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DEPARTMENT OF DEFENSE
MILITARY LIAISON COMMITTEE
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MONTHLY REPORT NO. 92

of the

CHAIRMAN, MILITARY LIAISON COMMITTEE

to the

SECRETARY OF DEFENSE

for the period

1 November 1958 - 30 November 1958

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CHAIRMAN, MILITARY LIAISON COMMITTEE
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for the period
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	<u>Copy No.</u>
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I. PRODUCTION

1. General

An index of the current production rate of oralloy, plutonium, tritium and lithium-6 is given below. The first column of this index is obtained by comparing the actual production in October with the average monthly rate during Fiscal Year 1959 as forecast by the Atomic Energy Commission's November 1958 Planning Estimates. The second column indicates the percentages of the forecast quantities of Fiscal Year 1959 production that actually were produced through the month of October (i.e. through four-twelfths or 33.33% of FY 1959.)

	<u>Percentage of Predicted Average Monthly Rate Produced During October '58</u>	<u>Percentage of Predicted Annual Production Produced as of 31 October '58</u>
Oralloy (93.2% U-235)	104.8%	34.2%
Plutonium (Pu)	87.0% *	32.7%
Tritium (T ³)	136.7%	33.7%
Lithium (95% Li-6)	187.2% **	67.6%

*The quantity of plutonium separated at the two reactor sites was approximately 30 percent less than the month of September. The neptunium recovery program interrupted plutonium separations at both sites, but principally at Savannah River.

**Lithium-6 was produced at a lower rate, however it shows as an increased percentage due to the reduced product requirements shown in the November Estimates.

2. Reactor Schedules and Operations (For November 1958)

A. Hanford

The on-stream-efficiency for all the reactors was 65% with an average-while-operating power level of 13,700 MW. There were five normal uranium and two enriched uranium slug failures. The slug failures

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caused a total lost time in the reactors of three and one-half days. Production for November was 21 percent less than the previous month due to KW reactor being shut down for scheduled modification to the water plant.

B. Savannah River

The on-stream-efficiency for all the reactors was 87.6% with an average-while-operating power level of 9,374 MW. This power level is a record high for Savannah River operation due primarily to seasonal reduction in cooling water temperatures in addition to use of a new cooling water pond. The feasibility of obtaining cooling water by recirculation in a large pond appears to have been demonstrated.

3. Dingot Metal Containing a Maximum of 5 ppm of Hydrogen

Savannah River is currently accepting up to one-third of its scheduled uranium fuel slug requirements as dingot ("direct ingot") metal containing a maximum of 5 ppm of hydrogen, with the average of all shipments in a given month not to exceed 3.5 ppm. Recent canning tests at Hanford have demonstrated that fuel cores produced from dingots and heat treated in NuSal (the chloride salt now being routinely used in the Beta heat-treating furnace at Fernald) may be canned by the lead-dip process with apparently good results. Consequently, Hanford has agreed to accept up to 50 tons per month of slugs, heat treated in NuSal, produced from dingots which contain up to 5 ppm of hydrogen. Acceptance of this metal at reactor sites will provide an outlet for about 225 tons of dingot metal per month. This is still below the 350 tons per month planned output of this facility. It is expected that solution of the hydrogen problem will provide adequate customers for dingot metal.

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4. Heavy Water Reactors

As the result of higher power levels, Savannah River reactor production for October expressed in MWD's was the highest to date, exceeding September's record on an average daily basis by 2 percent. Downtime for all reactors averaged 14 percent compared to 8 percent in September. About 5 percent of the downtime was due to scrams and ruptures and 9 percent from regular scheduled charge-discharge operations. "R" reactor experienced all the ruptures, having been shut down four times during October to remove ruptured slugs. The cause of these ruptures has not been determined.

5. Unsuccessful Attempt to Remove Neptunium

Plutonium separations at Savannah River were reduced considerably during the month of October because of a seven day interruption of processing operations while attempts were being made to remove Np-237 from the high level waste stream by ion exchange beds. All attempts to recover neptunium failed because of plugging of the filters or of the resin bed.

6. Heavy Water

The heavy water plant at Savannah River was reduced to one-third operation during October as a result of continuing lack of sufficient demand to sustain the previous two-thirds rate. The remaining portions of the plant are being maintained in standby.

7. Lithium-6 Production

Lithium-6 production is being decreased by reducing feed rates because of a decrease in product requirements.

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II. NUCLEAR POWER

1. Army Nuclear Power Plants

The Chairman, Military Liaison Committee forwarded a Schedule for Procurement and Construction of Army Nuclear Plants, as approved by the Secretary of the Army, to the Chairman, Atomic Energy Commission. The plan is to procure and construct eight reactor power plants through calendar year 1964. The power plants vary in electrical output from 300 to 10,000 KWE. Mobile and fixed installations are included.

2. Non-Weapon Radiological Accidents

The General Manager, Atomic Energy Commission informed the Chairman, Military Liaison Committee, that the Atomic Energy Commission will respond to requests from the Military Services through the Joint Nuclear Accident Coordinating Center for assistance in non-weapon radiological accidents or incidents on the same basis as written in the joint agreement involving nuclear weapons. As a result of this letter, the agreement now includes response to incidents involving military reactors.

III. WEAPONS

1. Phase 3 Development of the SERGEANT Missile

The Chairman, Military Liaison Committee transmitted to the Chairman, Atomic Energy Commission a letter requesting development, through Phase 3 of (b)(1),(b)(3):42 USC § 2162 (a) (RD) for use in the SERGEANT missile. The Department of the Army is designated cognizant agent for the Department of Defense portion of this development, with the normal Armed Forces Special Weapons Project participation.

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2. Phase 2 Feasibility Study (b)(1),(b)(3):42 USC § 2162 (a) (RD) with Full Fuzing Option

The Chairman, Military Liaison Committee transmitted to the Chairman, Atomic Energy Commission a letter requesting a Phase 2 feasibility study of (b)(1),(b)(3):42 USC § 2162 (a) with full fuzing option, i. e., airburst, ground impact burst and laydown burst for use against strategic targets.

The objective of the study will be to determine the feasibility of developing such a weapon with the following parameters: (b)(3):42 USC § 2162 (a)

(b)(1),(b)(3):42 USC § 2162 (a) (RD)

It is anticipated that this bomb will be required in moderate numbers.

3. Stockpile Sampling Program

The Director of Military Application, Atomic Energy Commission proposed to the Chairman, Military Liaison Committee that additional non-nuclear components of the type to be destroyed during the entire stockpile sampling program will be produced during regular production so as to be available for replacement of those destroyed during each sampling cycle even after cessation of production.

An exception to this proposal will exist in the B36-2 and B39-1 programs even though the programs are currently in production, since certain components have been completely produced and production tooling has been torn down and placed in storage.

In the case of nuclear components (pits and squashes) which are made inoperative as a result of the sampling program, it is proposed that they be replaced on a one-for-one basis only during the period of weapon

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production and, thereafter, any nuclear components made inoperable, in general, not be replaced.

4. Relaxation of Quality Standards for Obsolescent Weapons

The Director of Military Application, Atomic Energy Commission has proposed to the Chairman, Military Liaison Committee that weapons excess to emergency war plans, that are returned to the Atomic Energy Commission storage sites prior to scheduled retirement which is imminent, will be serviced only to the extent necessary to maintain functional and interchangeability characteristics for a given interval of time. Appearance, finish, and long-term reliability would be afforded little, if any, attention.

5. TX-46 Bomb

The Chairman, Military Liaison Committee transmitted to the Chairman, Atomic Energy Commission a letter stating that after a detailed review there no longer exists a requirement for the TX-46 bomb. The Chief of Naval Operations had concluded that the Navy has no operational requirement since the existing Mark-39 bomb is adequate to meet its needs. The Air Force had re-examined its continued need for the TX-46 in view of the recent authorization for the development of a full fuzing option (b)(1), (b)(3),4 and concluded that its requirement can be satisfied with the new version. Accordingly, in the interest of stockpile simplification and the general economy, the Atomic Energy Commission was requested to discontinue any effort directed towards the development of the TX-46 bomb.

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IV. SPECIAL PROJECTS

1. Exchange of Weapons Production Information with the United Kingdom

In early November the Atomic Energy Commission requested that the Department of Defense join in a determination as to the transmissibility of additional atomic information to the United Kingdom at a mid-November meeting in the United Kingdom to permit modification of U.K. procedures and facilities for manufacture of certain specified weapons.

The Atomic Energy Commission also advised the Military Liaison Committee of: (1) further discussions with the United Kingdom to be held in the United States following the meeting discussed above and concerning neutron initiators and other mechanical, electrical and high-explosive matters; (2) a possible future determination required to permit discussion of fractional kiloton weapons with the United Kingdom; and (3) a probable future exchange of scientific personnel between research facilities of the United States and the United Kingdom to facilitate the exchange of information on the theory and manufacture of weapons.

The Military Liaison Committee concurred in the requested determination on the mid-November meeting, requesting that the Atomic Energy Commission give early advice of the scope of future determinations required for prosecution of the exchange program with the United Kingdom and of future meetings in which the Department of Defense might have interest. A recommendation that the Secretary of Defense concur in a letter to the President requesting his determination regarding the November meeting was forwarded to the Assistant to the Secretary of Defense (Atomic

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Energy). After Department of Defense concurrence on the Atomic Energy Commission letter to the President on this matter, the President made the appropriate determination on 15 November 1958.

2. Declassification of Feed Materials Facilities

In October the Atomic Energy Commission announced an exception to present classification policy to allow the declassification of feed material facilities at St. Louis (Destrehan Street) and Weldon Spring. The Military Liaison Committee interposed no objection to this declassification.

3. Release of Radiochemical Data to the United Kingdom

The Atomic Energy Commission proposed release to the United Kingdom of radiochemical data and samples from two events of the HARDTACK series, under the authority of the Presidential determination on the first technical exchange with the United Kingdom. The Military Liaison Committee interposed no objection to this release and recommended to the Secretary of Defense that AFOAT-1 be authorized to transmit this information.

4. Access to Restricted Data Under the Access Permit Program

In view of Department of Defense experience that adequate review of reports proposed for release by the Atomic Energy Commission to access permittees requires more than the ten days specified by current Atomic Energy Commission procedures. The Military Liaison Committee requested that such reports not be released by the Atomic Energy Commission until appropriate Department of Defense comments

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are received. The Atomic Energy Commission agreed to this formal change in procedure.

V. MILITARY LIAISON COMMITTEE TRIP

The Military Liaison Committee and Staff visited the Sandia Corporation, Albuquerque, New Mexico; Field Command, Armed Forces Special Weapons Project, Albuquerque, New Mexico; Air Force Special Weapons Center, Albuquerque, New Mexico; Los Alamos Scientific Laboratory, Los Alamos, New Mexico; and the University of California Radiation Laboratory, Livermore, California on 2 through 6 November 1958.

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