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UNIVERSITY OF CALIFORNIA

LOS ALAMOS SCIENTIFIC LABORATORY  
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P. O. Box 1663  
LOS ALAMOS, NEW MEXICO

July 11, 1952

IN REPLY REFER TO: 12830

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there

Major Joseph A. Kelly, Jr  
Wright Air Development Center  
Wright-Patterson Air Force Base  
Dayton, Ohio

Dear Joe:

126815

I have been endeavoring to obtain some answers to your questions concerning prompt gamma, thermal and blast effects to be expected on aircraft at Mike Shot. I hope what I have to offer will be of some assistance to you.

Prompt Gamma

As you were previously informed, there will be no effect from prompt gammas at distances of interest to you.

Thermal Radiation

The present thinking on this subject is based on the results of Greenhouse "George" multiplied by two (2) so as to take into consideration the heavy dust obscuration which prevailed at that shot. While it is not possible to say how opaque this dust was, nevertheless it is reasonable to assume that the radiation was cut approximately in half - one certainly does not know that the effect is less than this.

An additional unknown factor is the effect on the thermal radiation of the reflection of the fireball from the ground. If the reflection were perfect, the energy density in the fireball should be increased in proportion to the volume of the reflected part and the intensity of the radiated energy should vary similarly. This might tend to counteract the effect of dust obscuration.

The best guess at present is to use the following relationship:

$$R = 0.4 W^{0.9}$$

This is a conservative figure but probably best for your purposes.

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BY AUTHORITY OF DOE/OC  
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REVIEWED BY (1) *J. Diaz* / 4/85  
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precise, I believe they will give you information of the right order of magnitude. I will be back here the 21st in case you want me to try to obtain additional information for you.

Yours very truly,

JHLJ:mps  
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John H. Lofland, Jr

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