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December 5, 1956

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ATOMIC ENERGY COMMISSION

HIGH ALTITUDE TEST

Note by the Secretary

The attached letter to the Chairman, Military Liaison Committee, is circulated for the information of the Commission by request of the General Manager.

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BOX No. 221 (NN 3-326-93-010)
FOLDER R+D 9 Long Range Detection Program

W. B. McCOOL
Secretary

DEPARTMENT OF ENERGY DECLASSIFICATION REVIEW	
1ST REVIEW DATE: <u>03/05/82</u>	2. DETERMINATION (CIRCLE NUMBER(S))
AUTHORITY: <u>EMDC 5000 DATED</u>	1. CLASSIFICATION: <u>RETAINED</u>
NAME: <u>William H. ...</u>	2. CLASSIFICATION CHANGED TO:
2ND REVIEW DATE: <u>08/02</u>	3. CONTAINS NO DOE CLASSIFIED INFO
AUTHORITY: <u>AD</u>	4. COORDINATE WITH:
NAME: <u>...</u>	5. CLASSIFICATION CANCELLED
	6. CLASSIFIED INFO BRACKETED
	7. OTHER (SPECIFY): <u>PP 353-355</u>

DEPARTMENT OF ENERGY DECLASSIFICATION REVIEW	
WITH ATTACHMENTS/ENCL	
SINGLE REVIEW AUTHORIZED BY: <u>DOE ORDER 5650.2B</u>	2. DETERMINATION (CIRCLE NUMBER(S))
REVIEWER (ADD):	1. CLASSIFICATION: <u>RETAINED</u>
NAME: <u>C. R. Kuehn</u>	2. CLASSIFICATION CHANGED TO:
DATE: <u>7-19-95</u>	3. CONTAINS NO DOE CLASSIFIED INFO
	4. COORDINATE WITH:
	5. CLASSIFICATION CANCELLED
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	7. OTHER (SPECIFY):

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

November 26, 1956

Honorable Herbert B. Loper
Chairman, Military Liaison Committee

Dear General Loper:

As you will recall, the Atomic Energy Commission gave serious consideration to the inclusion of a very high altitude test shot in Operation REDWING. However, because of the complexity of the operation and the short time available to implement the test, it was decided to defer any high altitude shot. Sandia Corporation was directed to study the problems associated with high altitude tests with a view to formulating a program. We understand that the Armed Forces Special Weapons Project is presently formulating their FY 1958 budget for weapons tests and will need to arrive at an early decision on any funds to be included for such a program.

The reasons for our interest in this type of test are, as before, manifold. First, we are interested in determining the possibility of the USSR firing a large yield shot at such an altitude that its detection at great distances from ground zero would be rendered very difficult or impossible. In this connection some information should also be secured on the practicability of conducting nuclear tests at very high altitudes. Secondly, we believe that a high altitude test shot, or series of test shots, would provide data which would be of material assistance in the design of a counter ICBM warhead and in devising for our ICBM and IRBM warheads features which would render them less vulnerable to hostile counter measures. Thirdly, we believe that the phenomena associated with a very high altitude test shot may be quite different from predictions based upon extrapolation of observed phenomena at lesser altitudes. We feel that knowledge in this area should be furthered.

The Sandia Corporation study mentioned above is nearing completion. It was presented in almost final form to representatives of the Services and AFSWP on November 19, 1956. Two shots are being considered by the Staff for Operation HARDTACK, one at

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about 250,000 feet msl and the other at about 100,000 feet msl, with essentially the same general scheme of operation for both. Final decision as to inclusion of these shots and of altitude will be considered by the Commission at a later date.

[REDACTED] At the same time an array of rockets would position suitable instrumentation at appropriate points in space. Other instrumentation would be carried aloft by manned aircraft, and still other instrumentation would be deployed on the ground. The instrumentation involved would provide for the measurement of the neutron spectrum, neutron flux, gamma spectrum, gamma flux, thermal flux, electromagnetic phenomena, peak overpressure, overpressure as a function of time, and photography to provide information on the phenomenology and effects of very high altitude boosts.

[REDACTED]

We believe that these high altitude shots are of interest to both the DOD and AEC and should be undertaken jointly. To this end we propose that the AEC would be responsible for those portions of the experiments which involve the securing of information from rocket-born instrumentation applicable to the measurements indicated above, to include whatever instrumentation development may be necessary. Further, we propose that the DOD assume responsibility for all other instrumentation to include whatever development may be necessary and for delivering the warhead and the rocket-born instrumentation to the desired points in space. Each agency, of course, would be expected to fund for its own responsibilities.

We have commenced our planning on the basis that you will concur in the necessity for the tests and the desirability of conducting them jointly. We are also proceeding on the basis that the division of responsibilities and funding broadly outlined in the preceding paragraph will be satisfactory to you.

In order to include these tests in Operation HARDTACK without resorting to a crash program, a decision should be reached by January 1, 1957 on whether to proceed with preparation for the tests. We would appreciate advice of your concurrence or your comments on this matter.

Sincerely yours,

K. E. Fields
General Manager

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