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No. 16 of 17 copies, Series A
Authenticated AUG 18, 1958
U. S. Atomic Energy Commission
By: [Signature]

Document No. LXXXI-567-16A

73758

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QUARTERLY PROGRESS REPORT

to the
**JOINT
COMMITTEE
on ATOMIC
ENERGY**

Part III - WEAPONS

US DOE ARCHIVES
526 US ATOMIC ENERGY
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Weapons Reports To JCAE

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April-June 1958

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UNITED STATES ATOMIC ENERGY COMMISSION

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Part III

Weapons

WEAPONS PRODUCTION (~~TOP SECRET~~)

The number of weapons produced during the April-June quarter was slightly less than the revised forecast set forth in the January-March report. Some of the major difficulties and attendant delays encountered in starting up production of the numerous new types of weapons during the second half of the fiscal year were resolved. Vigorous efforts are being directed toward resolving the remaining difficulties and toward the achievement of the record production rates that are necessary in order to meet stockpile requirements at the end of fiscal year 1959. Notwithstanding the delays encountered, it is expected that the previously reported forecast of the number of nuclear weapons to be in stockpile by June 30, 1959, will be essentially met.

The number of nuclear weapons in stockpile was 34 percent greater on June 30, 1958, than on June 30, 1957.

Initial units of the following new weapons were produced during the quarter:

- Mk-39 Mod. 1 Class C thermonuclear warhead for the Redstone missile.
(warhead) Y2
- W-34 Fission warhead for atomic depth bomb Lulu, laydown bomb
Hotpoint/A, and submarine-launched torpedo ASTOR.
- Mk-36 Y2-Mod. 1 Reduced fission version of the Class B thermonuclear bomb.

The Mk-36 Y2-Mod. 1 (~~TOP SECRET~~)

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WEAPONS DEVELOPMENT

Previously reported weapon development programs and feasibility studies continued.

A new development program, TX-43-X1, was established to provide the TX-43 laydown weapon with an airburst option.

The feasibility study of a high-yield warhead for the Air Force Bomarc missile was completed, and a development program was established to achieve application of the XW-47 warhead to this missile.

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WEAPONS

The following new feasibility studies were initiated:

1. Warhead for the improved MB-1 rocket,
2. Improved warhead for the ICBM's, Atlas and Titan, and
3. Warhead for the Minuteman, an Air Force solid-propellant ICBM.

WEAPONS TESTING

Operation HARDTACK

The first nuclear test of the HARDTACK series was conducted on April 27. Thirty-two tests had been conducted by August 11, as follows:

Shot name and device	Date fired	Yield		Objective
		Expected	Actual (Preliminary)	
YUCCA DELETED	April 27	DELETED	DELETED	Very high altitude effects test
CACTUS DELETED	May 5	14 kt.	16.6 kt.	
FIR DELETED	May 11		DELETED	
BUTTERNUT DELETED	May 11	DELETED	DELETED	DELETED
KOA DELETED	May 12	1.75 mt.	1.3 mt.	
WAHOO DELETED	May 15			Effects
HOLLY DELETED	May 20			
NUTMEG DELETED	May 21			
*YELLOW WOOD DELETED	May 25			
MAGNOLIA DELETED	May 26	DELETED	DELETED	DELETED
*TOBACCO DELETED	May 29	DELETED	DELETED	DELETED
*SYCAMORE DELETED	May 30			
*ROSE DELETED	June 2			

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WEAPONS

Shot name and device	Date fired	Yield		Objective
		Expected	Actual (Preliminary)	
UMBRELLA XXXXXXXXXX	June 8			
MAPLE XXXXXXXXXX DELETED	June 10			
WALNUT XXXXXXXXXX DELETED	June 14			
ASPEN XXXXXXXXXX DELETED	June 14			
LINDEN XXXXXXXXXX	June 17			
ELDER XXXXXXXXXX DELETED	June 27			
REDWOOD XXXXXXXXXX DELETED	June 27			
HICKORY XXXXXXXXXX DELETED	June 28			
OAK XXXXXXXXXX DELETED	June 28	7.5 mt.	9.35 mt.	Prototype test
SEQUOIA XXXXXXXXXX DELETED	July 1			
CEDAR XXXXXXXXXX DELETED	July 2			
DOGWOOD XXXXXXXXXX DELETED	July 5			
POPLAR XXXXXXXXXX DELETED	July 11			
PISONIA XXXXXXXXXX DELETED	July 17			
JUNIPER XXXXXXXXXX DELETED	July 22			
OLIVE XXXXXXXXXX DELETED	July 22			
PINE XXXXXXXXXX DELETED	July 26			

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WEAPONS

Shot name and device	Date fired	Yield		Objective
		Expected	Actual (Preliminary)	
TEAK DELETED	August 1			
*QUINCE DELETED	August 5		DELETED	

The preliminary results revealed that the yield of several of the devices (those indicated by an asterisk) fell substantially short of expectations. To obtain further data for the particular developments involved, additional tests were conducted. Additional shots were also conducted to take advantage of recent weapon research within the laboratories and to meet the need expressed by the Department of Defense for early development of specified weapon systems.

Two of the shots listed in the January-March report were eliminated, the BUCKEYE shot, listed as a contingent shot, and the demonstration shot PINON because of conflict of timing with the Geneva Conference.

On August 11, only two test shots remained for the HARDTACK series. These were FIG ~~DELETED~~ and ORANGE, the firing of an ~~DELETED~~ as a very high altitude effects test. Like the TEAK shot, the ORANGE test was to be conducted at Johnston Island, about 550 miles southwest of the Hawaiian chain.

Future Weapon Tests

Operation MILLRACE, planned for the late fall of 1958 at the Nevada Test Site, is to consist exclusively of underground shots. The schedule includes five small diagnostic shots, one relatively deep underground shot of ~~DELETED~~ to explore the field of underground testing, and approximately eight safety tests, from which no significant nuclear yield is expected.

Preliminary planning was started for Operation TRUMPET, tentatively scheduled for the spring of 1959 at the Nevada Test Site.

WEAPONS FACILITIES

Operation of the Pinellas plant. A prime contract for a 2-year period was awarded in June to the General Electric Company for the operation of the Pinellas Peninsula Plant near St. Petersburg, Florida. This plant, which produces external initiators for sealed-pit weapons, was formerly operated by General Electric under a subcontract with Sandia Corporation.

Storage facilities. The AEC concurred with the conclusion of the report of the Joint Board on Future Storage of Atomic Weapons that existing National Stockpile Sites and Operational Storage Sites, and existing and planned Service Storage Facilities will be adequate to store the entire national stockpile through June 1962.

Ballistics test range. Negotiations were begun with officials of the Navajo tribe at Winslow, Arizona, for lease of approximately 40,000 acres of desert land on the Navajo reservation for use as a ballistics test range. At the range, measurements would be made of separation characteristics of unarmed bombs and missiles from high speed aircraft and of trajectory so that separation techniques, weapon shapes, and other factors may be evaluated.

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WEAPONS

The Winslow range would provide capability not only for testing weapon shapes dropped from current aircraft but from higher speed aircraft of the future. It would be operated by Sandia Corporation, which now operates the ballistics ranges at Tonopah, Nevada, and at Salton Sea, California. Use of the proposed range would enable the AEC to end operations at the Tonopah range which was established on an interim basis in 1956.

Construction. Expansion of weapon research and development facilities at the University of California Radiation Laboratory at Livermore was 42 percent complete and essentially on schedule on June 30. Construction of the Sigma Building at Los Alamos was 35 percent complete and slightly behind schedule.

The 1958 plant expansion of ACF Industries, Inc., at Albuquerque was 34 percent complete and on schedule. This plant produces cases for thermonuclear weapons.

Design of the building and supporting facilities for a 5-megawatt reactor for testing weapon components by Sandia Corporation in Albuquerque was started. TOP SECRET

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