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ATOMIC ENERGY COMMISSION

MEETING NO. 1163

2:15 p.m., Wednesday, January 11, 1956

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Present

Lewis L. Strauss
Thomas E. Murray
W. F. Libby
Harold S. Vance

K. E. Fields
R. W. Cook
Edwin E. Ferguson

W. B. McCool
William L. Oakley

Also Present

Harry S. Traynor
A. Tammaro
David F. Shaw
Paul F. Foster
Brig. Gen. Alfred D. Starbird
George J. Keto
Col. Carey L. O'Bryan, Jr.
Col. Jack L. Armstrong
Capt. John W. Gannon
Lt. Col. Raymond I. Schnittke
John A. Hall
Max Isenbergh
John A. Derry
Dr. Charles L. Dunham
Robert L. Corsbie
Charles H. Reichardt
Harold L. Price
Frank K. Pittman
Charles G. Manly

Charles L. Marshall
E. J. Bloch
W. Kenneth Davis
Col. Elbert O. Meals
Capt. Gerard F. Helfrich
C. D. W. Thornton
T. R. Jones
Shelby Thompson
Rodney L. Southwick
A. A. Wells
Robert Lowenstein
William H. Berman
William Gervine
Manuel Dupkin II
Comdr. John W. Crawford
Richard J. Hallinan
George G. Manov
Paul C. Fine
James E. Ammons

REPOSITORY NARA/College Park
COLLECTION AEC Minutes (NNS-326-92-006)
BOX No. 9 (Vols 17-18)
FOLDER AEC Mtg No ~~1163~~
7160-1186
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1. Executive Session*

- a. Letter from the Chairman, JCAE, Concerning Operation REDWING
- b. One-Point Detonation Tests
- c. Letter to the Joint Committee on By-Product Materials Regulation
- d. Emergency Relocation Exercise
- e. Approval of Minutes
- f. ICBM Program

2. Attendance of U.S.S.R. Scientists at U.S. Conference

Mr. Strauss referred to a memorandum from Mr. Hall concerning the proposal to invite Russian scientists to attend a U.S. Conference on Scintillation Physics.** He observed that the other Commissioners had had no objection to the invitation; however, he said that since AEC was one of the sponsors of the conference he did not believe such an invitation would be desirable.

Mr. Libby said he believed AEC should state that it had no objection to invitations of this type, but it should not request favorable consideration of them by the State Department since this might set scientists apart from other groups on the question of exchange visits. He said he believed that Mr. Strauss would be responsible for advising the Administration on this question in his capacity as Special Assistant to the President.

*Separate minutes for this part of the meeting have been circulated.

**A copy of this memorandum, dated December 6, 1955, is on file in the Office of the Secretary.

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After further discussion, Mr. Strauss suggested, and the other Commissioners agreed, that the question should be presented to the Operations Coordinating Board.

3. Items of Information

a. Test Director for Operation REDWING

Mr. Fields said it appeared that because of his health, Mr. Graves would not be able to assume the duties of the Scientific Director of Operation REDWING. He added that Mr. Ogle would be the Acting Scientific Director for the time being.

b. Norris Amendments to Community Disposal Act

Mr. Fields reported that he had received a letter from Mr. Norris, Acting Executive Director of the JCAE, forwarding proposed amendments to the Community Disposal Act. He said these amendments would be circulated to the Commission prior to the JCAE Subcommittee hearing at which AEC staff would testify during the following week.

c. Award to Dr. Dodson

Mr. Fields said he would circulate a proposed press release concerning the award of a certificate of appreciation to Dr. Dodson.

d. Explosion at Oak Ridge

Mr. Fields reported on the explosion of a pressure vessel at Oak Ridge and said that there had been no loss in production. Mr. Libby asked that the cause of the accident be determined.

e. Document Room in "H" Street Building

Mr. Fields reported that a room for public inspection of licensing documents would be opened on January 16

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in the "H" Street Building. In response to a suggestion by Mr. Strauss, Mr. Fields said he would consider the desirability of displaying in this room original correspondence concerning the establishment of the atomic energy program.

f. Battelle Memorial Institute

Mr. Fields discussed the developments leading to the request for an additional 5 kilograms of special nuclear material for use in fabricating fuel elements for the Battelle Memorial Institute research reactor. Mr. Libby asked that it be determined whether the additional material was actually needed for the fabrication of the fuel elements.

After further discussion, the Commission:

Noted that the General Manager will authorize the allocation of an additional 5 kilograms of special nuclear material to Battelle Memorial Institute for use as fuel in a research reactor.

g. Access Program Regulation (See minutes of Meeting 1154)

Mr. Fields referred to the request at Meeting 1159 that publication of the Access Program Regulations be deferred for a short time in order to permit reconsideration of the patent provisions of these regulations. The Commissioners had indicated the desirability of considering other provisions which might avoid criticism that companies already in the atomic energy program would establish a preferred position through patent rights available under the regulations. He indicated that he understood that the Commissioners now had no further reservations about implementation of the earlier decision on access program regulations.

h. Visit to the U.K. by Mr. Roddis and other AEC Personnel (See AEC 852/65)

Mr. Fields said that in connection with the present visit to the U.K. by Mr. Roddis and other scientific personnel, the U.K. had requested an exchange of technical information on certain fast breeder reactors. He added that the Division of Reactor Development recommended the exchange of this information under Article 2(a)(2) of the U.S.-U.K. bilateral agreement. Mr. Libby expressed concern that the U.S. might be providing the U.K. more information than the U.S. would receive; however, he said that if the U.S. would receive valuable technical information, he would have no objection.

Mr. Murray said that he would like to have more information on this subject.

After further discussion, this matter was deferred until Mr. Davis entered the meeting.

i. Discussion of Cinerama

Mr. Fields said that he would meet with Mr. LeBaron later in the week to discuss the preliminary work on the Cinerama motion picture on the Atoms-for-Peace Program.

At this point, Mr. Murray briefly left the meeting.

4. AEC 685/2 - Weaponization Program

The Commissioners briefly discussed AEC 685/2 which had previously been considered at Meetings 1160 and 1161. Mr. Libby said that he had discussed the paper with Mr. von Neumann, and Mr. von Neumann believed that the recommendations of the paper should be accepted.

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Mr. Libby said that he would approve the recommendations of this paper. However, he added that he believed there would be many new opportunities which should not be overlooked in the weapons field and in other programs for introducing new companies and for providing competition.

After further discussion, the Commission, with Commissioners Strauss, Libby, and Vance voting in the affirmative, and Commissioner Murray voting in the negative:

a. Authorized the General Manager to undertake negotiations with UCRL and with Western Electric Company with the intent of establishing contractor responsibilities corresponding to those indicated in the pattern described in paragraph 6 of AEC 685/2; and

b. Noted that, if this solution cannot be agreed by the parties concerned or if negotiations reveal disadvantages that would make further considerations of the solution undesirable, the General Manager will report again to the Commission.

5. AEC 787/10 - Pacific Proving Ground Activities for CY 1956

Mr. Fields briefly reviewed the program for Operation REDWING and observed that this operation would be much larger than Operation CASTLE.

General Starbird discussed some of the specific shots of the operation and the reasons for including the additional shots which were not covered in the earlier proposals for Operation REDWING. (See AEC 787/3)

After discussion, the Commission:

a. Approved the specific test program for Operation REDWING as given in Appendix "A" to AEC 787/10;

b. Approved the expenditure of nuclear materials up to the amounts listed in Appendix "B" to AEC 787/10;

c. Noted that the support of the Department of Defense will be requested for the expanded REDWING program by letter such as that in Appendix "C" to AEC 787/10;

d. Noted that after receipt of DOD comments, Presidential authorization for expenditure of the nuclear materials required for the tests will be requested by letter such as that in Appendix "D" to AEC 787/10;

e. Noted that the Secretary of State will be advised by letter such as that in Appendix "E" to AEC 787/10 of the AEC request for Presidential authorization to expend the required special nuclear materials; and

f. Noted that subsequent to receipt of the Presidential authorization referred to in d above, the Joint Committee on Atomic Energy will be advised by appropriate letter of the specific REDWING program.

6. AEC 663/3 - U.S./U.K. Exchange of Information in Connection with Tests

General Starbird commented on the recommendation that the Commission determine that certain U.S. analyses which the DOD would like to transmit to the U.K, concerning U.K. weapons tests would not reveal important information relating to the design and fabrication of atomic weapons and could be transmitted to the U.K. under the DOD's bilateral agreement with the U.K. Mr. Strauss inquired whether the exchange of filter papers for analysis would be reciprocal. He said that if it were, he believed the DOD should be informed that the Commission would not agree to any exchange of analyses or filter papers for the test of thermonuclear weapons by the U.S. In answer to a question by Mr. Libby, General Starbird said that it would be possible for the Commission to accept the recommendation of AEC 663/3 and refuse any later DOD request for reciprocal exchanges. Mr. Murray observed that it would not be necessary for the Commission to take this position at this time since it would later review information to be transmitted and

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could determine at that time whether to permit this information to be exchanged.

Mr. Marshall then commented on the issues involved in the exchange of information on fission product ratios. The Commission suggested that the General Manager determine whether complete information on these ratios should be exchanged.

After further discussion, the Commission:

a. Determined that the exchange of information with the United Kingdom as proposed in the DOD letter of November 21, 1955, (AEC 663/1) and discussed in paragraph 2 of AEC 663/3 relates to yields and effects, and will not reveal important information concerning the design or fabrication of the nuclear components of an atomic weapon;

b. Noted that in considering the fission product analyses as transmissible, "yields and effects" is being interpreted broadly since the information concerns British weapons and therefore cannot "reveal" important information to them;

c. Noted that an exchange of information on tests is provided for in the U.S./U.K. bilateral agreement (AEC 781/6);

d. Noted that the Assistant to the Secretary of Defense (Atomic Energy) will be notified of the above action by a letter such as the Appendix to AEC 663/3;

e. Noted that the Joint Committee will be informed of the above determination after coordination with the DOD.

7. AEC 508/16 - Draft Additional Power Agreement with OVEC for the Supply of 150 MW Additional Power to Portsmouth

Mr. Fields, Mr. Cook and Mr. Bloch reviewed at length the proposed additional agreement with OVEC for the purchase of excess

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power. Mr. Cook also discussed the request by the Board of Directors of OVEC that the Comptroller General and the AEC General Counsel consider the original contract and state whether AEC has the legal right to enter into such a contract. Mr. Bloch and Mr. Cook then discussed several questions raised by Mr. Murray on these matters. In answer to a question by Mr. Murray, Mr. Bloch said that OVEC would not be able to dispose of this excess power on a firm basis since it would be obligated to AEC. Mr. Cook observed that AEC would, after this additional agreement had been concluded, have a contract for the full production of the plant.

Mr. Murray said he believed the contract should be reviewed by the Commission after receipt of the Comptroller General's opinion. Mr. Strauss observed that the General Manager might not be able to submit the contract for Commission action without losing the right to contract for this power. Mr. Bloch said that AEC would lose this right about the middle of February. Mr. Murray said that after an outside group had looked at the contract and made suggestions concerning it, he would like to review it.

After further discussion, the Commission:

a. Authorized the General Manager to approve execution of the proposed Additional Power Agreement attached as Appendix "C" to AEC 508/15 subject to review of this agreement by the Commission following receipt of the opinions referred to in d below;

b. Noted that the FPC has advised that the rates, terms, and conditions appear to be fair and reasonable to the government;

c. Noted that the Comptroller General's opinion will be requested as indicated in paragraph 1 of AEC 508/16;

d. Noted that after receipt of the Comptroller General's opinion and the submission of an opinion by the AEC General Counsel, and assuming that the Comptroller General's opinion will be favorable, the

proposed Additional Power Agreement will be executed after review by the Commission in accordance with a above;

e. Noted that after execution, the Agreement will be submitted to the Joint Committee on Atomic Energy in accordance with the requirements of Section 164 of the Atomic Energy Act of 1954;

f. Noted that the Joint Committee on Atomic Energy will be advised of this action by letter such as Appendix "B" to AEC 508/16;

g. Noted that henceforth AEC 508/16 will be unclassified.

8. AEC 467/15 - Succession of Command in Event of Disaster

Mr. Fields briefly reviewed the recommended succession of command in event of disaster.

The Commission:

a. Approved the Succession of Command as proposed in paragraphs 2 and 3 of AEC 467/15;

b. Noted that all Managers of Operations will be advised of this action by memorandum such as Appendix "A" to AEC 467/15;

c. Noted that the Joint Committee on Atomic Energy and the Military Liaison Committee will be advised of this action by letters such as Appendices "B" and "C" to AEC 467/15, respectively;

d. Noted that the order of positions established hereunder as the Succession of Command will be reviewed at such times as the General Manager may



consider appropriate, that the recommended changes therein will be brought to the Commission for action, and that each Manager of Operations will be advised of any revisions that result;

e. Noted that henceforth AEC 467/15 will be considered unclassified.

9. AEC 17/105 - ANP High Temperature Reactor Program

Mr. Davis reviewed the reasons for proposing a program of research and limited development on a high temperature reactor for nuclear ramjet propulsion. He also reviewed the recommendation that a major portion of this work be assigned to Curtiss-Wright Company and pointed out that the Company would provide facilities at their own expense. He added that the construction of these facilities did not require commitments from AEC and that consideration was being given to the assignment of some of the work to the North American Aviation Company.

During the discussion, Mr. Libby observed that the discovery of silicon carbide indicated the necessity for an aggressive materials research program in reactor development since similar discoveries would provide similar opportunities for such developments.

Mr. Murray referred to the letter from the Deputy Assistant Secretary of Defense stating that "no major expenditure should be made unless there is good evidence of a probable great advance." (See Appendix "B" to AEC 17/105) He suggested that this matter be reconsidered by the Commission before any major expenditures are made. Mr. Davis pointed out that \$4,000,000 would not be a major expenditure within Mr. McCauley's usage of the phrase. He observed that \$4,000,000 could more appropriately be considered an extension of present research which was budgeted at \$900,000.

Mr. Fields said that subsequent to preparation of the paper, a press release had been considered; however, no recommendation had been made for a press release. The Commissioners briefly discussed this problem and deferred consideration of a press release until a later date.

The Commission:

- a. Approved initiation of a program of research and limited development, with particular emphasis on materials development, for a high temperature reactor for a nuclear ram-jet propulsion system;
- b. Approved assignment of a major portion of the initial research and development task to the Curtiss-Wright Corporation, subject to the satisfactory negotiation of contract terms;
- c. Noted that further study will be given to the capabilities of other organizations, in particular North American Aviation, to determine the nature and magnitude of suitable programs for them in the nuclear ram-jet effort;
- d. Noted that approximately \$900,000 of FY 1956 AEC funds will be assigned to the nuclear ram-jet program;
- e. Noted that funds (\$4,000,000) for this reactor program are included in the Commission FY 1957 budget as submitted to the Bureau of the Budget; however, actual commitment of this amount of funds is subject to further staff review during the next several months;
- f. Noted that Government-financed construction is not contemplated for this project during FY 1956-1957. Prior to the end of FY 1957 an evaluation will be made to determine which contractor, if any, will be selected for a major development program, and no commitments involving major facilities will be made prior to that time;
- g. Noted that the Secretary of Defense will be notified of this action by a letter, such as Appendix "F" to AEC 17/105; a copy of this letter will be provided the Military Liaison Committee; and

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h. Noted that the JCAE and GAC will be advised of this action by a letter such as that in Appendix "G" to AEC 17/105.

10. Visit to the U.K. by Mr. Roddis and other AEC Personnel
(See Item 3h above)

Mr. Fields and Mr. Davis briefly commented on fast breeder reactor information which would be discussed with the U.K. within the terms of the bilateral agreement with the U.K. Mr. Fields said that additional information concerning the forthcoming discussions with the U.K. would be provided the Commission before he requested further consideration of the matter later in the week. (See AEC 852/71 and AEC 862/76, subsequently circulated.)

11. Assignment of the Guided Missile Cruiser

Mr. Fields referred to the Commission's approval of AEC 47/12 - "Nuclear Propulsion Plants for Submarine and Surface Ship Application" at Meeting 1159 on December 21. He observed that the Commission also had requested recommendations on the question of assigning the guided missile cruiser project to Westinghouse. He then said that a letter had been received from the DOD reiterating the importance of the guided missile cruiser project, that he had discussed with members of the staff the assignment of this project and that he now recommended that the guided missile cruiser project be assigned to Westinghouse.

Mr. Davis stated that in view of the urgency on the guided missile cruiser, he no longer maintained his earlier reservations about this assignment to Westinghouse. However, he expressed concern over having so many development projects at one company, thus precluding competition in this type of development.

The Commissioners expressed agreement with Mr. Davis about the lack of competition in the naval propulsion program. Mr. Fields said he planned to review all AEC programs for the Navy with a view towards making recommendations on means of bringing more companies into these programs.

After further discussion, the Commission:

a. Approved the undertaking by Westinghouse, at Bettis, of the research and development necessary for the propulsion plant required for the guided missile cruiser, Project CIX;

b. Noted that the MLC, the JCAE, and the GAC will be advised of this action by letters such as those in Appendices "D" and "E", respectively, to AEC 47/12.

12. AEC 731/2 - Stable Isotope Distribution

The Commission considered the question whether the quantities of stable isotopes of lithium, deuterium and boron which could be distributed under the proposed policy would be large enough to be useful in a weapons program. Mr. Jones said quotas would be established to prevent the accumulation of weapons quantities of militarily useful isotopes.

After further discussion, the Commission:

a. Determined that a program for the domestic and foreign distribution of unclassified stable isotopes and rare earth elements is in the interest of national security;

b. Approved the establishment of such a program to be conducted within the general criteria listed in paragraph 7 to AEC 731/2;

c. Noted that the JCAE will be notified of this action by letter such as Appendix "C" to AEC 731/2;

d. Noted that the public will be informed of this action by a press release such as Appendix "D" to AEC 731/2;

e. Noted that the Department of State will be informed of this action by letter such as Appendix "E" to AEC 731/2;

f. Noted that the effective date of this procedure will coincide with the effective date of the regulation "Licensing of Byproduct Material;"

g. Noted that henceforth AEC 731/2 will be unclassified.

13. AEC 720/23 - Guaranteed Fair Prices to be Paid Licensees for Production of Special Nuclear Material

Mr. Price said that the present recommendation did not change the previously established prices to be paid licensees for production of special nuclear material. However, it provided for publication in the Federal Register of a notice that the guaranteed prices had been established and were available to cleared groups. He added that it would also establish specifications for the purchase of materials.

After discussion, the Commission:

a. Approved the revised price schedule set forth in Appendix "B" to AEC 720/23;

b. Noted that the JCAE, GAC, and MLC will be notified of this action by letter similar to Appendix "C" to AEC 720/23; and

c. Noted that an unclassified public notice similar to Appendix "D" to AEC 720/23 will be sent to the Federal Register for publication.

14. AEC 23/35 - Rules of Practice

Mr. Ferguson reviewed the changes in the proposed regulation establishing Rules of Practice since they had been approved at Meeting #107 on July 21, 1955, by the Commission for publication for comment.

After discussion, the Commission:

a. Approved publication of the proposed Rules of Practice substantially in the form annexed as Appendix "A" to AEC 23/35;

b. Noted that the regulation will be issued to be effective upon publication;

c. Noted that a letter such as Appendix "B" to AEC 23/35, as revised, will be sent to the Joint Committee on Atomic Energy;

d. Noted that an appropriate public announcement will be issued; and

e. Noted that henceforth AEC 23/35 will be unclassified.

15. AEC 478/4 - Establishment of Policy for Traveling Exhibits

Mr. Thompson commented on the recommended policy for Atoms-for-Peace exhibits for use in the U.S. In response to a question by Mr. Murray, Mr. Thompson briefly reviewed the AEC policy on admission charges.

Mr. Strauss expressed concern about possible claims against the AEC in case of accidents involving the exhibits and requested consideration of a requirement that the exhibitor have liability insurance covering persons attending the exhibit.

After further discussion, the Commission:

a. Approved a policy of supplying traveling public information exhibits financed by AEC funds to qualified exhibitors free of transportation costs and rental charges;

b. Noted that the cost of the projected traveling exhibits programs on Atoms for Peace and civilian application (described in paragraph 6 of Appendix "A" to

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AEC 478/4), for touring on a free basis, will be approximately \$511,000 in FY 1956 and the same amount has been included in the FY 1957 budget estimates. However, the extent of expenditures and the scope of the program in FY 1956 will depend upon the availability of funds, in addition to the amounts presently budgeted, after the mid-year review;

c. Noted that the Joint Committee on Atomic Energy will be notified of this action by appropriate letter similar to Appendix "D" to AEC 478/4;

d. Noted that a public statement, such as Appendix "E" of AEC 478/4, will be issued announcing the availability of traveling exhibits under the new policy; and

e. Noted that henceforth AEC 478/4 will be unclassified.

16. AEC 741/7 - Indian Request for Heavy Water

Mr. Hall reviewed the recommendation that eleven tons of heavy water be sold to India in addition to the 10 tons previously authorized.

After discussion, the Commission:

a. Determined that the sale of an additional 11 short tons of heavy water to India for use in an NRX-type reactor is in the interest of the national security;

b. Approved the sale of 11 short tons of heavy water to India;

c. Noted that a price of \$28.00 per pound, f.o.b. plant site, will be charged for the material;

d. Noted that the contract covering the sale of this quantity, and the 10 tons of heavy water approved earlier, will provide that the material will be used in the Indian

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research reactor program and that the material will not be transferred beyond the jurisdiction of the Government of India;

e. Noted that Dr. Bhabha will be notified of this action by letter such as Appendix "C" to AEC 741/7;

f. Noted that the JCAE will be notified of this action by letter such as Appendix "D" to AEC 741/7;

g. Noted that the AEC and Department of State will coordinate with the Indian and Canadian Embassies in the issuance of press release such as Appendix "E" to AEC 741/7.

During the above discussion, Mr. Murray briefly left the meeting.

17. AEC 751/42 - Position on International Atomic Energy Agency

Mr. Strauss suggested that the other Commissioners agreed that AEC 751/42 be deferred until a later meeting. Mr. Murray said that he believed the Commission needed to consider recommendations on the general policy problems involved in assistance to foreign power reactor programs, and he did not believe the present paper considered this problem thoroughly enough.

18. Draft Release on Operation REDWING (Continued) (See Item 1 of the Executive Session Minutes of this Meeting)

Mr. Strauss read a draft statement which he had referred to earlier in the meeting and which elaborated on the press release on Operation REDWING. The Commissioners discussed and agreed upon revisions to the statement.

W. B. McCool

Secretary

Approved by the Commission: Meeting 1207, June 12, 1956