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AEC 952/19

November 4, 1957

COPY NO. 25

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ATOMIC ENERGY COMMISSION

TEST ACTIVITIES FOR CALENDAR YEAR 1958

Note by the Secretary

The Acting General Manager has requested that the attached report by the Director of Military Application be circulated for consideration by the Commission during the week of November 4, 1957.

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Secretary

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This document consists of 26 pages

Copy No. 25 of 29 Series A

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ATOMIC ENERGY COMMISSION

TEST ACTIVITIES FOR CALENDAR YEAR 1958

Report to the General Manager by the
Director of Military Application

THE PROBLEM

1. To consider the requirements for nuclear tests to be conducted at the Eniwetok Proving Ground during calendar year 1958 (Operation HARDTACK).

SUMMARY

2. At Meeting 1280 on May 1, 1957, the Commission considered AEC 952/5 (Test Activities for Calendar Year 1958) and:

a. Approved, for the purpose of guidance to the weapons laboratories and other agencies involved in the planning for Operation HARDTACK, the general scope of a test program;

b. Noted that the actual test program for Operation HARDTACK would be presented to the Commission for consideration at a later date.

3. On August 2, 1957, the Chairman informed the President by letter (AEC 952/12) of the status of plans for Operation HARDTACK and the general scope of the test program. This letter noted that a series of approximately 25 shots would be initiated about April 1, 1958 and would be completed within four months. It was also noted that a listing of devices to be fired and materials to be expended would be submitted to the President later.

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DEPARTMENT OF ENERGY DECLASSIFICATION REVIEW	
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[REDACTED]

4. On August 9, 1957, the President discussed with the Chairman the subject of the letter of August 2 and, as reported by the Chairman at Meeting 1300 on August 13, 1957:

a. Approved our proceeding now with preparations for Operation HARDTACK with a starting date of April 1, 1958;

b. Directed that the planning firings (approximately 25) be screened to hold to the smallest number practical without losing essential defense objectives;

c. Requested that every effort be made to shorten the length of the test period.

5. On September 15, 1957, the Department of Defense and the Atomic Energy Commission jointly announced preparations for a series of nuclear tests to begin in April, 1958, at the Eniwetok Proving Ground.

6. At Meeting 1308 on October 22, 1957, the laboratory directors briefed the Commission on their plans for tests in Operation HARDTACK, as outlined in AEC 952/16 and AEC 952/18. As a result of the review of the test program at this meeting and subsequent consideration by the laboratories and DMA, the program recommended in this paper was evolved.

7. The recommended test program for Operation HARDTACK is contained in Appendix "B".

[REDACTED] DGE
6/10

In addition to these laboratory devices, the DOD will conduct five tests as part of its weapons effects program. DGE
6/16

[REDACTED]

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[REDACTED] Recommendations concerning a demonstration shot are being circulated to the Commission concurrently as AEC 952/20 for consideration during the week of November 4. DOE
6.1(a)

8. In addition to the shots which we recommend for test at the EPG, we also recommend that certain tests be conducted at the NTS both prior to and subsequent to HARDTACK. [REDACTED]

9. The expected total and fission yields of the test devices in the recommended program, and the expected contribution to world-wide fallout from each shot based on the planned conditions of detonation, are given in Appendix "C". In addition, the corresponding results from CASTLE and REDWING are given for comparison. [REDACTED]

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10. In conjunction with the HARDTACK test program the DOD will conduct an extensive weapons effects program. This program includes the joint AEC/DOD fallout investigation which was established pursuant to the Commission decision on AEC 952/11 at Meeting 1301 on August 22, 1957.

11. As noted in paragraph 4 above, the President approved our proceeding with preparations for starting Operation HARDTACK on April 1, 1958. The joint AEC/DOD public announcement stated that nuclear tests would begin in April, 1958. It now appears that, if the necessary scientific objectives are to be realized in the shortest test period and at least cost, the laboratories should plan on starting their tests on May 1. This is based on a realistic evaluation of the schedule of ready dates for the devices which the laboratories must prepare. On the other hand, the DOD is anxious to conduct its weapons effects shots as scheduled, to start about April 15, in order to avoid the costly consequences of a delay to its programs and participants. If the interests of both groups, the laboratories and DOD, are satisfied (DOD to start its tests on April 15, and the laboratories to start their tests on May 1) it turns out to be especially advantageous to the over-all schedule as a whole since a scheduling conflict at Bikini Atoll between large yield laboratory shots and blast sensitive DOD installations is avoided. Consequently, it is recommended that the starting date for Operation HARDTACK be April 15, with the first laboratory shots scheduled for on or about May 1.

12. A separate Public Information Plan for Operation HARDTACK will be submitted to the Commission for consideration as early as possible.

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13. During the operational phase of past test operations at the Eniwetok Proving Ground in the Pacific the AEC has designated the Commander, Joint Task Force SEVEN, the Senior AEC Representative. It is our intention to so designate the present Commander, Joint Task Force SEVEN, at the appropriate time.

STAFF JUDGMENTS

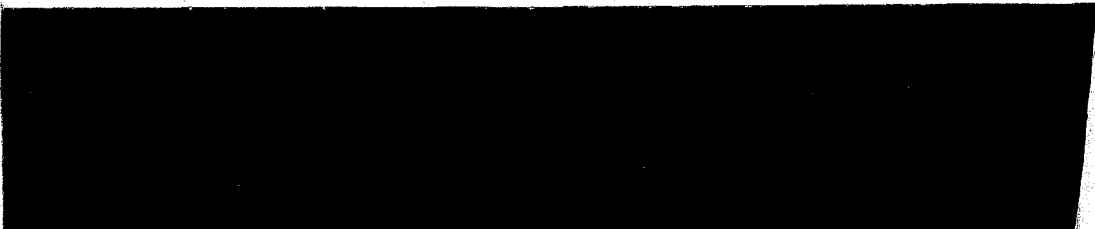
14. The Divisions of Biology and Medicine and Information Services and the Office of the General Counsel concur in the recommendation of this paper.

RECOMMENDATION

15. The General Manager recommends that the Atomic Energy Commission:

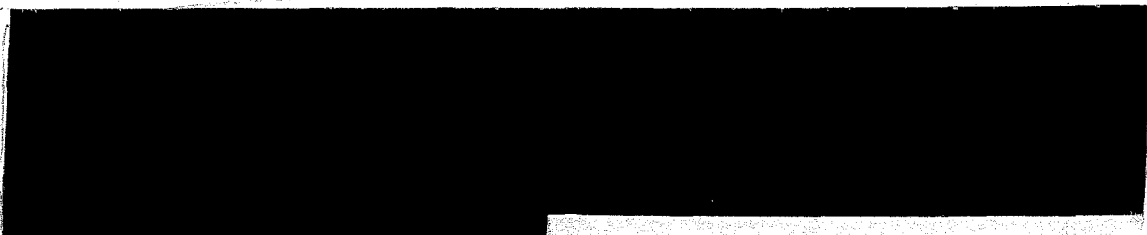
a. Approve conducting Operation HARDTACK, a series of nuclear tests at the Eniwetok Proving Ground, commencing on or about April 15, 1958;

b. Approve the proposed test program in Appendix "B";



DOE
6.1(a)

d. Note that the test program as given in Appendix "B" includes 3 contingent shots; prior to the firing of any of these devices the Commission will be informed of the decision to fire and the reasons for so proceeding;



DOE
6.1(a)

f. Note that the test schedule for Operation HARDTACK will be given to the Commission as soon as it is firm, and that the Commission will be kept informed of changes to the schedule;

g. Note that Department of Defense comments on and support of the test operation will be requested by letter to the Military Liaison Committee such as that in Appendix "D";



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h. Note that the Commander, Joint Task Force SEVEN will be designated the Senior AEC Representative during the operational phase of Operation HARDTACK, as has been done during past test operations at the Eniwetok Proving Ground;

i. Note that Presidential approval of the plans for Operation HARDTACK will be requested by letter such as that in Appendix "E", after receiving the comments of the DOD. This letter also requests authorization to expend the nuclear materials required for the two one-point safety tests at NTS prior to the start of HARDTACK;

j. Note that the requirements for expenditure of nuclear materials for the other HARDTACK tests will be presented to the Commission as soon as possible; and that Presidential authorization for expenditure of the nuclear materials required for the other HARDTACK tests will be requested after Commission approval of the amounts required;

k. Note that the Joint Committee on Atomic Energy will be informed of the test plans by appropriate letter after receiving Presidential approval of the test series;

l. Note that the Federal Civil Defense Administration will be informed of the test plans by appropriate letter after receiving Presidential approval of the test series;

m. Note that a Public Information Plan will be prepared and submitted for Commission approval at the earliest practicable date;

n. Note that the Department of State and the Operations Coordinating Board will be informed of the test plans;

o. Note that the General Advisory Committee will be briefed on the HARDTACK program during their visit to Los Alamos on November 21-23, and their comments on the program will be transmitted to the Commission.

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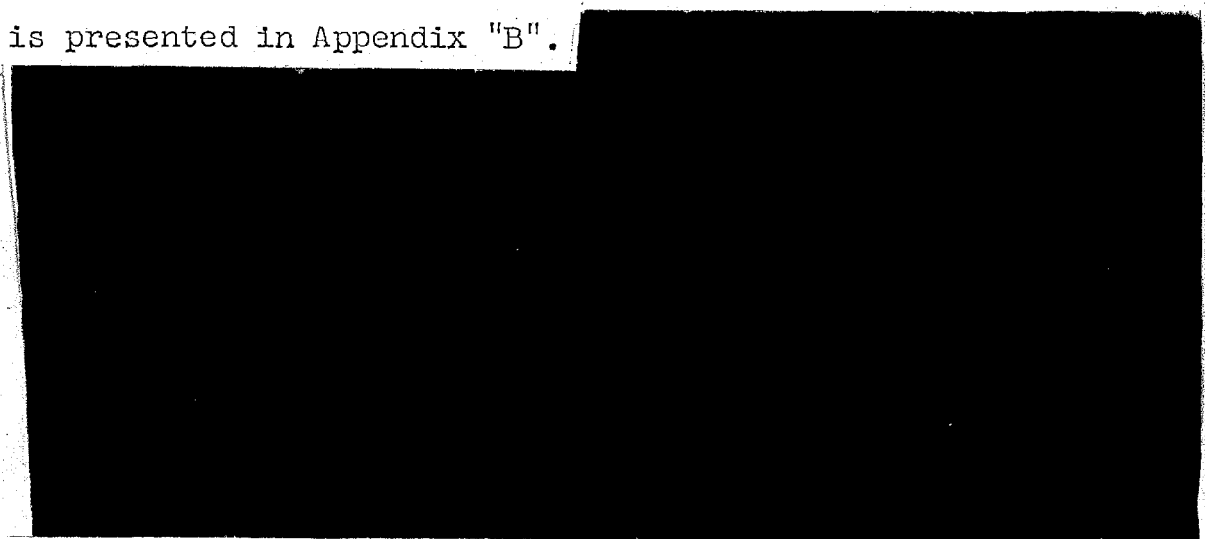
APPENDIX "A"

BACKGROUND AND DISCUSSION

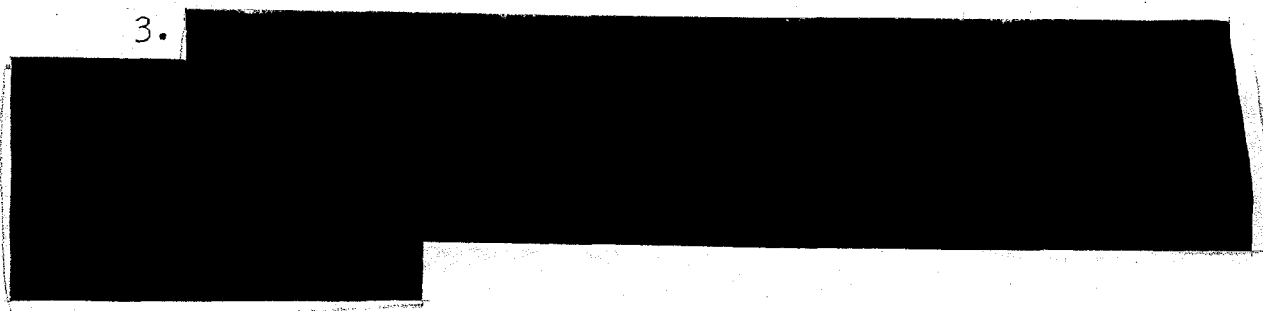
1. The plans for Operation HARDTACK have progressed to the point where a reasonably firm shot program can be presented.

2. The original tentative program of 25 shots (ten for each laboratory and five for the DOD) has been carefully screened as directed by the President. The resulting program is presented in Appendix "B".

*Doc
6.1(a)*



3.



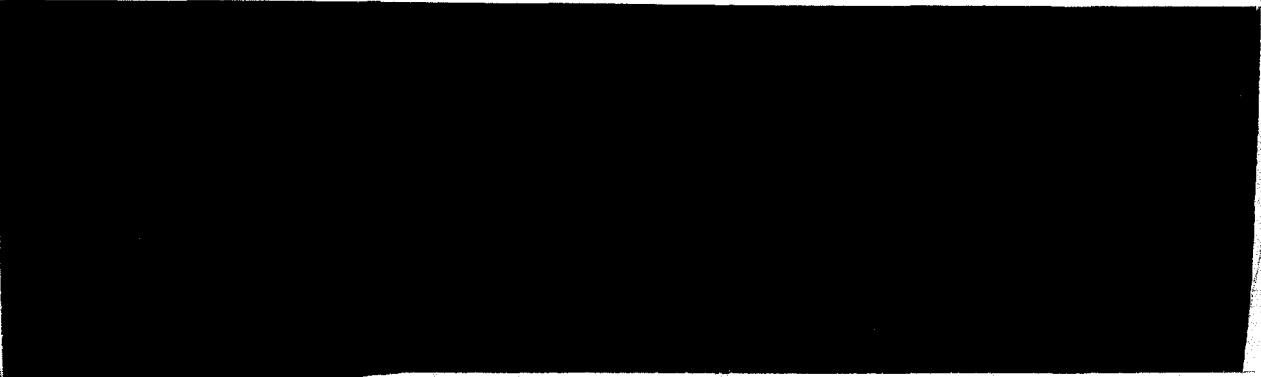
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4.



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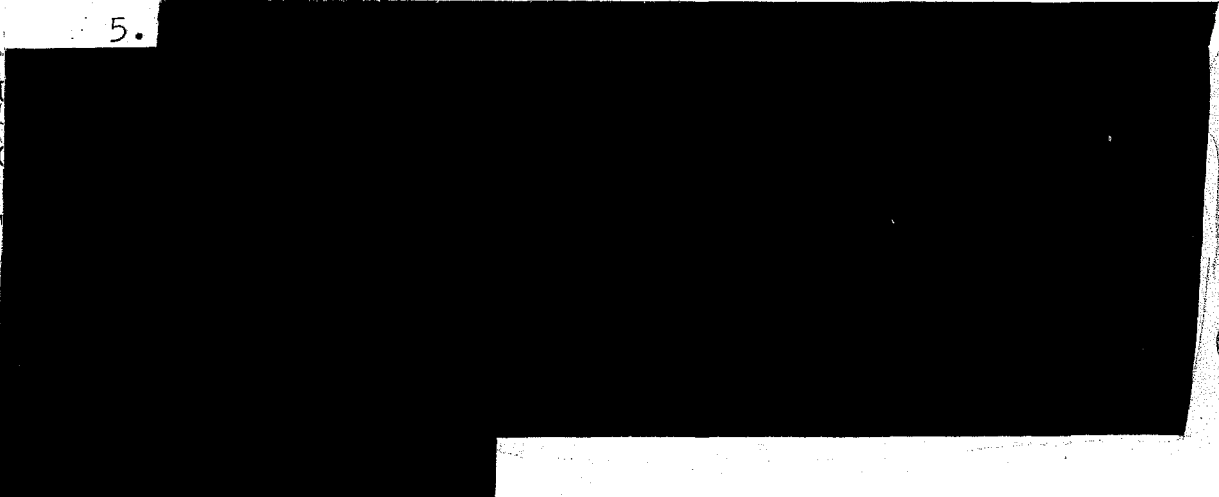




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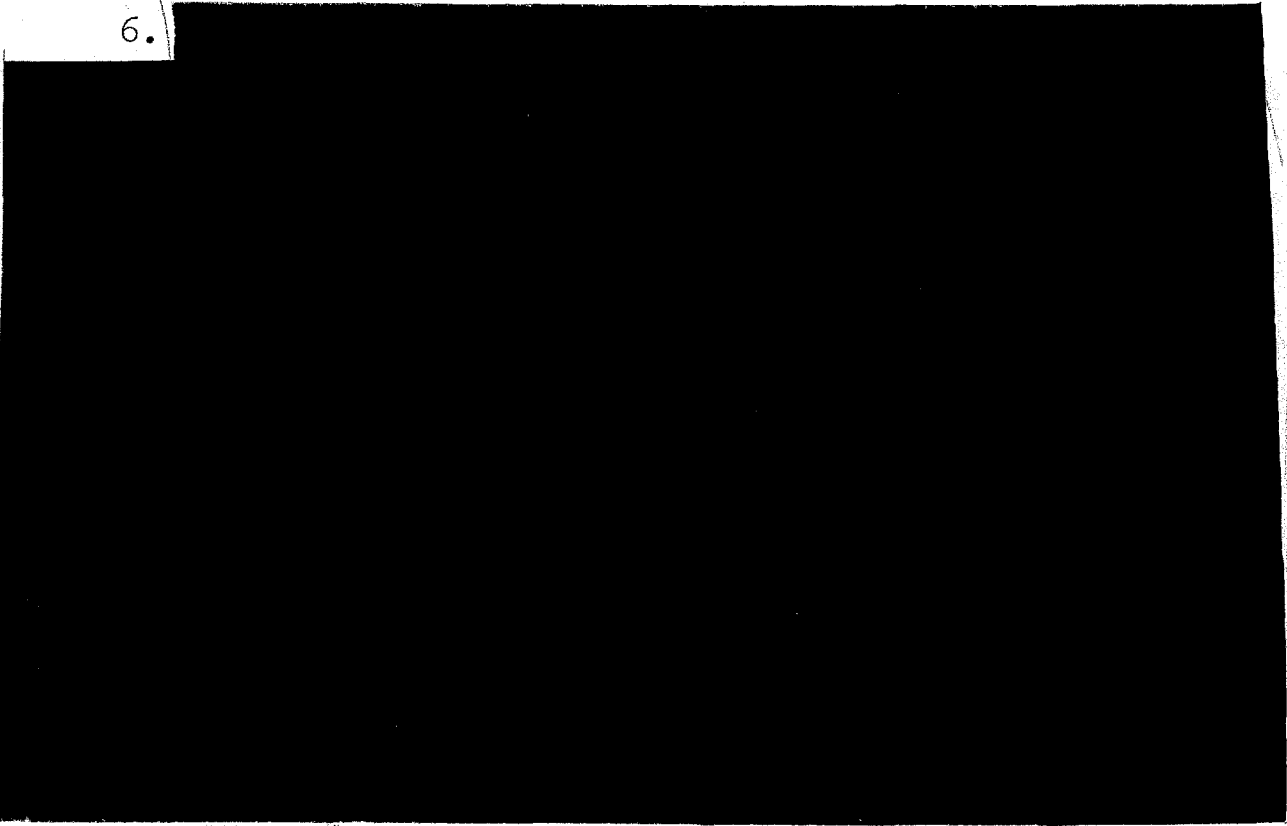
If a decision is made to fire any of these the Commission will be so informed.

5.



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6.



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7. [REDACTED]

[REDACTED] These safety tests will be conducted in November or December of 1957 at the NTS. [REDACTED]

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DOE
6.1(a)

Because of the short time until these tests, the approval of these tests and the authority to expend the necessary special nuclear material must be obtained now.

8. Two or three underground tunnel tests of very small yield devices are also proposed. These shots would be fired in the same tunnel at NTS as was used for the underground shot fired September 19, 1957 during PLUMBBOB. They would be fired there after HARDTACK, probably in the fall of 1958. The purpose of moving these small yield shots from the HARDTACK program at the EPG to the NTS is to reduce the number of shots during Operation HARDTACK in compliance with the President's directive, and to minimize the cost of testing these devices since the use of the existing tunnel at NTS will be less expensive than taking these devices to the EPG. [REDACTED]

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9. [REDACTED]

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[REDACTED]

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6.1(2)

These estimates for Operation HARDTACK compare with the CASTLE and REDWING test series as follows:

[REDACTED]

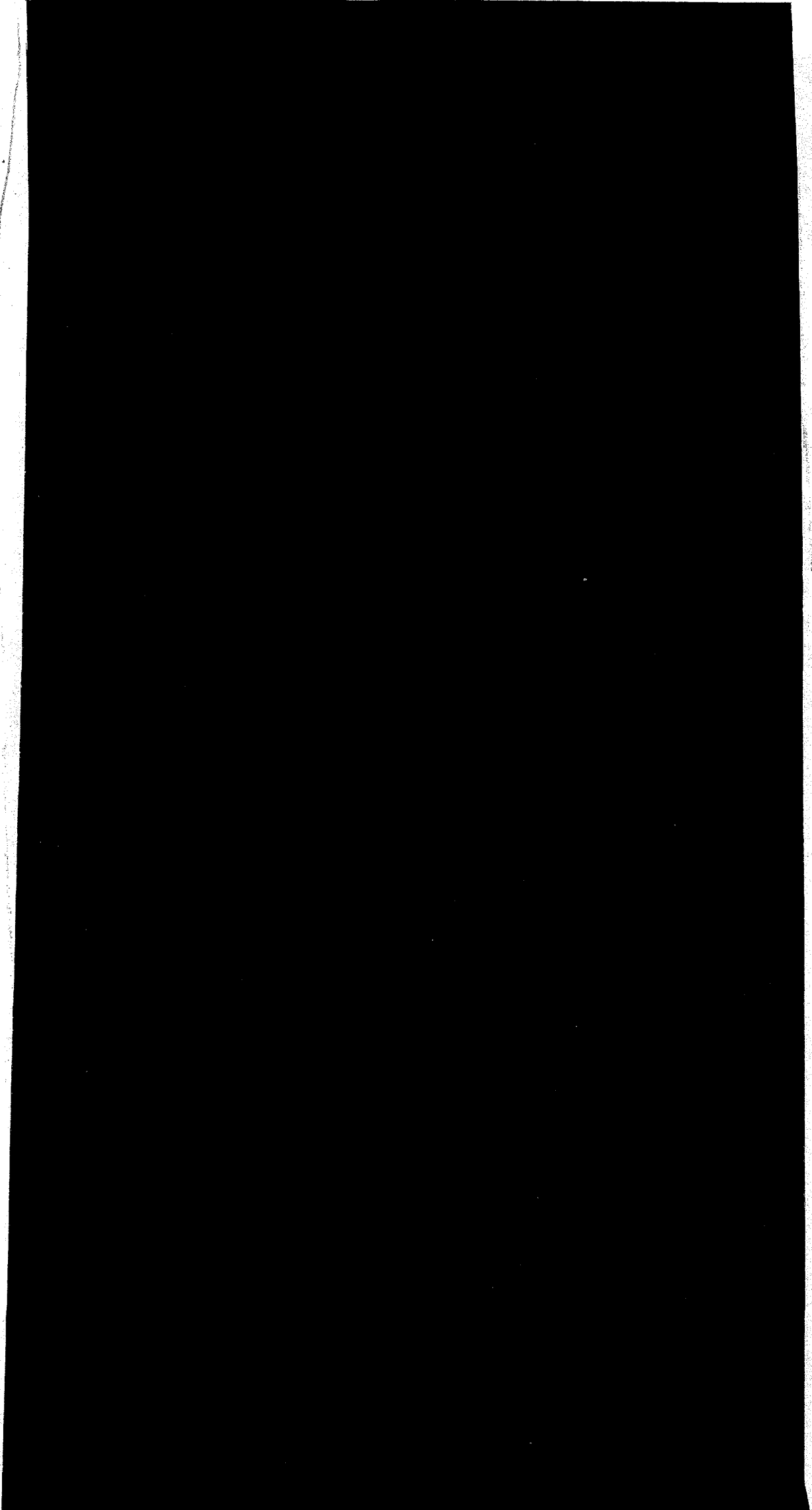
DOE
6.1(2)

[REDACTED]

8/6

APPENDIX "B"

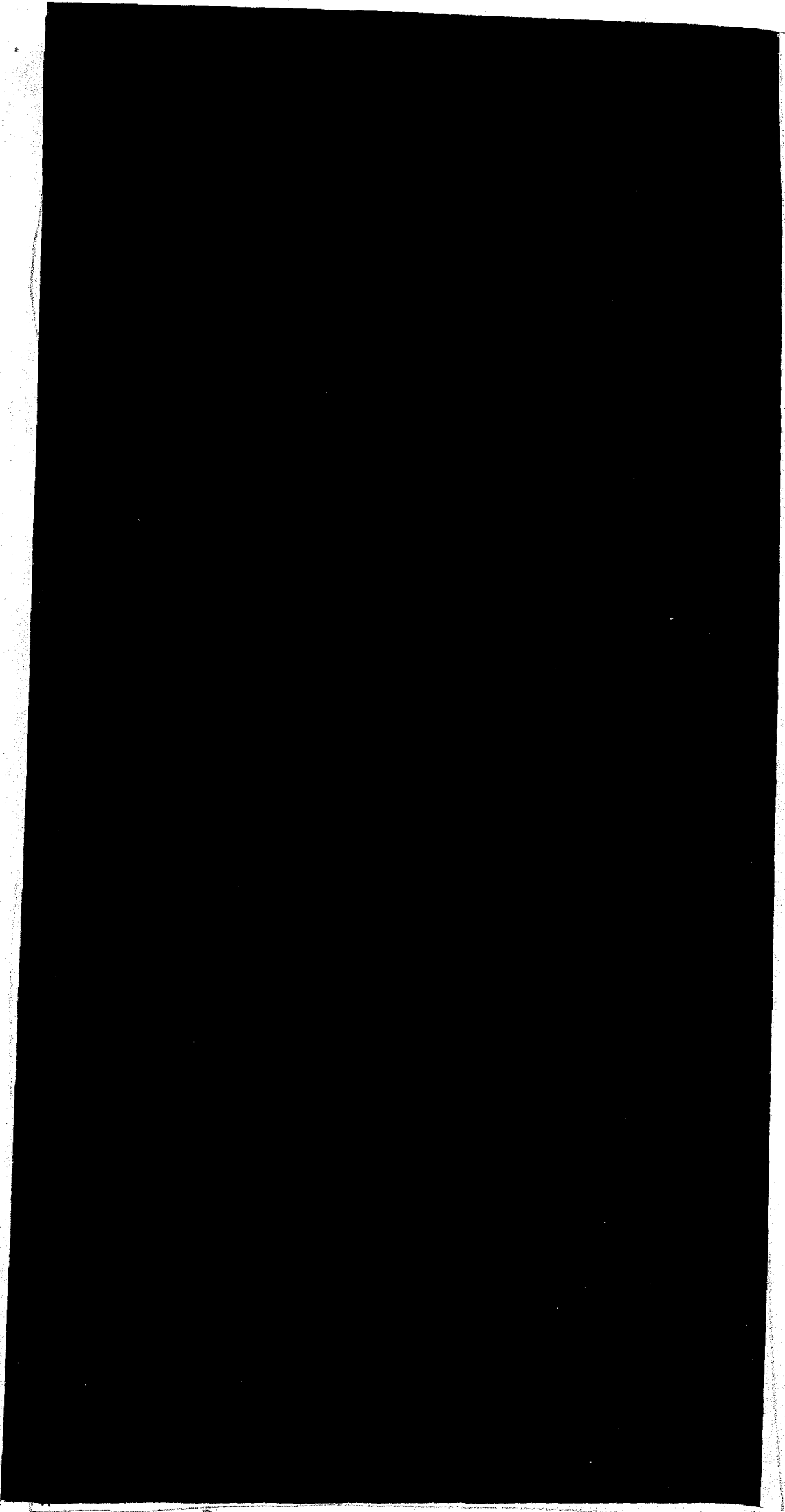
PROPOSED HARDTACK TEST PROGRAM



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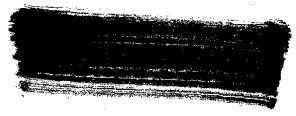


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DOE
6.1 (a)

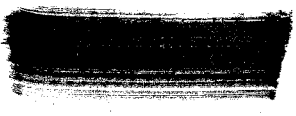
DOE
6.1 (a)



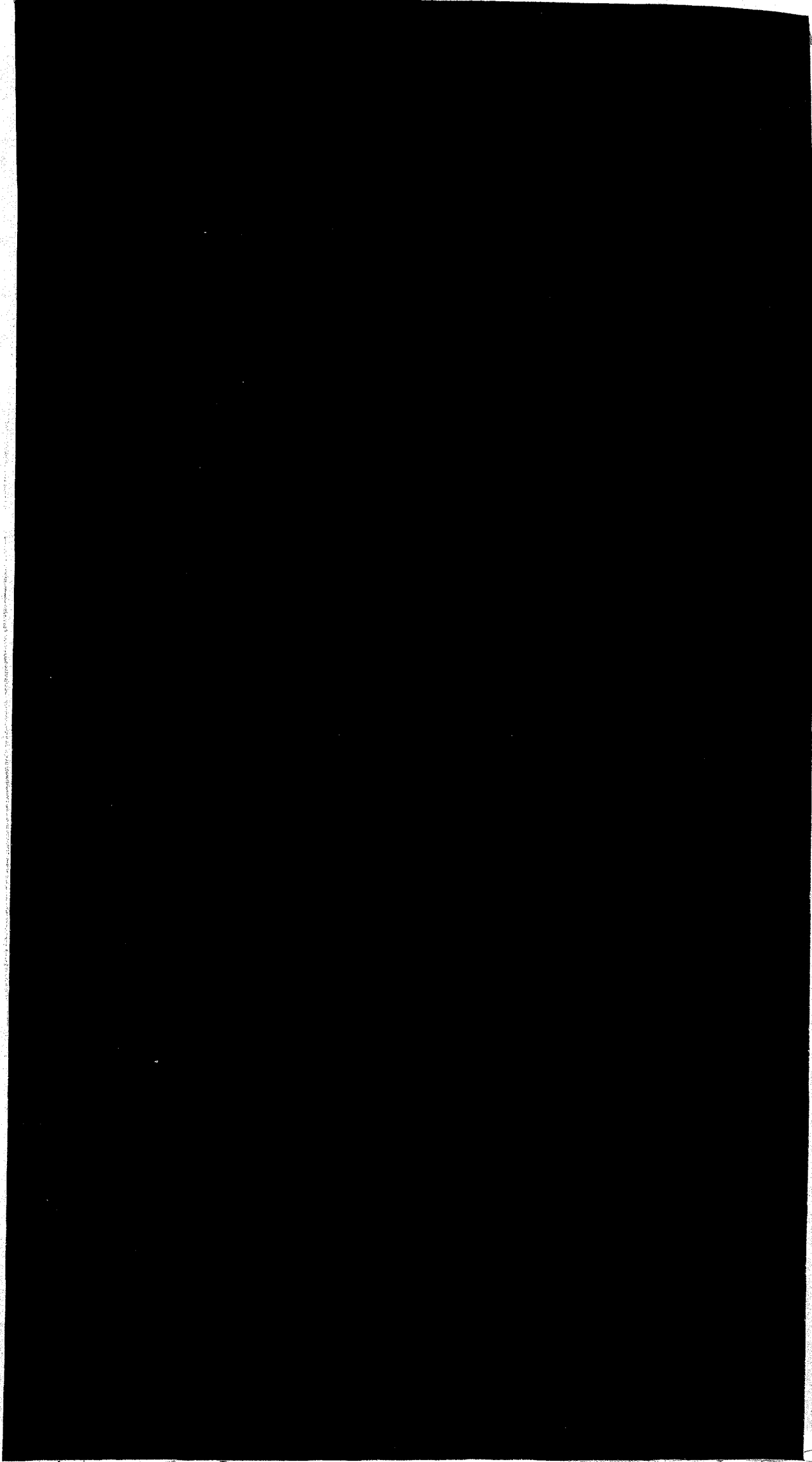
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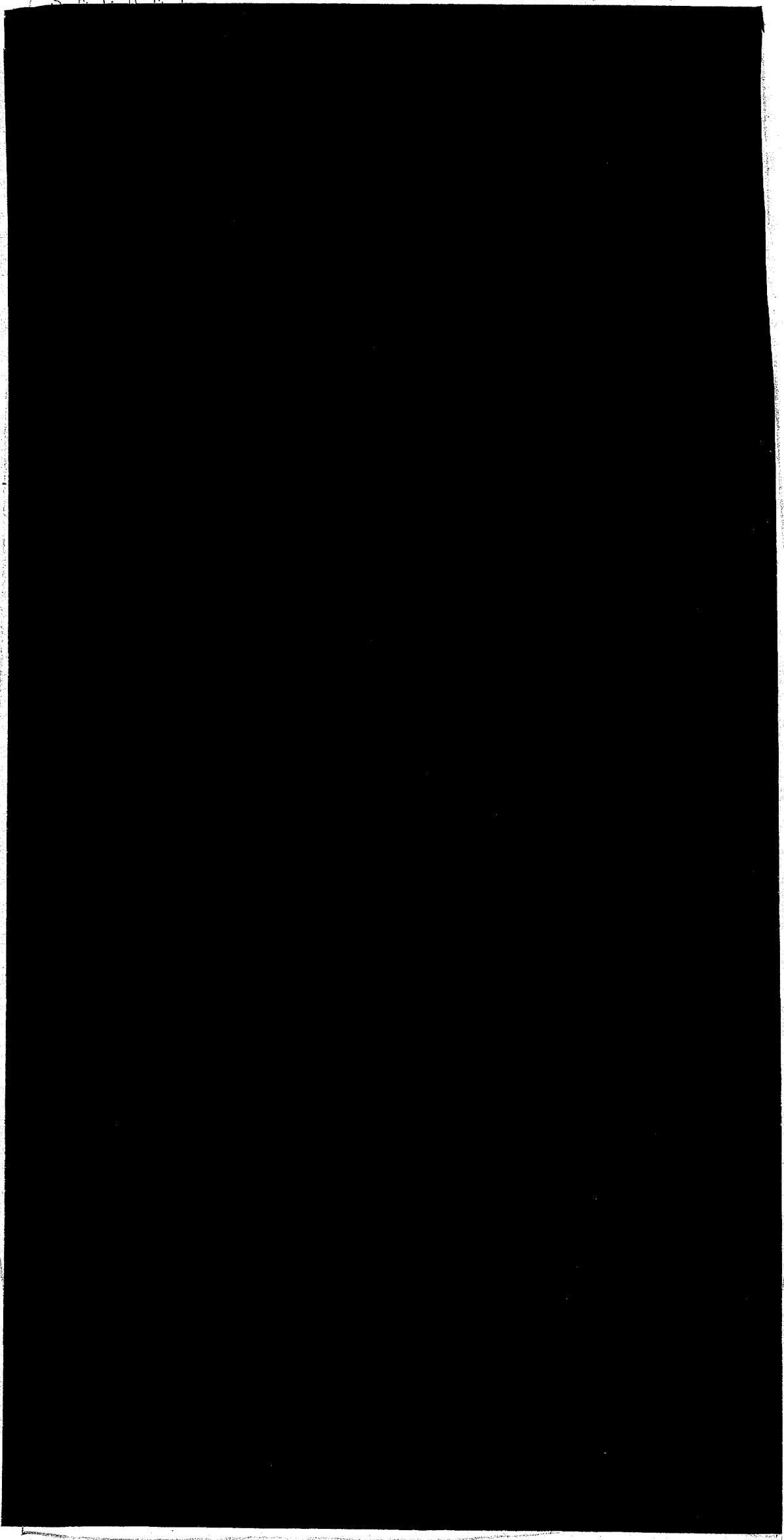
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DOE
6/10

DOE
6/10



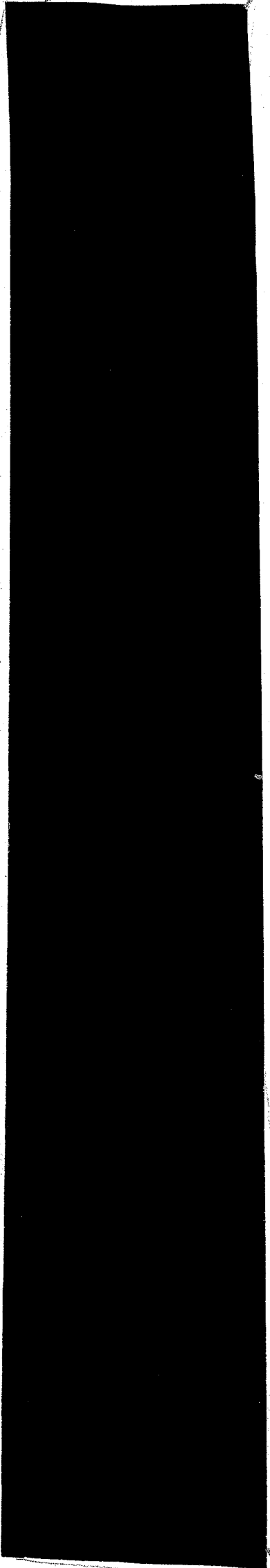


DOE
6.1 (a)

DOE
6.1 (a)



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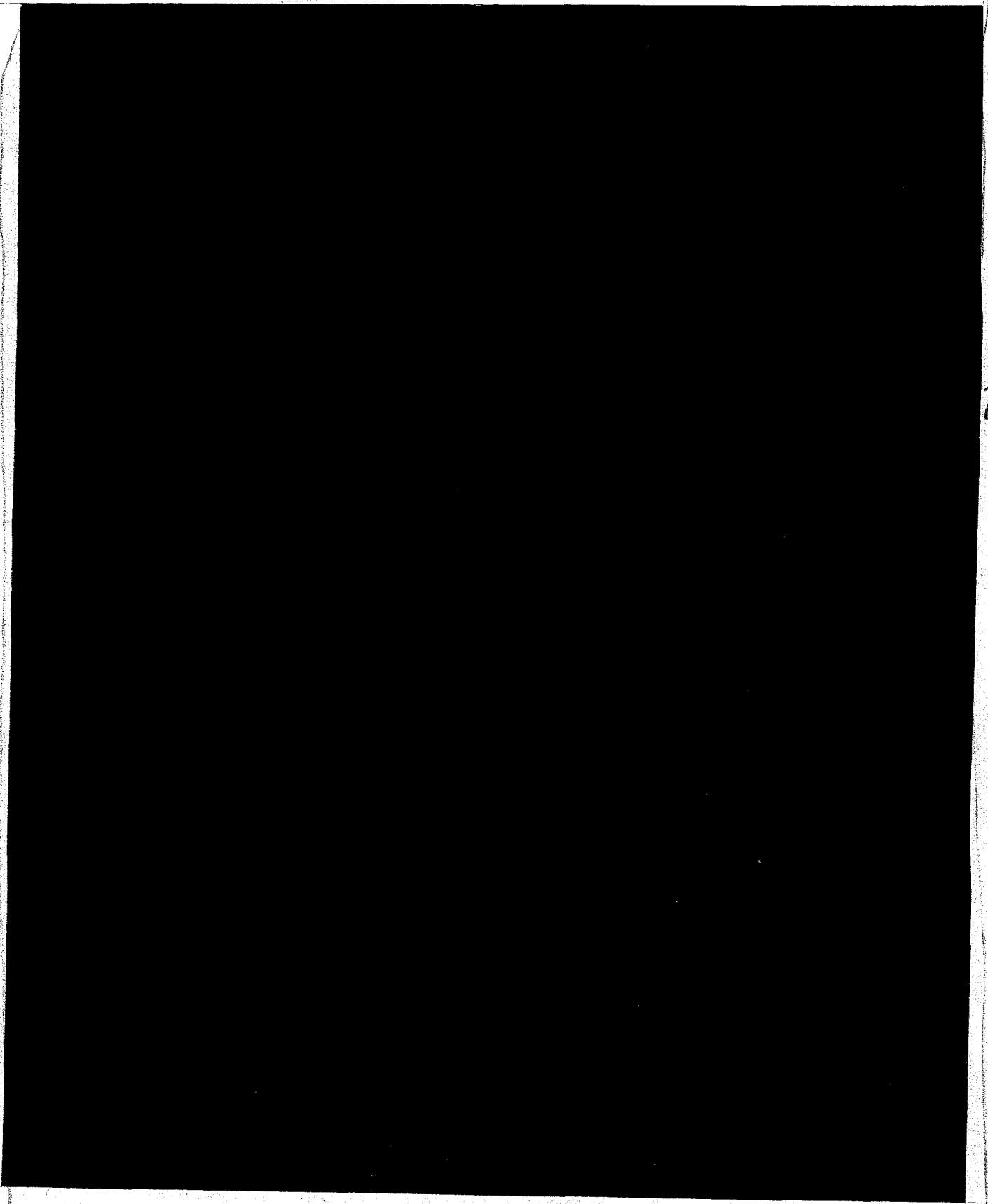
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APPENDIX "C"

I. HARDTACK YIELD ESTIMATES

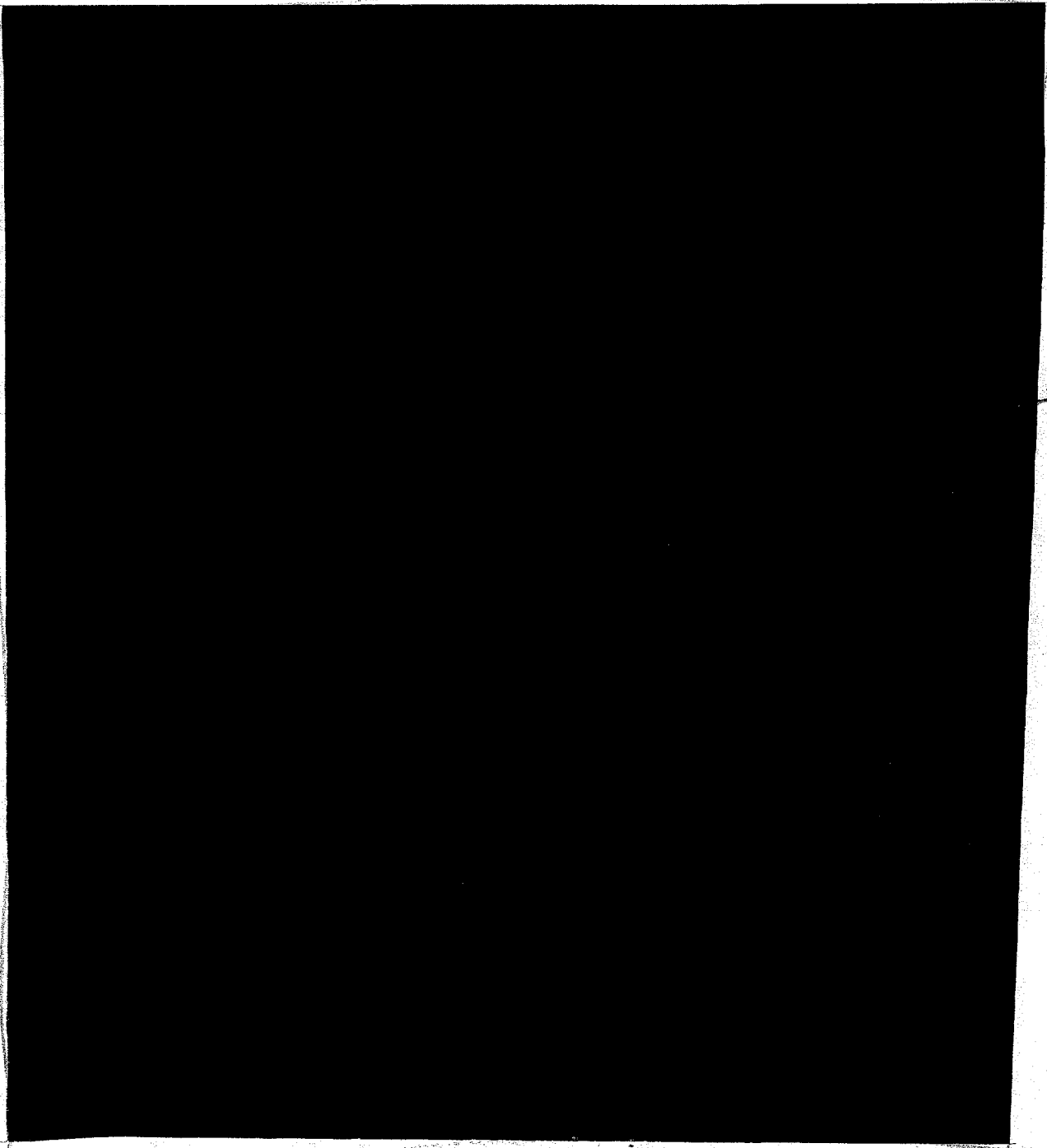


DOE
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DOE
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DOE
6.1.10

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APPENDIX "D"

DRAFT LETTER TO THE CHAIRMAN, MLC

1. The Atomic Energy Commission has approved, and requests your concurrence in, the test program for Operation HARDTACK, to be conducted at the Eniwetok Proving Ground commencing on or about April 15, 1958. The list of shots included in the program is attached.

2.

[REDACTED] Five shots in the program are weapons effects tests for the Department of Defense. [REDACTED]

[REDACTED] The question of this demonstration shot is currently being considered by the Commission. If the demonstration is not required, this shot would be deleted from the program.

3. In addition to these shots planned for firing at the EPG, there will be certain shots fired at the NTS, both prior to and following the HARDTACK operation.

[REDACTED] No significant nuclear reaction is expected from these firings. [REDACTED]

[REDACTED] The radioactive products of these tests will be completely contained underground.

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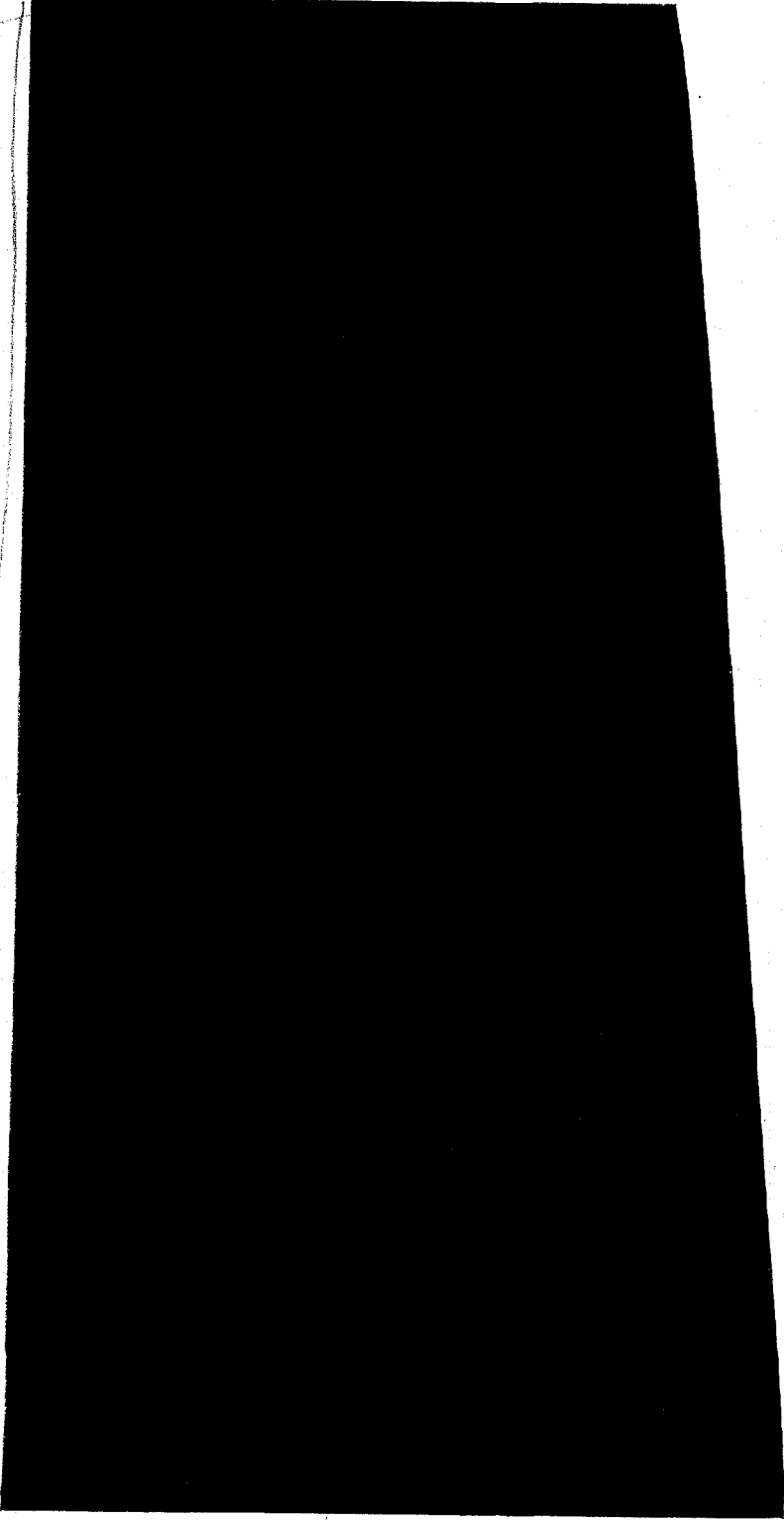
4. The Commission intends to designate the Commander, Joint Task Force SEVEN, as the Senior AEC Representative at the EPG during the operational phase of HARDTACK. Your concurrence in this designation is requested.

5. We request your comments on, and assurance of Department of Defense support for, Operation HARDTACK. Upon receipt of your comments, we will inform the President of our plans and request authority to expend the necessary nuclear materials.

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ANNEX TO APPENDIX "D"

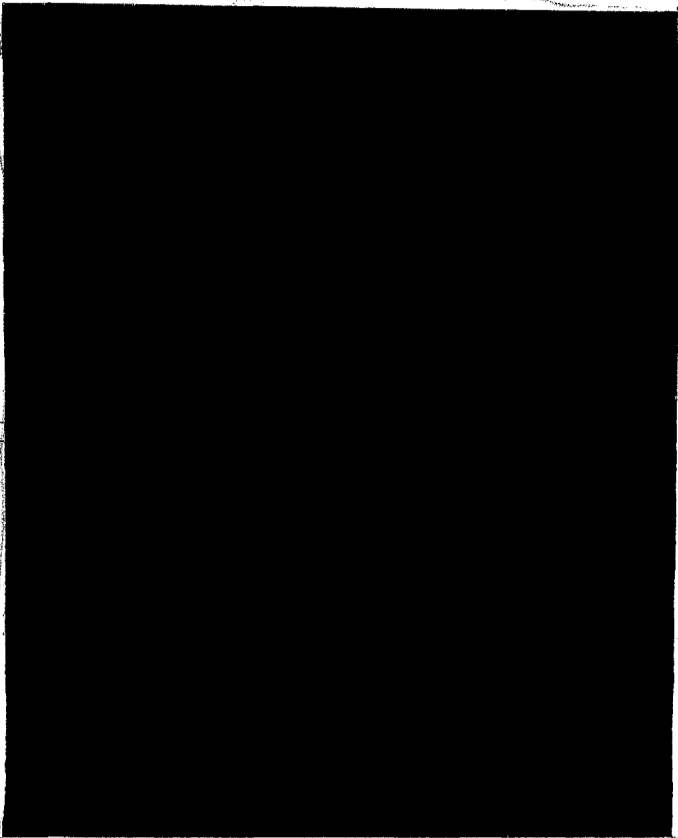
HARDTACK TEST PROGRAM



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b.1(a)

[REDACTED]

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(b.1)(2)

[REDACTED]

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APPENDIX "E"

DRAFT LETTER TO THE PRESIDENT

1. On August 2, 1957, I wrote you concerning Operation HARDTACK, the nuclear test series planned for the spring of 1958 at the Eniwetok Proving Ground. I pointed out that the then estimated number of nuclear shots for the series was 25, that it was planned to initiate the series as early as possible and that this date appeared to be April 1, 1958. My letter also requested that you note that the AEC and DOD were proceeding with preparations for the series. On August 9 you discussed the matter of HARDTACK with me and approved starting the series as early as possible, directing that the number of nuclear shots be held to the minimum necessary for attaining the essential defense objectives.

2. Pursuant to your approval we have gone forward with preparations for the series. It is apparent now that, if the necessary scientific objectives are to be realized in the shortest test period and at least cost, the first shot should be fired on or about April 15. The remaining shots would follow as quickly thereafter as devices could be emplaced and desired weather conditions occur.

3. The AEC and the DOD have reviewed individually and collectively our planned firings with the objectives of reducing the number of the minimum consistent with fulfilling essential defense objectives. [REDACTED]

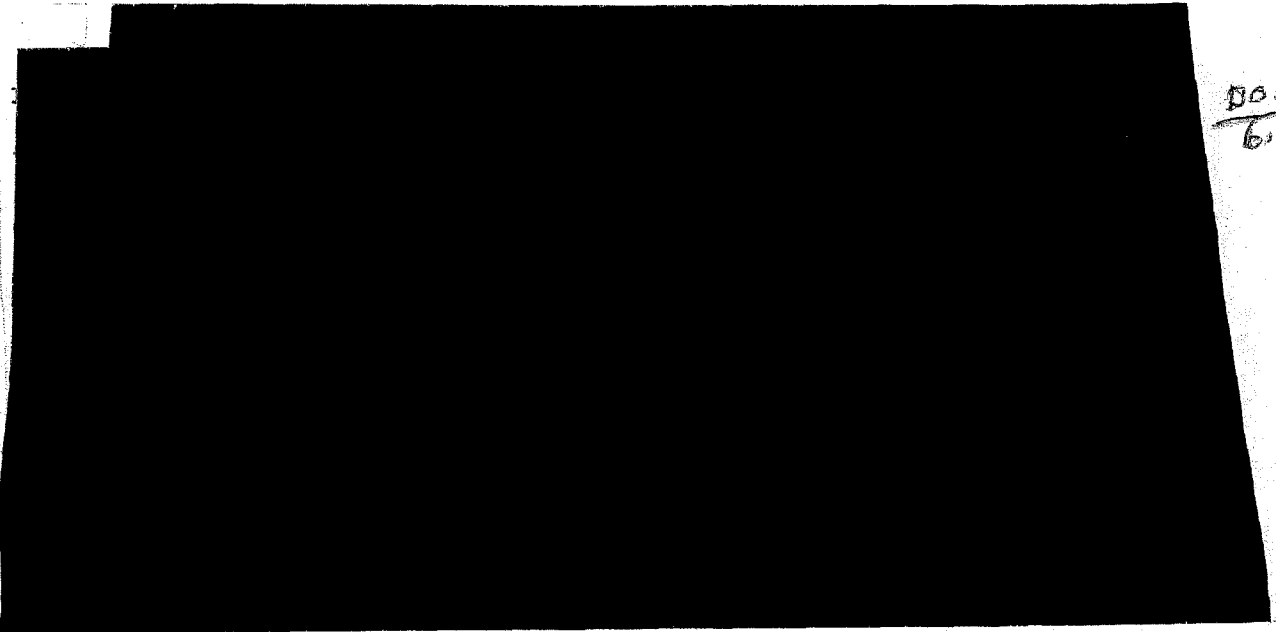
[REDACTED] In addition, the DOD must conduct five weapons effects tests. [REDACTED]

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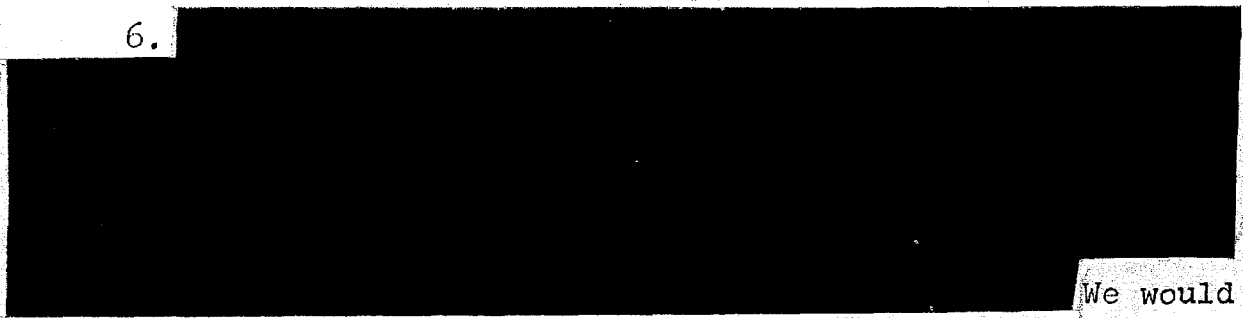
This latter matter is under intensive study and you will be asked to review our plans at an early date.



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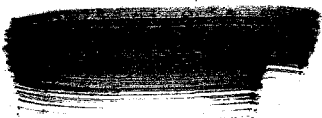
5. The design of several of the devices concerned is not yet firm and it is not possible to specify at the moment the exact amounts of nuclear materials to be expended. Prior to January 1, 1958, I shall submit to you an exact listing of the shots concerned, their individual objectives, and the amounts of nuclear material concerned.

6.



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We would



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plan to fire these safety shots in Nevada during November or December of 1957. No significant nuclear reaction is expected from the firings and no hazard offsite.

I request your authority to expend this material for the purpose described.

7. The AEC is making every effort to insure that the fission yield of the series and the offsite fallout is held to the minimum.

The contribution to worldwide fallout from these 23 firings would be slightly greater than from REDWING, but less than half of that from CASTLE. This increase of worldwide contribution over that of REDWING results from the fact that two of the high altitude effects shots must be of the standard rather than the "clean" design, and the fact that at this altitude all of the fission yield is presumably deposited worldwide.

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8. In the interest of reducing to the minimum the number of shots in HARDTACK and of minimizing over-all testing costs, we would plan to fire two or three very small yield nuclear shots in the existing tunnel at the Nevada Test Site after HARDTACK has been completed. These would be of the same or lesser yield than the shot fired there on September 19 and under conditions where the radioactivity would be totally confined within the earth.



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Dwight D. Eisenhower

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