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NOTICE

**CERTAIN DATA
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BY B.G. O'Meara
1/31/73

F.A.R. Stainum

Richland, Washington
December 15, 1948

This document consists
of 2 pages #17 of
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200 AREAS CONTAMINATED PARTICLE DISCHARGE

Your Document HW-11794 requires the Health Instrument Divisions to define the permissible amount of discharged particulate activity with reference also to the quantity and rate of deposition as well as to the single particle activity. This is not considered by the Health Instrument Divisions to be a necessary or sufficient requirement for the development of design factors required for immediate remedial facilities or for the long-range program applicable to possible subsequent installation.

It is requested that you furnish the Health Instrument Divisions with a complete quantitative description of the so-called spectrum of the particles as currently emitted. This requires a size and radioactivity distribution of the particles. In order to simplify your problem in the presentation of this data, it will be satisfactory if the information is made available for all particles between diameters of 1/10th micron and 30 microns. When this information is made available, the Health Instrument Divisions will attempt to furnish a reasonable estimate of the factors of improvement required in the various classes of radioactive particles. A realistic solution cannot be completed however until you also define the chemical and physical state of the emitted particles in the various size ranges.

When this information is fully developed, it will be possible to utilize existing biological information in some cases, to supplement it by rapid pilot experiments in other cases, and so to arrive at a firm value for the necessary improvement factors. In the meantime, a logical position for the Health Instrument Divisions is as follows:

1. The emitted particles may present an inhalation hazard.
2. If they do, the permissible concentration of such particles in the atmosphere may be one or two times the actual concentration of radioactive particles in the atmosphere, if the range of size and activity is reasonably comparable...

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Calculations and measurements of these features are currently being made. It is obvious that the current concentration of particles greatly exceeds the natural concentration in the atmosphere, so that immediate remedial facilities, in addition to the present facilities, are required, if there is any hazard at all. It is furthermore a reasonable assumption that the best possible facilities will not reduce the concentrations of artificial particles to the level of the natural background. On this basis, it would appear to be in order to proceed with design on the basis of best possible removal of particles of diameter down to $1/10$ micron.

H. M. Fisher

MANAGER

HEALTH DEFENSE DIVISION

HM Fisher: snc

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