HEHF-0021

REPOSITORY MACTEC

COLLECTION Promethium Study

BOX No. 142101

FOLDER N/A

729987

September 27, 1965

BEST COPY AVAILABLE

E. E. Palmer
Radiological Physics Section
Battelle-Northwest

Dear Earl:

In considering necessary clearance to study the metabolism of Promethium-147 by determining activity in urine and feces following its administration to humans, I think specific clearance will be needed which is quite different from the use of commonly accepted radioisotopes which are used in therapy or for diagnosis in common practice.

Will you please supply me with the basic information which is available regarding the physical and physiological half life of Promethium and any data which you have on work which has been done to determine toxicity in animals. If you do not have this latter data but know who is doing the work, I will be glad to contact them. Specifically we would like to know the critical organ, body burden to produce minimal toxic effects, the type of toxic effect and any other information on the pathological effects which is available from experimental work on animals. We would also like to have your estimate of the dose in rems in humans which would be produced by the amount of the isotope required for testing.

Having this information, I will take the necessary steps to get the proper clearance to do this work here, if this seems feasible.

Sincerely yours,

W. D. Norwood, M.D.
Medical Director

WDN:vl

cc: WC Roesch
TD Mahony, M.D.

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HEHF-0021

August 22, 1966

Mr. Harry Kinney
Spencer Kinney Agency
Richland, Washington

Dear Harry:

In answer to Mr. Howard's inquiry to you about our experimental work, the following is submitted. The present plan is that volunteers will be given a single lung exposure and/or a single intravenous injection of either promethium, Pm^{143} or plutonium, Pu^{237}.

Because of the short half life of plutonium (Pu^{237}), the same individual receiving the intravenous injection will receive the lung exposure at a later date. The total dose is estimated to be 0.2 rem. In the case of Pm^{143}, because of a longer half life, different individuals will be used for the lung exposures and the intravenous injections and the individual exposure would be somewhat less than for Pu^{237}. Should we determine, as the experiments progress, that further information could be gained by giving additional exposure, we might increase the lifetime dose by a factor as much as 10 to give a maximum lifetime dose of 2 rems. However, we feel that such increase is highly unlikely. An X-ray of the back results in an individual dose of 2 rems.

The N.C.R.P. maximum permissible working lifetime dose for employees is 235 rems and such a dose is not expected to entail appreciable risk to the individual or to present a hazard more severe than those commonly accepted in other present day industries.

Sincerely yours,

W. D. Norwood, M.D.

W. D. Norwood, M.D.
Medical Director

WDN:vl

cc: HE Palmer
AR Adeline

1262628

HEHF-0021

April 7, 1967

Lionel M. Lieberman, M.D.
Occupational Medicine Physician
Division of Operational Safety
U.S. Atomic Energy Commission
Washington, D. C.

Dear Dr. Lieberman:

I am delighted with the arrangement which you and Bill Doran have made with Mr. Elliott regarding the use of DTPA in treating plutonium depositions. While we have never treated other depositions of radioisotopes at this project because the need has not arisen, we would certainly wish the privilege of doing so should the need arise since DTPA is effective in treating a number of fission product depositions.

Further investigation is needed in humans on some of these other isotopes and we would like to be approved to do this on an experimental basis. I think other AEC projects where there is potential for exposure to fission products should also have this same privilege. I will be glad to fill out the types of forms which may be necessary to seek approval for this type of thing.

Sincerely yours,

Doy

W. D. Norwood, M.D.
Consultant, Hanford
Occupational Health
Foundation

WDN:vl

cc: WT Doran, M.D.

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