

OFFICE DIARY

GLENN T. SEABORG

Chr USAEC, 1961-72

FOLDER-PAGE 010104.1

OCT 18 1961

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Dear Mr. President:

In my telephone conversation with you yesterday afternoon concerning a proposed statement relative to the USSR announcement of their intention to test a 50 megaton weapon in the near future, I indicated that I would provide you with some further information.

Enclosure 1 is a listing of the detonations conducted by the United States. The yields have not been announced or otherwise made available on those detonations which are underlined on the listing. All of these detonations have occurred at Eniwetok or Bikini, except two detonations at altitude over Johnston Island in 1958. It is noted that the highest yield detonation we have conducted was 15 megatons at Bikini in 1954. This was a surface burst -- a condition which would tend to maximize local fallout.

Also attached, as enclosure 2, are tables showing effects of a 100 megaton and 50 megaton weapon detonated at the best altitude to create the tabulated effect. These are order-of-magnitude estimates, which necessarily have been compiled on a hurried basis. The extensive radius of thermal effects from detonations in the atmosphere up to at least 50 miles altitude is particularly worthy of note. Prompt radiation from the detonation is not significant, in that blast damage and thermal damage ranges are much greater.

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The effects of fallout which might be expected are contained in enclosure 2, also. These effects vary markedly with altitude and, in an air burst of sufficient altitude that the fire ball does not intersect the surface, local fallout would be minimal. If the altitude of detonation is increased, the residence time of the fission products in the atmosphere also increases and distribution becomes more nearly worldwide. In a detonation at 50 miles altitude in the equatorial region, average residence time in the upper atmosphere would be five to ten years and would probably increase with increased altitude of burst. This would allow fission products to decay such that the intensity of fallout would be very drastically reduced over what it would be if fired at a lower altitude.

~~RESTRICTED DATA~~

This document contains restricted information as in the Atomic Energy Act of 1954. Its transmission or disclosure of its contents in any manner is prohibited.

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CLASSIFICATION CANCELLED
WITH DELETIONS
BY AUTHORITY OF DOE/OC
12/5/88
REVIEWED BY J. D. Day 12/7/88

The President
The White House

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An effect not specifically covered in the attached tables is the destruction which could be caused by under-water detonations somewhere near our coastline or harbors. It could be of particular concern because of the relative ease with which weapons could be placed in such positions (e.g., Commercial Ship) under conditions short of active war. In addition to effects of blast and fallout from such detonations, destruction from wave action could be very great -- even to the extent of a tsunami, or tidal wave. Ability of a detonation of this magnitude to create such tidal waves is not certain, but technical evaluation indicates there is a good probability under certain conditions.

8 We have discussed with our weapons laboratory directors our capabilities to fabricate and stockpile weapons of 50 megatons and 100 megatons. The 100 megaton weapon would be about 6 feet in diameter, 12 feet in length and weigh about 30,000 pounds. The 50 megaton weapon would be somewhat smaller, but would have a weight of 20,000 to 25,000 pounds. It is their view, in which I concur, that on a "highest priority" basis a weapon of either yield could be fabricated and placed in stockpile in about a year, possibly even six months. This priority effort, however, would seriously interfere with the other work of the laboratories and with our weapons testing program. In an approach which would minimize interference with other weapons programs, weapons of these yields could be fabricated and stockpiled in two years. A test of such devices at a yield of 5 megatons to 10 megatons would be necessary to provide assurance of the performance of these weapons in stockpile. Our highest yield weapon now in stockpile is **DELETED** and weighs 10,500 pounds. **DELETED**

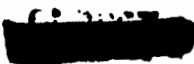
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The Department of Defense probably can provide estimates as to the capability of the USSR to deliver weapons of this size. We have no reason to believe that they could not deliver such a weapon over the United States.

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While most of the effects information included in this letter are unclassified, enclosure 1 and those portions of the letter discussing our capabilities to fabricate and stockpile these weapons, composition of our present stockpile and Soviet delivery capabilities are, of course, highly classified.

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The President
The White House

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I am taking the liberty of providing a copy of this letter to Secretary Ruck in response to his request for assistance in this regard prior to his press conference this afternoon.

Respectfully yours,

Chairman

The President
The White House

Enclosures:
2 tabulations, as above

cc: Secretary of State

Chmn ✓

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