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[redacted]

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MEMORANDUM FOR THE PRESIDENT

General Cutler has given me two memoranda embodying questions from you. Here are my replies.

Respectfully,

Lewis L. Strauss

Lewis L. Strauss
Chairman

Question A: "Suppose the United States and the Soviets were each to turn over to the United Nations, for peaceful use, X kilograms of fissionable material. The amount X could be fixed at a figure which we could handle from our stockpile, but which would be difficult for the Soviets to match." (This question was addressed to C.D. Jackson also and he concurs in the following:)

Reply: The proposal is novel and might have value for propaganda purposes. It has doubtful value as a practical move for the following reasons:

(a) Our intelligence [redacted] is not sufficiently firm as to the difference in size between U.S. and Soviet stockpiles, and we are ignorant of their current production rates and the extent of their raw material development. Our own experience on the Colorado Plateau from which only a trickle of uranium was being received five years ago would sustain the supposition that the Russians have also located and developed important ore bodies.

(b) One of our main advantages is our stockpile whereas, presumably, one of the Soviet main advantages is their apparent rapid expansion. Under this assumption, the proposal might operate in their interest rather than in ours.

(c) With the advent of the thermonuclear development (i.e., when a small number of thermonuclear bombs can produce

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the equivalent damage area of a much larger number of conventional atomic bombs), the relative importance of a stockpile of fissionable material is reduced since it is only required as a primer while quite different substances, not fissionable, support the thermonuclear explosion.

Recommendation: The proposal ought to be carefully explored, nevertheless, by the group which the National Security Council has appointed with the approval of the President to study atomic disarmament [State, Defense, and the Atomic Energy Commission].

Question B: "The President said that he would like you to estimate in your opinion what this explosion might mean in the capability of the Soviets to produce such devices in the next two or three years, assuming that they have a capability as good as our best capability."

Reply:

(a) The characteristics, (thus far detected and incompletely analyzed), of the Soviet thermonuclear explosion are not precisely comparable with any of the arrangements which we expect to test at

(b) Even when considered at its upper limit of estimated TNT equivalent, the Soviet thermonuclear test appears to have had somewhat less than one-third the yield of the shot. However, their shot may well have been to prove principle and there is no reason to think that they were necessarily trying for size. For that reason, I assume for the purpose of the following estimate that their weapons can be equal in magnitude to ours.

(c) We have absolutely no intelligence as to whether their weapon is deliverable. Their test shot was in all likelihood not an air-drop to judge from evidence. The following estimate assumes no engineering delays in designing a delivery-size weapon.

(d) The materials in their weapon are all relatively plentiful except for U-235 and Lithium 6, and the limiting factor in our opinion would be the supply of Lithium 6. Therefore, on the basis of the assumption in your question, we estimate a possible Soviet production capability of thermonuclear weapons of

Note: There have now been four shots in the current Soviet series. Only the first appears to have had any thermonuclear characteristics.
