

NW 97206A

FOLDER ~~MIA 3 CASTLE~~

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October 7, 1953

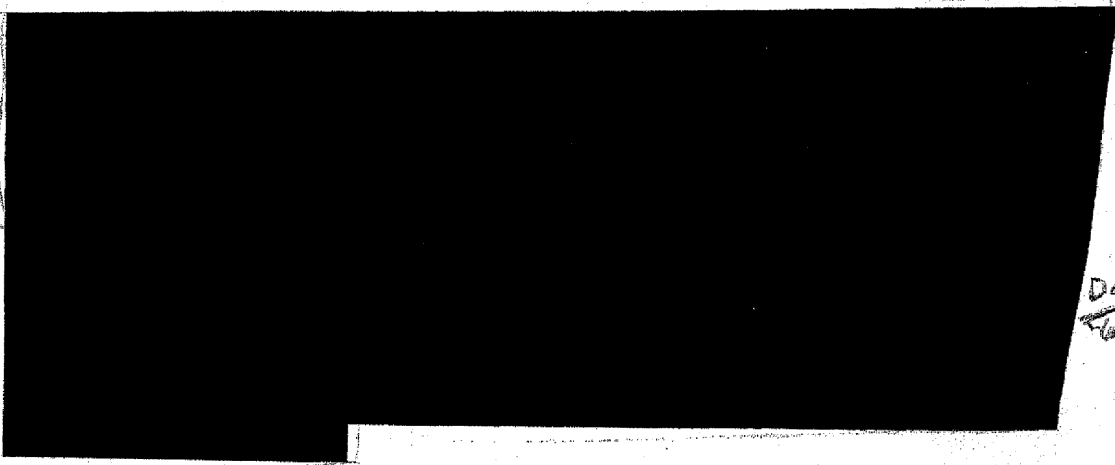
~~AUTHORIZED BY 6 Oct
U. S. ARMY COMMISSION
BY: ~~KE Dicks~~
DOCUMENT NO. LXI 2418-3A~~

Honorable Robert LeBaron
Chairman
Military Liaison Committee
to the Atomic Energy Commission

Dear Mr. LeBaron:

Reference is made to the October 1, 1953, joint AEC-MLC meeting at which the scope and timing of the CASTLE program were discussed and general agreement was reached on a seven shot program scheduled to commence March 1, 1954.

Operation CASTLE embraces both short-term and long-term goals of the thermonuclear program. The short-term goal is to prove in an emergency capability with one or more thermonuclear weapons currently being engineered for production and delivery. The long-term goal is to test new designs which should lead to thermonuclear weapons that are smaller, lighter, more deliverable, and perhaps of higher yield in the future.



A CASTLE program consisting of the above-named seven shots is presently believed to be the maximum practicable program. While the magnitude and complexity of a seven shot program is not to be underestimated, it appears ill-advised to consider anything short of a maximum effort in view of the importance of thermonuclear

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By ~~Don LGA~~ Date ~~7/25/06~~

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Mr. LeBaron

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weapon progress. Any alternative plan such as postponing a portion of the shots until the Fall of 1954 would be uneconomic and harmful to either the immediate "emergency capability" program or future progress in the field of thermonuclear weapons.

The earliest feasible date for scheduling the start of the CASTLE tests is March 1, 1954. This is based on the rate of supply of lithium-6, the time required for fabrication, shipment, and assembly of weapon components, and the schedules for construction of test sites and installation of equipment at BIKINI and ENIWETOK, work on which is underway in both places.

Reports prepared by the Division of Military Application, Los Alamos Scientific Laboratory, and the University of California Radiation Laboratory, Livermore, are enclosed as background information relative to the CASTLE program and for detailed information relative to the weapon prototypes and test devices to be exploded. Appended to the Los Alamos report are possible production schedules for the emergency capability period. These schedules are being reconsidered in light of the recently received Joint Chiefs of Staff's requirements for thermonuclear weapons.

In summary, CASTLE plans are as follows:



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b. The first test will be scheduled for March 1, 1954, and the sequence, exact dates, and locations of the various tests will be determined by the Commander of Joint Task Force Seven in conjunction with the Los Alamos and UCRL-Livermore Laboratories.

Assurance of the Department of Defense support of this very important program is requested.

Sincerely yours,

Lewis L. Strauss
Chairman

Enclosures:

"A" - CASTLE Program Background,
& Discussion prepared by DMA, Cpy 1A

"B" - Rpt, 9/22/53, frn LASL, Cpy 1B

"C" - Rpt, 9/21/53, frn UCRL-Livermore

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AUTHENTICATED 5 Oct 1953
U. S. ATOMIC ENERGY COMMISSION
BY: KE Zullo Stromberg
DOCUMENT NO. LXI 2419-2 A

ENCLOSURE "A"

CASTLE PROGRAM BACKGROUND AND DISCUSSION

DIVISION OF MILITARY APPLICATION, AEC

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BACKGROUND

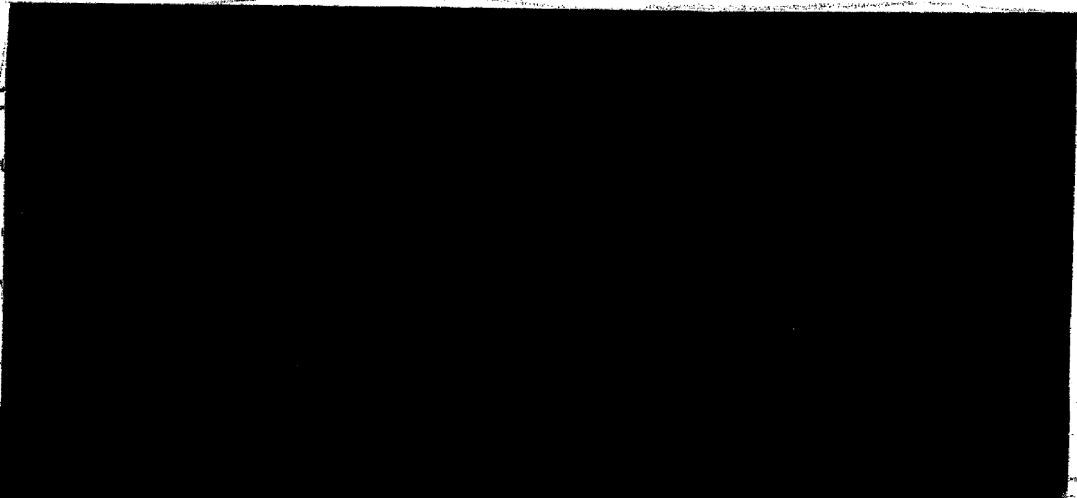
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The MLC advised of concurrence by the Department of Defense in a letter of July 3, 1952 (AEC 493/8). The possibility was envisaged at that time that other radiation-implosion devices might be included in the test operation.

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In order to accomplish this program,
Los Alamos recommended that CASTLE be held in the Spring of 1954.

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By letter of January 2, 1953
(AEC 597/7) the Commission proposed to the MLC that CASTLE be held as
early in 1954 as technical progress permitted, and by letter dated
January 19, 1953 (AEC 597/11) the MLC advised of Department of Defense
concurrence.

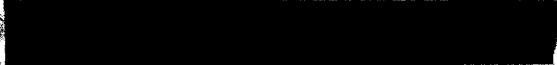

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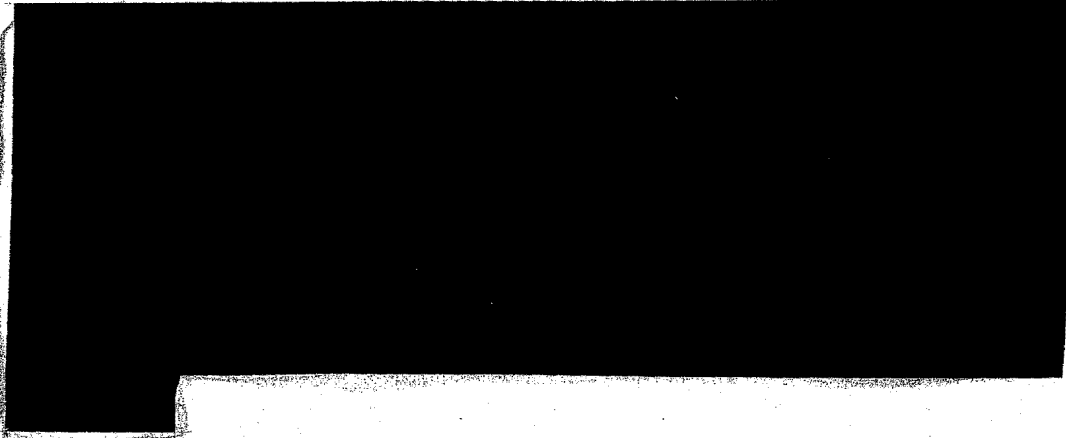
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 The latter would have a better chance of success and would give a higher yield, but would be dependent on lithium-6 production. Meanwhile, in the Spring and Summer of 1953, the Air Force indicated the importance of reducing the weight of thermonuclear weapons for delivery by the B-47, a medium bomber being produced in large numbers, and for delivery by the Hustler, a new medium bomber under development. 

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5. The program for thermonuclear development, testing, and emergency capability have been going forward with great emphasis and speed. The importance of these programs is increased by the fact that the Soviet Union conducted an atomic test on August 12, 1953, that involved both fission and thermonuclear reaction.

DISCUSSION

6. Following a meeting on September 17, 1953, at Los Alamos among representatives of the Atomic Energy Commission, Los Alamos, UCRL-Livermore, Oak Ridge, and Joint Task Force

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Seven, proposals for the CASTLE tests were formally submitted by
Los Alamos and UCRL-Livermore and are attached as Enclosures "B"
and "C".

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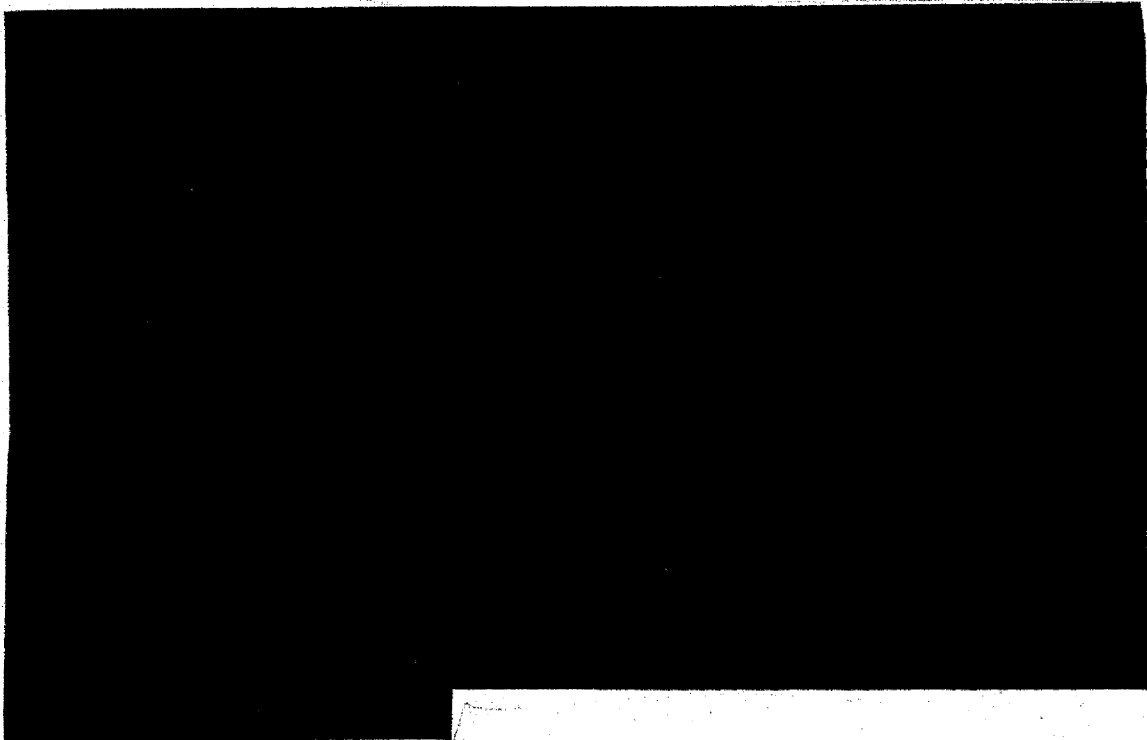
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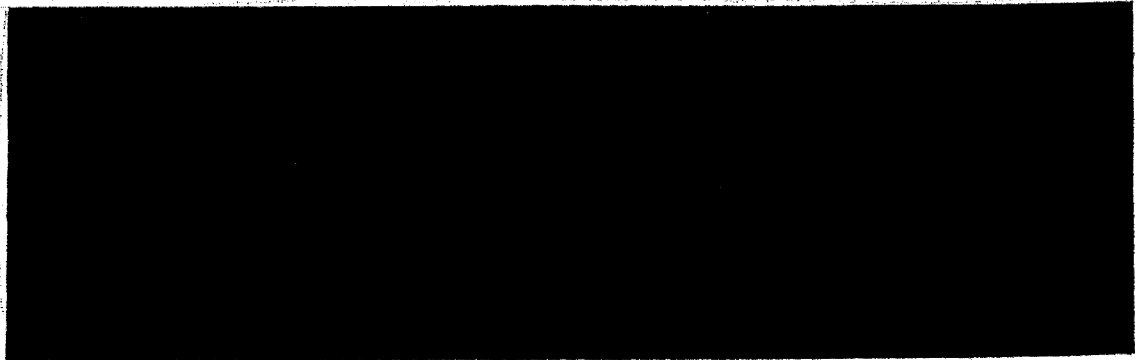


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The goal is to obtain data which will enable the next generation of thermonuclear weapons to be of smaller size, lighter weight, higher efficiency, or greater yield.



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Detailed discussions are contained in

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Enclosures "B" and "C".

10. In regard to the timing of the CASTLE Operation, Los Alamos proposes in Enclosure "B" that March 1, 1954, be set as the target date for the first test. This is based on the rate of supply of lithium-6, the time required for fabrication, shipment, and assembly of weapon components, and the schedules for construction of test sites and installation of equipment at Bikini and Eniwetok. Although there is no one phase of the preparations which prohibits the start of CASTLE a little earlier, every phase is so tight that March 1 seems the best target date to set for the initial detonation. Tentatively establishing a less realistic date would lead to confusion in planning and conducting the operation and would probably not result in an earlier successful completion of the operation.

11. Scheduling the date of the first CASTLE test for March 1 does not adversely affect the time when the first emergency capability is to be achieved.

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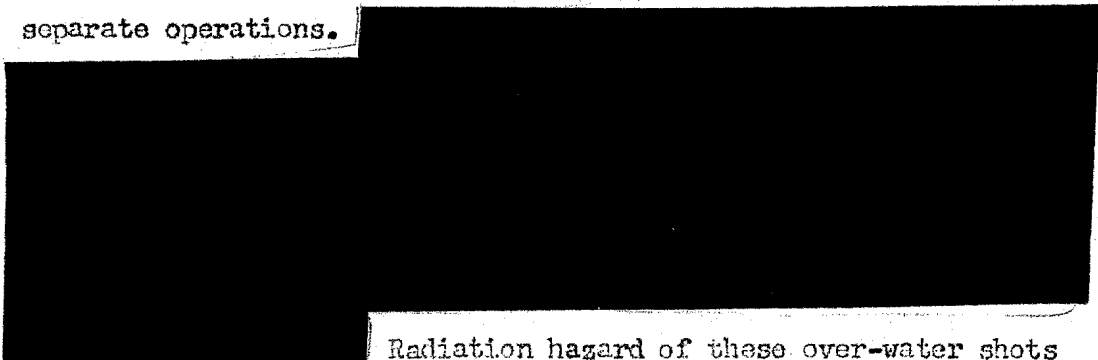
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12. Consideration was given to limiting the CASTLE program to a maximum of four shots and deferring the remaining tests to a later operation. While this would be favorable from the point of view of simplifying and shortening the CASTLE Operation, it would not be consistent with the maximum effort toward thermonuclear progress. It would also involve greater expense inherent in two separate operations.



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Radiation hazard of these over-water shots appears sufficiently low to permit firing at the close time intervals anticipated. The instrumentation mounted on the islands could, if not damaged, service three shots probably as well as two.

13. The CASTLE program recommended in this paper is believed to be the maximum practicable program. It covers all available possibilities for providing an emergency capability and should furnish an excellent basis for the future development of thermonuclear weapons.

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