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Minutes

Tenth Meeting - 17 May 1955

Technical Advisory Panel on Atomic Energy

Agenda Items:

1. The minutes of the eighth meeting were approved as corrected. The minutes of the ninth meeting were approved as issued.

2. The next meeting was tentatively scheduled for 30 June 1955, in Washington, D. C. Members were requested to hold this date open pending confirmation.

3. The Aircraft Nuclear Propulsion program, at the Air Force facility operated by Convair, was discussed by Convair representatives. Steps are being taken to implement the Panel recommendation that other contractors participate actively in the work, and to bring the work into phase with the rest of the ANP program.

   In addition to the previously mentioned experimental verification of air and structural scatter of radiation, Convair believes flying a radiation source reactor would, (a) provide valuable information on ground handling and maintenance of a "hot" aircraft, on remotely operated reactor loading procedures, and on emergency crash procedures and, (b) supplement the flight experience with the first prototype aircraft, which is expected to be very limited by the proposed compressed schedule.

   As a result of the actions initiated by the Air Force and Convair, and the additional information received, recommendation to the Chairmen, Coordinating Committees on Atomic Energy and on Piloted Aircraft were evolved, PAE 201/3, subject, "Aircraft Nuclear Propulsion", dated 8 June 1955 supplementing those of 14 April 1955, PAE 201/2 Final, Log 55-826, subject, "Aircraft Nuclear Propulsion".

   These supplementary recommendations proposed approval of the program to fly a radiation test reactor, and the expansion of the active participation program to include representatives of several other industries.

4. The Panel endorsed the report of the study group headed by Professor Hansen, PAE 209/2, dated 10 May 1955, subject, "Recom-

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mendations on Shock Simulation", as expressing Panel opinion on the simulation of air shock against surface targets, and forwarded it with the Panel recommendation (PAE 209/3, dated 8 June 1955, subject, "Shock Simulation"), to the Chairman, Coordinating Committee on Atomic Energy. Since the scope selected for the study is more restricted than the request made to the Panel, the letter of transmittal to the Chairman, Coordinating Committee on Atomic Energy, will ask if additional advice is needed.

5. Information received during the visit to the Knolls Atomic Power Laboratory on 16 May 1955, convinced the Panel that the SIR and S&R submarine reactor research and development programs were progressing satisfactorily at the proper level of effort, Encouragement was given to an early study of the applicability of a boiling water reactor to the propulsion of marine craft. The Panel recommendation (PAE 112/12, dated 8 June 1955, "Submarine Nuclear Propulsion") was forwarded to the Chairman, Coordinating Committee on Atomic Energy.

6. The Panel noted the letter from the Assistant Secretary of Defense (Research and Development) to the Chairman, Atomic Energy Commission, on the vulnerability of atomic weapons and stands ready to monitor the Joint DOD-AEC study as requested. As the first step, the Panel will cooperate with AFSWP to review the program AFSWP has coordinated between the three Services.

7. Preliminary comments on the atomic energy research and development FY 1956 Planned Obligations (PAE 106/1, dated 8 June 1955, to Chairman, Coordinating Committee on Atomic Energy, subject "FY 1956 Planned Obligations") were based in part on FY 1956 budget proposals. The staff was requested to supply additional information on all weapon programs which, (a) total 1/2 mb or more, (b) request more funds than in FY 1955, or (c) are increasing in importance. The indicated effort on nuclear propulsion is at about the level the Panel considers appropriate.

The Panel recognizes the Army's need for a size of atomic artillery shell which avoids the major difficulties of the 280-mm, and would like advice as to which size of the several listed in the budget the Army thinks would be most likely to fulfill this need.

8. Preliminary results of UNCLE were discussed by Mr. Jackson, Executive Secretary, CCAE, who had just returned from witnessing the test. While it is too early to know in detail what results

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were obtained, two things seemed apparent: (a) free field pressures at various distances from the blast were about as predicted, and (b) due to a combination of rough weather and an unfortunate selection of inadequate mooring lines, so much equipment and instrumentation was lost prior to the test to cause serious doubt as to whether the main purpose of the test had been accomplished, namely, the establishment of correlation between free field shock data and actual damage to submarine hulls.

9. A summary of the preliminary results of TEAPOT were presented by the staff in the form of a brief table. More complete and official information probably will be obtained when the Panel visits the western facilities of the Atomic Energy Commission.

10. The Panel tour of the western facilities of the Atomic Energy Commission will be planned to coincide to the extent possible with a similar visit planned by the Weapon Subcommittee of the GAC. The week of 20 June will be tentatively explored, and the MLC and CCME will also be contacted.

Other Business:

1. The Chairman briefly reviewed the high points of the Panel Chairmen's meeting held 31 March 1955. The staff was requested to send to the members copies of the papers pertinent to this meeting.

2. The staff will hand-carry to the members for information and comment, copies of the TOP SECRET, AEC "Proposed 1956 Research and Development programs at LASL and Sandia".

3. The staff will send to the members an abstract of a SECRET report, "A Study of the Lethal Effectiveness of Nuclear Weapons against Intercontinental Ballistic Missiles".

Members Present:

Mr. H. A. Winne, Chairman
Dr. W. A. MacNair
Dr. John von Neumann

Members Absent:

Dr. E. V. Murphree

Submitted for the approval of the Panel:

Craig Starks

J. CRAIG STARKS
Secretary

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