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cc Dr. Wolf, NYOO (Haworth) (Blair) cc: C.L. Tyler, Los Alamos, cc: Gen.McCormack, Military Appl. cc: W.J.Williams, Prodution (Racker) cc: A. Tammaro, COO, (Zinn) L.R.Hafstad Reactor Devel.

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U. TH ANTACHMANNS DEPARTMENT OF FREES DEFLATION REVIEW

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May 15, 1949

Dr. Norrig H. Brodbury, Miretor Los Alazas Scientific Labora tory Los Alexon New Mexico

References Shills A. C. Gerves, Los Alesse

Dear Det. Readbourget

A Malaciani and method, preserve program for future atomic venuous tests has been prepared from the proposals saind that by reprocentatives of the Bational Military Detablishment and the Atomic Decay Considerion. This program has be spored by the Joint Proof See Count the Joint chiefe of mail and by the Division of Biology and Holioine. A copy of the pregnat is attached.

Dr. George V. Later has been appointed Monadiael Project Director on the staff of Dr. Alvin C. Genves, Judivision Landar, the Salantific Director. It is anticipated that in the course of this work Dr. Lefter will request the coopevention of the various biological and medical facilities.

this is to income you that De. Laker is anticarised to comduct such sugatilations as are necessary for the proper emonstice of the progenes. It is requested that you extend to his such assistance as my be reading

Anoszely yours.

MERICAN WORKSON, No Do MEDICINE, HEALTH & SAFETY Leostor Division of Dialacs

and Medicine

Beckentert Contract Traction

ces Dr. A. C. Graves, Los Alamos

(Lawrence) cc: Dr. Joseph Hamilton Dr. H. A. Fidler

copy with etter Lite Gone R. R. Queenda, USAY NOTH: This letter has been prepared for the following: 10-50565-1 Dr. Stafford L. Warren, UCLA, Dr. J.H. Lewrence, Donner Lab. 10~ asDr. Henry A. Main University of Jackester Attituppe C. H. Backer, Oak Ridges Dr. L. J. Kamprin, Breckhaven dr. DATE > attached herets Dr. H. H. Sint, Arganna

Biological Test Program for J - Division, LANL

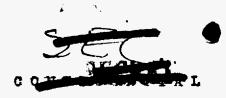
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- A. <u>Objective</u>: The fundamental objective of the biological program is to provide information which can be used in planning effective medical care for the victime of atomic warfare, and for the victime of industrial accidents in nuclear energy plants. Such planning must necessarily depend on radiobiological studies which utilize the unique radiation of the atomic explosion. A matisfuctory biological test program should provide data which can permit evaluation of atom borb rediation injury in terms of the injurious action of roomtgen, gamma and neutron radiations of a character that can be produced by conventional means in the laboratory. Adequate medical planning can not be anticipated until it is possible to translate laboratory conditions to field conditions with a high degree of certainty.
- B. The Program which has been approved by the Division of Biology and Medicine, Atomic Energy Consission, and J-Division, Los Alamos Scientific Laboratory:
 - 1.0 Animal Gology This project will provide an adequate number of animals for use at shot time. These animals will have been born and reared on Japtan island, and should then be acclimatized to to the total local environment. Suitable control studies will be performed prior to the shots. The response of the animals will be tested with 250 KV x-ray after residence in the tropics. The plan should provide the following numbers of animals for the tests: 12,000 mice of IAF; strain; 120 American for terrier dogs; and 180 Duros "hairless" pigs.
 - 2.0 Study of soute radiation injury: These studies will form a basis for a comparison of the biological response to short-burst radiation from the atom bomb with the response to ionizing radiation delivered at conventional rates.
 - 2.1 Study of acute lethality, LD50, and survivial versus does and distance. (all species)
 - 2.2 Study of histologie changes in tissues obtained by serial sacrifice after exposure. (all species)
 - 2.3 Study of histochemical shanges in tissues, as in 2.2.
 - 2.4 Study of changes in enzyme systems in tissues, as in 2.2
 - 2.5 Study of protective agents on LDm. (mice)

2.6 Study of effect of atom bosh radiation on longevity and caroinogeneis in survivors. (mice)

ec. Sid

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5.0 Study of thermal indury (pigs)

- 3.1 Study of time relationships of burn to atom bomb detonation.
- 5.2 Study of action of various components of thermal radiation and ionizing radiation in causation of burns.
- 3.3 Comparative study of changes in skin due to atom bosb burns and laboratory flash burns.

4.0 Study of hematologic changes due to atom bomb radiation (large animals)

- 4.1 Routine homogroms on all large animals
- 4.2 Study of hemorrhagic tendency in large animals with acute radiation injury
- 5.0 Study of distribution of fission products: This study dill utilize animals exposed in project 2.0.
- 5.0 <u>Biological dosimetry</u>: The response of Tradescantia, Neurospora, nice, Aspergillus and corn will be studied to provide 'checks' with the physical dosimetry.
- 7.0 Study of genetical effects of atom bomb radiation: This study will utilize the Neurospore, Aspergillus and corn exposed in 6.0; and will extend previous observations of the same sort.
- 8.0 Observations of affects of atom bomb detonation on local fauna and flore by a qualified naturalist.
- C. <u>Organization</u>: The biological test program is planned to be a cooperative activity involving representatives of the Atomic Energy Commission and the National Military Establishment. The individual studies will be performed under contract with the AEC. It is contemplated that all the biological research groups will obtain their animals from the animal colony, and will share the facilities of the biological laboratory. As a corollary, they should also share in the cost of the biological test program. The design of the majority of the experiments is such that most of the studies on the expected material can be performed in the United States.

Respectfully submitted.

George V. LoRoy, M. D. Chairman, ad hoe Committee.

7 July 1949, Chicago

