Washington to points outside of the capitol; (2) decentralize about 25,000 positions in Washington permanently beyond the adjoining communities; (3) demolition of the present temporary buildings which presently house 31,000 government workers and which are the most hazardous type of construction from the point of view of blast or thermal burns and from radiation.

Polygraph -  
Dr. Hardie

Dr. Hardie reported on the meeting of a panel convened by the Security Division to discuss the use of the polygraph or lie detector.

The panel consisted of Dr. Eugene Landis, professor of physiology, Harvard University;

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Dr. Douglas Kelley, professor of criminology, UCLA (Berkeley), Dr. D. G. Ellson, professor of physiology, University of Indiana; Dr. LaMoyné Synder, Medical Director of the Michigan State Police, and Professor Fred Inbau, Professor of Law at Northwestern University, Dr. Shields Warren, Director, Division of Biology and Medicine, and Capt. J. A. Waters, Jr., Division of Security. Capt. Waters oriented the Committee on the overall AEC security program and problems related thereto. He told the panel that the purpose of the meeting was to gain the benefits of the panel's judgment on the reliance to be placed on the lie detector examination and also he hoped the panel would suggest objective experiments through which a sound basis could be established for forming conclusive judgments on the utilization of the lie detector in the security program.

Dr. Hardie stated that the panel was of the opinion that the routine use of the polygraph for personnel screening is not recommended although it might be useful in detecting theft of classified documents or material.

The Biophysical  
and Biological  
Effects of Neutrons  
Dr. Claus

Dr. Claus stated that a symposium on the biophysical and biological effects of neutrons sponsored by the Director of the Division of

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Biology and Medicine met in Washington, March 17-18, 1952.

Discussions which followed the meeting revealed that while present personnel monitoring methods are not entirely satisfactory, usable portable devices for adequate measurement of neutron flux over a wide range of energies have been developed. With respect to biological effects, it was agreed that cataract formation in the eye lens and action on the gonads (sterility and genetic effects) were probably the most critical neutron effects, and that these need evaluation entirely apart from any reference to a permissible exposure limit of 0.3r (roentgen-equivalent-man).

Discussions  
relating to C-14  
and to Neutrons-  
Dr. Tolbert

Dr. Tolbert reported on the conference conducted by Dr. Bruce of ANL wherein discussions ensued relating to toxicity of  $C^{14}$ . He stated that there was a general agreement among those attending the meeting that it would be justified in case a need did arise to give a person  $C^{14}$  in therapy studies to integrate the radiation dose over a period of three months for arriving at tolerance levels.

Fallout Studies  
from Operations  
Buster and Jangle

Mr. Eisenbud presented several slides which depicted graphs of the fallout studies. He stated that the results of all weather bureau collections were counted and extrapolated back to the time of

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collection and were summarized. These studies were designed in such a way that the data could be utilized to provide meteorological information,

Studies relating to uptake of fission products  
Dr. Tolbert

Dr. Tolbert explained to the Committee the close cooperation that exists between the AEC and the Agriculture Department in the joint studies now being carried on relating the uptake of fission products and induced activity in the soil by the plants. He stated that the Department of Agriculture out at Jangle had placed at strategic points wash tubs which were used to catch the radioactive soil that fell out after the shots and it was measured for the quality and amount of activity. This fallout material is being studied in Greenhouse experiments at Beltsville.

Recent Developments of genetic effects of radiation - Dr. Plough

Dr. Plough presented a summary of the genetic data on the effects of radiation, i.e. significant data of interest to geneticists. In this connection excerpts from a published handbook of atomic weapons for medical officers were fully discussed.

Cancer Research Program - Dr. C.L. Dunham

Dr. Dunham reviewed the cancer research programs which included the leukemia studies under the Atomic Bomb Casualty Commission; cancer programs initiated and established at the major installations in close proximity to certain unique facilities and equipment with reference to the availability of short-lived

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isotopes; small cancer research programs at universities and independent laboratories involving the exploitation of atomic energy; and the distribution of free isotopes to persons working in the cancer field.

The Committee expressed their views on the programs with special emphasis given to the continuance of the distribution of free isotopes.

A full discussion followed and in this connection it was the sense of the Committee that in light of the increasing demand for free isotopes in laboratories and hospitals and possible waste of critical materials and also due to the limitation placed on the AEC budget that they would like to see at this time the continuance of free isotopes for those persons in laboratories or hospitals who are investigating cancer and serious consideration should be given discontinuing the issuance of free isotopes to those who are simply using isotopes for routine therapeutic purposes.

Next Meeting

It was voted to hold the next meeting at the Atomic Energy Project in Chalk River, Ontario, Canada on May 9 and 10, 1952.



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EXECUTIVE SESSION

Dr. Shields  
Warren

The Committee learned with regret that Dr. Shields Warren was retiring as Director of the Division of Biology and Medicine on June 30, 1952.

Therefore, it was the unanimous recommendation of the Committee that Dr. Warren be appointed a member of the Advisory Committee for Biology and Medicine at the termination of his present appointment as Director of the Division of Biology and Medicine or on July 1, 1952.

Dr. Warren is to replace Dr. Goodpasture who is retiring from the Committee on June 30, 1952.

ADDENDUM

- #1 - List of Projects
- #2 - Letter to Mr. Boyer from Dr. Alan Gregg
- #3 - Letter to Dr. Gregg from Mr. Boyer

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UNITED STATES  
ATOMIC ENERGY COMMISSION  
Washington 25, D.C.

April 15, 1952

Mr. M. W. Boyer  
General Manager  
U. S. Atomic Energy Commission  
1901 Constitution Avenue  
Washington 25, D. C.

Dear Mr. Boyer:

The Advisory Committee for Biology and Medicine at its meeting held on April 4 and 5 learned with much regret that Dr. Shields Warren has found it necessary to resign as Director of the Division of Biology and Medicine effective June 30, 1952.

It is my understanding that Dr. Warren has advised you that Dr. Ernest Goodpasture will be retiring from the committee on June 30, 1952. In seeking a replacement for Dr. Goodpasture, it was agreed unanimously that Dr. Warren should be asked to serve on the committee. The matter has been discussed with Dr. Warren and he has consented to accept a place on the committee if the Commission so desires.

I therefore am transmitting the recommendation of the Committee that Dr. Warren be appointed a member of the Advisory Committee for Biology and Medicine at the termination of his present appointment as Director of the Division of Biology and Medicine, or on July 1, 1952.

Sincerely yours,

/s/ Alan Gregg

Alan Gregg  
Chairman, Advisory Committee  
for Biology and Medicine

ADDENDUM #2

C O P Y

UNITED STATES  
ATOMIC ENERGY COMMISSION  
Washington 25, D.C.

BM:FRM

May 1, 1952

Dr. Alan Gregg  
Room 5500, 49 West 49th Street  
New York 20, New York

Dear Dr. Gregg:

We wish to thank you for your letter of April 15 in which you forwarded the recommendation of the Advisory Committee for Biology and Medicine that Dr. Shields Warren be appointed a member of the Advisory Committee upon the termination of his present appointment as Director of the Division of Biology and Medicine and upon the retirement of Dr. Ernest W. Goodpasture.

The selection of Dr. Warren to become a member of the Advisory Committee, and his willingness to serve, is most gratifying to the Commission, and with Dr. Warren's acceptance of this appointment we are hopeful that we may continue to call upon him from time to time for his guidance and wise counsel in medical and biologic problems as they relate to atomic energy.

We heartily concur in the recommendation of the committee, and we shall initiate Dr. Warren's appointment to become effective July 1, 1952.

Sincerely yours,

/s/ M. W. Boyer

M. W. Boyer  
General Manager

ADDENDUM #3.

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