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MINUTES

143rd MEETING

ADVISORY COMMITTEE FOR BIOLOGY AND MEDICINE  
U. S. ATOMIC ENERGY COMMISSION

at

AEC HEADQUARTERS  
Germantown, Maryland

REPOSITORY DOE History Division  
COLLECTION #1320, Tommy McCraw Classified  
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FOLDER 16

September 8-9, 1972

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The 143rd meeting of the Advisory Committee for Biology and Medicine was held September 8, 1972, in Germantown, Maryland, and September 9 at the "H" St. Office, Washington, D. C. Members present were Drs. R. D. Moseley, Jr., (Chairman), C. A. Finch, T. A. Lincoln, J. S. Laughlin, W. J. Schull, P. R. Stout (Vice-Chairman), John B. Storer (Scientific Secretary), and Ms. Rosemary Elmo (Executive Secretary). Headquarters personnel included Drs. S. G. English, J. R. Totter, W. W. Burr and a great many of the staff from the Division of Biomedical and Environmental Research (DBER). Chairman Moseley opened the meeting at 9:10 A.M. Dr. Totter made announcements of general interest. The first of these was introduction of new staff members in DBER. These included Drs. Lawrence S. Meyers, Thomas S. Matney, George R. Shepherd, William O. Forster, Richard W. Eppley, Leslie Fraley, Ralph Franklin, Lottie Kornfeld and Marvin Goldman. Dr. Totter also announced that Mr. Joe Deal had left DBER and was now the Assistant Director for Health Protection in the Division of Operational Safety.

Commissioner Larson joined the meeting at this point and greeted the committee on behalf of the Commission. Dr. Larson made a few brief remarks concerning the importance of the DBER program in view of the Commission's expanded mission to examine forms of energy generation other than strictly nuclear.

Dr. Totter announced that Dr. Charles Osterberg had been appointed Assistant Director for Environmental Sciences. Dr. Jeff Swinebroad had been appointed Branch Chief of the Ecological Sciences Branch. A new branch for Analysis and Evaluation had been created but no branch chief had been appointed. Dr. Nat Barr, Assistant Director for Measurement and Evaluation, holds the dual position of Branch Chief of this new branch on a temporary basis.

Dr. Bruner briefed the Committee on the current status of the Marshallese problem. At the May 1972 meeting of the Committee at Brookhaven, Dr. Conard had painted a very bleak picture with respect to our relationships with the natives who had been inadvertently exposed to fallout radiation in the 1950s. Part of the difficulty had arisen from the fact that annual examinations were being performed by a very high powered team of experts from the U.S., but following this annual examination, health care for the natives was minimal. This led to uneasiness on the part of the natives in that they felt if they were really in good health, why was it necessary for this team of experts to come back year after year. This provided a fertile ground for agitation. Because of this agitation, Dr. Conard's team was unable to examine the people at the time of his annual trip in the Spring of 1972.

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Dr. Bruner reported that since Dr. Conard's return to the United States a number of new developments had taken place. In the first place the Trust Territory administration took a stronger stand with respect to the necessity for medical follow-up and insisted that three of the natives who had evidence of thyroid disease go to Tripler General Hospital in Hawaii for evaluation. On the basis of this evaluation two of these patients were taken to Cleveland and their thyroid glands were explored. There was no evidence of cancer in these thyroids and the patients were returned to their home island.

A second development was that a committee of the Micronesia Congress had been set up to investigate the charges leveled against the United States by one of its members. The Committee agreed that the team headed by Dr. Conard should return to Rongelap on the condition that four impartial physicians accompany the team as observers. The composition of this team was to be as follows: 2 Japanese, 1 named by the Surgeon General of the U. S. Public Health Service and 1 named by the World Health Organization. The WHO refused to get involved in the politics of the situation and would not name a representative. The Director-General did, however, suggest that Mr. Pochin, from England, accompany the team. The team is now on Rongelap and Dr. Bruner was optimistic that most of the difficulties had been resolved and that in the future good cooperation would again obtain.

Dr. Bruner briefly reviewed the current medical status of these islanders. On Rongelap there were 19 children between the ages of 0 and 10 years at the time of exposure to fallout. Of these, 2 are normal at the present time. Three are hypo-thyroid and are treated with thyroid medication. Fourteen of the 19 have had surgery for abnormal thyroid states. On Ailinginae where the exposure dose was somewhat lower there were six children at the time of exposure and all are currently normal. Two of the 34 adult Rongelap natives have developed thyroid carcinoma. Findings on the other islands where doses were lower have been negative.

Mr. Joe Deal discussed problems of the resettlement of the Eniwetok Atoll. The Atoll is now controlled by the Department of Defense but is to be returned to the Trust Territory by the end of 1973. The Atoll, of course, was used in a large series of weapons tests but in addition was used more recently as a target area for intercontinental ballistic missiles fired from Vandenberg Air Force Base. Because of this use some of the islands have been contaminated by beryllium which is potentially much more toxic than residual radiation. A radiological survey of the Atoll was made in 1971 and again somewhat later under the leadership of Mr. Tom McCraw, of the Division of Operational Safety. The gamma ray levels on the various islands are quite low but one weapon misfired on the Island of Runit and spread  $^{239}\text{Pu}$  over a large area. There is also a considerable amount of scrap and debris scattered around on the various islands. Another radiological team is to leave for Eniwetok shortly for a tentative evaluation of the radiological status of the Atoll.

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Captain Gay, from the Division of Military Application, described a meeting at the Department of the Interior where the interested agencies met to discuss the return of the Atoll to the natives. The natives quite naturally want the Atoll returned as soon as possible. The administrative details of returning the Atoll to the Trust Territory are simple but it is a serious problem to make the islands habitable for the natives. The approach agreed upon was as follows: The evaluation of the status of the Atoll in terms of health hazard was to be made by the AEC. Clean-up was to be performed by the Department of Defense. The final rehabilitation would come under the purview of the Department of the Interior. The Division of Military Application is the lead Division for coordination of the evaluation with other divisions of the AEC to be involved as required. The estimated cost for the evaluation is as follows: In FY 1973, \$700,000; in FY 1974, \$1,000,000. It will probably be a year before they can evaluate whether a clean-up of the Atoll is possible.

Mr. Deal described the status of the clean-up of mine tailings in Grand Junction, Colorado. A total of \$5,000,000 over a period of five years has been authorized by the Joint Committee on Atomic Energy to clean up the tailings in Grand Junction. The ratio of federal monies to state monies is 3:1. The engineering approach of physically removing mine tailings from under houses and other buildings is possible but is extremely expensive. Another approach that has been looked at under laboratory conditions is to seal the concrete slabs and foundations with plastic to prevent radon from penetrating the buildings. A test under field conditions is now being conducted in one of the school buildings.

Dr. Totter pointed out that at the time of the Bikini survey for rehabilitation of the natives, plutonium contamination was not considered to be a problem, but at about the time the islands were sufficiently cleared to begin planting the cononut palms, people began to worry about plutonium levels. The research vessel from the Puerto Rico Nuclear Center has been dispatched to Bikini to investigate transuranic elements. Measurements would be made both at Bikini and at Eniwetok. Dr. Forster from DBER described the proposed studies to be undertaken at these Atolls. Primarily they would look at the movement of transuranic elements through the ecosystems. The ship is scheduled to leave San Diego on September 8, 1972. Sampling of water is to be extensively conducted. The research is a joint effort on the part of the University of Washington, the Livermore Radiation Laboratory, and the Puerto Rico Nuclear Center. Dr. Forster indicated that through the years there has been an increasing emphasis on the number of research studies on the ecosystem at Eniwetok. In 1971 alone there were 110 identifiable separate projects. Dr. Forster then showed the data on plutonium concentrations in various materials taken from Bikini. The levels were not particularly high. The samples from Runit on the basis of preliminary data appeared to be higher but not as bad as one might have anticipated. Dr. Totter asked how these levels compared with contamination levels in other areas and the answer was that, for example, Rocky Flats shows a very much higher level of contamination.

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Dr. Burr reported that the proposed reorganization of DBER had been adopted. This proposed reorganization was presented to the Committee at its May meeting. Dr. Burr also described proposed new program areas for DBER which are concerned primarily with biomedical and ecological effects of effluents from non-nuclear energy sources. In essence, the evaluation of these pollutants would be similar to the extensive evaluations that have been made in the past of radioactive pollution.

Dr. Barr discussed some of the problems involved with DBER's assigned mission to improve the image of the AEC.

At this point the Committee met in executive session with AEC Chairman Schlesinger and Commissioners Larson, Ray and Doub. Chairman Moseley asked Dr. Schlesinger to clarify the function and role of the Advisory Committee for Biology & Medicine. Dr. Schlesinger responded that in his opinion the research supported by DBER has been very good and very useful. The general public, however, continues to feel neurotic about radiation risks even though polls show that 67% of men and 33% of women favor the use of nuclear power. On the one hand there are good data for evaluation of potential risks and on the other hand a very anxious public. No adequate linkage has been made between the two. He felt that it would be very helpful if the Committee could suggest how to make a linkage between these two. The same problem may well apply to power generation by methods other than nuclear. If the AEC becomes involved in these areas it must be responsive to the concerns of the public. It is no longer adequate to say that scientists have examined the problem and everything is under control. There must be a more effective dialogue with the general public. Dr. Schlesinger also pointed out that there is a serious problem of public reaction to the amounts of plutonium to be generated in the fast breeder reactors. Intervenors in the various licensing hearings are turning their attention from the light water reactors to the hazards of plutonium from the breeders. Chairman Moseley indicated that the concern of the public is with all radiation sources, not just nuclear. Further, scientists with acceptable credentials have become doom criers. It is extremely important to develop an assessment of risk-benefit relationships with alternative sources of power as well as with nuclear sources. At this point the group entered into a broad discussion of the problems of the Commission with respect to misconceptions and misinformation about radiation hazards and nuclear energy. Dr. Larson felt that the Commission had not provided the public with the facts on radiation effects in order to let the public decide for itself. He cited as an example that Hiroshima had a better mortality experience than other cities in Japan. (It is not clear to the Scientific Secretary the source of this information). The discussion then went into the general area of the advisability of providing books, monographs or pamphlets written at the level of the lay public to explain radiation hazards.

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Dr. Schlesinger pointed out that the AEC has very much broader responsibilities as a result of the Calvert Cliffs decision. He felt that DBER could be of particular help to the regulatory side of the operation. He felt that basic research was fine so long as it helps meet the mission responsibilities. He indicated that DBER should work closely with both the regulatory staff and with the Division of Reactor Development.

Commissioner Ray felt that books of the type put out in the Time-Life Series have had very little impact scientifically and doubted that this was a good route to go to increase public awareness of scientific problems. Dr. Schlesinger felt that the previous AEC publications were obsolete and were pitched at the wrong level. He felt that updated publications should be made available.

The discussion returned to the role of the Advisory Committee and Chairman Schlesinger indicated that the function should probably be formulated by the Committee itself. He felt that biology is becoming increasingly important in the public mind and that the AEC should be responsive. The Commission would appreciate any advice from the Committee on this matter. At this point the Committee recessed for lunch.

Dr. William Osburn discussed the concept of environmental research parks. In June the Commission designated about 200,000 acres in South Carolina around the Savannah River Plant as an environmental research park. This apparently was precipitated because the General Services Administration had proposed to sell off land around the Savannah River Reactors that was located more than 6 miles from any reactor. Dr. Osburn showed in detail how such a disposal of land would have wrecked the ongoing environmental research program at Savannah River. There apparently is the possibility that additional areas of federally-owned land may be designated as research parks. Dr. Osburn was of the opinion that such should be done.

Dr. Totter discussed the serious problem of funding of offsite research by DBER. To illustrate the increasing crunch he gave the following list of figures. The funding level for off-site in 1950 was 21% of the total budget. By 1954 it had increased to 28%, and by 1961 to 35%. In 1972 it had fallen to 20%, in FY 1973 to 18.6%, and projected for 1974, 18.9%. He felt that any new studies undertaken in 1974 would probably have to go to on-site laboratories.

Mr. Whitnah described the current financial status of the Atomic Bomb Casualty Commission. The termination allowances for the employees which have been accumulating over the years and which were being held by the Commission have finally been turned over to the National Academy of Sciences for investment. This, of course, provides some help in funding. The basic problem is that the Japanese rate of inflation is about 10-12% a year and consequently the budget requirements of ABCC go up at a corresponding rate. A particularly devastating blow was the reevaluation of the dollar. The Japanese yen is now much more expensive than it had been previously. Negotiations with the Japanese government to see if they will assume a greater role in ABCC affairs are continuing. The Japanese Ministry of

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Health and Welfare, which is the cognizant agency in Japan, is currently preparing a proposal and there may be a meeting between the principals within a year. The AEC hope is that the level of funding in U.S. dollars would stabilize and that the Japanese side would pick up the increases caused by inflationary pressures in Japan.

Dr. Kirby-Smith described the status of the program in stable isotopes. A new plant is being constructed at the Los Alamos Scientific Laboratory with the help of the Division of Military Application. Isotopes of sulfur will be produced at the Mound Laboratory and calcium is currently being produced at Mound under support of the Division of Research. Nitrogen isotopes are currently being separated on a column in Los Alamos. Dr. Kirby-Smith also discussed the status of clinical tests with  $C^{13}$ . Two patients have received  $C^{13}$ -labeled glucose to measure glucose tolerance. The method utilized is to measure  $C^{13}$ -labeled  $CO_2$  in breath. There are plans afoot to use  $C^{13}$ -labeled lactose to screen patients for lactase deficiencies. Currently, the University of California at Davis and the Tennessee Valley Authority are using  $N^{14}$  in environmental studies. The Department of Agriculture has also expressed a strong interest in using  $N^{14}$ .

Dr. Robert Wood reported on the current status of the Bevalac at the Berkeley Laboratory. Calculations indicate that once the machine is operative it should be possible to obtain modest fluences of stripped iron nuclei. Money for the modification of the Bevatron and the Hilac to produce the Bevalac is in the fiscal 1973 budget but it will take at least a year to make the modification. Dr. Wood also reported on the status of the Los Alamos Meson Physics Facility (LAMPF). Money is in the fiscal 1973 budget to complete the biomedical facility at LAMPF. The Cancer Institute has approved an application from the University of New Mexico for preclinical studies with negative pions and the National Science Foundation has approved a proposal from Oak Ridge to provide dosimetry support. A usable pion beam should be available by the Summer of 1973.

Mr. J. Bewick reported on the status of the reactor accident study. The study is being undertaken to consider various facets of reactor risks. The hope is to produce a new document evaluating the consequences of reactor accidents which would replace WASH-740 which was an earlier study of the consequences of a maximum credible accident. Mr. Bewick indicated that the approach will be to use realistic rather than extreme estimates of both risks and consequences of accidents.

Mr. Pennington from the newly created Division of Environmental Affairs discussed in some detail the functions of this new division. Briefly, the Division is concerned with environmental impact statements as related to various Commission activities.

At this point the Committee recessed for the day. The sessions on September 9 will be held at the AEC "H" Street Office.

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The Committee reconvened at 8:30 A.M. at the "H" Street Office. The Minutes of the previous meeting were approved.

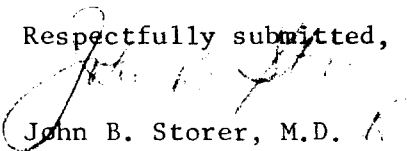
There was a discussion of the site of the next meeting and it appears that the Puerto Rico Nuclear Center should be the first choice, with Idaho Falls as the alternative. Neither of these sites has been visited for some years. Dr. Totter discussed in some detail some of the problems that the Division has encountered at the Puerto Rico Nuclear Center.

The Committee then discussed its meeting of the day before with the Commissioners. It was agreed that three basic requests to the Committee had been made. The first of these was concerned with the environmental impact statement concerning the Indian Point Reactor. The second was whether IAEA is the proper agency to accept responsibility for world-wide waste disposal of nuclear waste. The third was concerned with the image of the AEC. This last point seemed to be the main preoccupation of the Commission. It was not clear to the Advisory Committee how it could be of particular help in this regard. It was pointed out in this regard that the Commission does not know what its image is and before worrying too much about how to improve it perhaps it would be useful to have some professionally trained people determine the public image of the Commission. With respect to improving the image if it is indeed bad, the Committee was of the opinion that this was the wrong group to do very much about it. The Committee, after all, consists of biomedical scientists who are not trained in opinion-shaping.

Dr. Totter reported the series of events leading to his submitting his resignation as Director of the Division and its subsequent acceptance. This news came as a complete surprise to at least some members of the Committee, since even the Chairman, Dr. Moseley, had not been officially informed of the resignation until the day before. The Committee was dismayed that it had not been informed of Dr. Totter's resignation and the selection of a new Division Director. It apparently had been Commission policy to hold this information internally. Dr. Moseley reported that he had been in telephone contact with Dr. Haagen-Smit who was unable to attend the meeting and had reported this turn of events to Dr. Haagen-Smit. The latter's reaction perhaps best summarizes the position of the Committee in this matter. Dr. Haagen-Smit felt that the Commission had missed an opportunity to conduct a portion of its affairs openly and with the knowledge of at least a small segment of the lay scientific public as represented by the Advisory Committee. This is particularly unfortunate in view of the Commission's stated goal to conduct its affairs with greater public knowledge and greater openness.

The meeting adjourned at 11:45 A.M.

Respectfully submitted,

  
John B. Storer, M.D.  
Scientific Secretary, Advisory Committee  
for Biology and Medicine

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