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STANDARD FORM NO. 64

Office Memorandum • UNITED STATES GOVERNMENT

File - AO/M

TO : Richard Hirsch, OCB Staff Representative

DATE: July [illegible], 1954

FROM : Morse Salisbury, Director
Division of Information Services, AEC

SUBJECT: IODINE 131

SYMBOL: IS:MS

Attached is a draft for a brief section in the forthcoming Semi-annual Report of the Atomic Energy Commission to Congress making reference to recovery of Iodine 131 in biological specimens following the Pacific tests. This was discussed earlier at a meeting of the Committee on Coordination of Nuclear Energy Projects and Related Information Programs.

We suggest that this be circulated to the members of the Committee. Any comment to be useful should be in our hands by July [illegible].

OCB File 55

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Fall-out in the United States

Following nuclear detonations, radioactive debris is distributed by normal air currents over large areas, and with sufficiently sensitive instruments may be found to encircle the globe. Small amounts were deposited widely over the United States during the Pacific tests and in some areas resulted in transitory rises of the normal background radiation levels.

Transportation of the radioactive materials to the United States took only several days. Thus some of the shorter half-life radioisotopes, such as Iodine 131 (8-day half life), were still present in the fall-out. Although the amounts were biologically insignificant, it was possible, by special techniques, to demonstrate radioiodine in the thyroid glands and in the urine of grazing animals. Extremely minute quantities of Iodine 131 were also detectable in the urine of some humans for a short time.

The radioactive isotopes to be found normally in the body are potassium 40, carbon 14 and radium 226. The radiopotassium and radiocarbon are distributed throughout the tissues while the radium is almost entirely located in the skeleton. In addition to this internal irradiation, man is subjected to cosmic rays from without and to the gamma rays from radium in the soil. To this natural exposure, the radiation from bomb products is added. The point of interest in terms of health lies not in the mere presence of radioisotopes, but in the amounts and more specifically in the quantity of radiation doses delivered by these radioisotopes. The levels of activity from fall-out, outside the area surrounding the Pacific Proving Grounds, have been far less than any required to produce detectable injury either from the radioisotopes within the body or from external radiation.

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