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# Office Memorandum • UNITED STATES GOVERNMENT

405638

TO : C. L. Dunham, M. D., Director  
Division of Biology and Medicine

*R* October 15, 1958

FROM : Gordon M. Dunning, Chief, Radiation Effects of Weapons Branch  
Division of Biology and Medicine

SUBJECT: IODINE-131 MEASUREMENTS OFFSITE DURING OPERATION HARDTACK PHASE I

SYMBOL: DBM:REWB:GMD

MILITARY RESEARCH & APPL - 7  
*11/29/58*

The USPHS offsite radiological monitoring during Operation Hardtack Phase I on the islands of Rongelap, Wotho, Utirik and Ujelang is the first time they attempted to make measurements of iodine-131 by drawing air through a cartridge filled with activated charcoal.

In a draft of their preliminary report it is stated, "These results indicate that a significant internal exposure might occur to populations in off-site areas subject to fallout as a result of the inhalation of I-131. They further indicate that an off-site sampling program may not be complete unless it does include a method for determining I-131 levels in the air."

Since this will be a public document I can foresee the above statements causing undue concern by some readers. The first sentence is not fully evaluative and could leave a scare in the minds of readers. The second sentence might open the AEC to the criticism of why had we not done this during past operations. I called Mr. Ernest Anderson (who compiled the report) and discussed the problem with him. He agreed to rewrite the paragraph.

For your information the collecting point showing the highest iodine-131 air concentrations, outside of the Proving Ground, was Rongelap. The highest sample collected was 125.5 micromicrocuries per cubic meter of iodine-131 averaged over the 24 hours that it was collected. The total exposure to the thyroid from iodine-131, based upon the USPHS measurements, over the period of time of collection (~3 months) that encompassed most of the fallout amounted to about 20 millirads. This may be compared with the external gamma exposure for the same period of time of about 285 millirads.

cc: Dr. Shilling  
Dr. Western

CONFIRMED TO BE UNCLASSIFIED  
BY AUTHORITY OF DOE/OC

*Wilbur A. Strauser 5/19/81*  
REVIEWED BY *W. T. Trench* DATE *6/16/87*

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MILITARY RESEARCH + APPLICATION

Foldest HARDTACK 1958

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C. L. Dunham, M. D., Director  
Division of Biology and Medicine

October 15, 1958

Gordon M. Dunning, Chief, Radiation Effects of Weapons Branch  
Division of Biology and Medicine

**IODINE-131 MEASUREMENTS OFFSITE DURING OPERATION HARDTACK PHASE I**

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SURNAME ▶	GMDunning:em					
DATE ▶	10/15/58					