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December 22, 1953

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~~AEC 483/48~~
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ATOMIC ENERGY COMMISSION

FILM ON OPERATION IVY

Note by the Secretary

The attached letter to the Chairman of the Military Liaison Committee is circulated for the information of the Commission.

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Secretary

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UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON 25, D. C.

December 17, 1953

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

Dear Mr. LeBaron:

It is clear that with the entrance of nuclear weapons into the realm of megaton yields, new concepts of civilian defense must be formulated which will prepare civilian defense organizations for the destruction which would follow the detonation of such weapons over any portion of the United States. That this problem was recognized both by the AEC and by the Federal Civil Defense Administration is demonstrated in part by exchange of correspondence between the Federal Civil Defense Administrator and the Chairman of the AEC (Enclosures 1 and 2).^{*} As requested by the Civil Defense Administrator, a "sanitized" version of the motion picture on Operation Ivy has been prepared for showing before the group of mayors who will be attending the Mayors' Conference sponsored by the White House on December 14 and 15.

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The film, a deleted version of the film "Operation Ivy", shows certain of the footage pertaining to the Mike Shot of Operation Ivy. (This film was shown to the Chief of AFSWP and his staff on November 25, 1953.) All information which would give any indication as to the nature of the thermonuclear reaction, including identity of reactants, or the manner in which the reaction is brought about, has been deleted from the film leaving only the clear indication that the detonation was that of a thermonuclear device. While all specific mention of the yield of Ivy Mike has been deleted from the film, sufficient information remains to permit calculation of an approximate yield by a technically qualified person. This information has been allowed to remain in the modified version since to remove it would destroy the usefulness of the film. The Commission has determined that declassification of the yield of the Mike device, Operation Ivy, to this extent will not adversely affect the common defense and security. It does not give any indication as to how such a device is designed or built or any indication as to how it operates. Moreover, the yield of Mike is well within that which our foremost scientists have often openly discussed as being possible (e.g. "a thousand times more powerful than the Hiroshima bomb" -- H. A. Bethe). In addition, the observed yield of any particular device does not in any way imply that such a device is the most powerful or least

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powerful which we are able to build; it indicates merely the power (the yield) of the specific device tested. While this declassification of the calculable yield of a specific device is contrary to paragraph 12b(6) of the Joint AEC-DOD Classification Guide, it is not considered necessary to revise the Guide at this time since such revision would apply the declassification action in this case to all other such weapons or devices.

In addition to the yield of the Mike device, the modified Operation Ivy film may also imply that the Mike device was probably not a deliverable device. This is not clear from the picture since no view of the device itself is shown. The fact that it is on the ground may be explained on the basis of the requirement for extensive scientific measurements, (e.g. the 2 mile helium box), and the size of the "house" door, on the basis of motorized equipment such as cranes. Moreover the deliverability or non-deliverability of the Mike device bears no relationship to whether or not the AEC possesses deliverable thermonuclear weapons, but refers only to a characteristic of the specific device tested.

Lastly some of the methods of measuring weapon effects are shown in somewhat greater detail than has heretofore been released. However, much information of this type is already declassifiable involving as it does instrumentation and unclassified techniques which are used for other purposes.

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At present there is no specific plan to show this version of the film other than on an "Official Use Only" basis at the White House conference of mayors on December 14. However, it is possible that another version will be proposed adapting the material of the film for use in civil defense education and the enlistment of volunteer workers. We would appreciate your comment on such an adaptation. There would of course be an opportunity for you to see and comment upon it before public release was made.

Sincerely yours,

/s/

Lewis L. Strauss
Chairman