

~~RESTRICTED DATA~~  
~~RESTRICTED DATA~~

RG 181 ACFT (Y) NRDL

3-900  
EL/ibw

3-100 *A*

181-60 B 269 Box 1014 19 JUL 1954

181-60 B 269 Box 1014 19 JUL 1954

ALL CASTLE 1954

3-120

From: Commanding Officer, U. S. Naval Radiological Defense Laboratory  
To: Chief, Armed Forces Special Weapons Project  
Attn: C. M. Eisenhour

3-140

Subj: Gamma Spectrum Data from Fall-Out at Operation CASTLE; forwarding of

3-141

Ref: (a) BuShips ltr 590/1-5(348) Ser 348-90 of 30 Jun 1954  
(b) Discussion between R. L. Mather, USNAVRADLDEFLAB and  
LCDR J. K. Coates, BUSHIPS, on 18 June 1954

3-200

Encl: (1) Memo MR-NEB-151 fr R. L. Mather to C. A. Sondhaus of 17 Jun 1954

3-210

*The Bureau of Ships*  
1. ~~Enclosure (1)~~ in reference (a) requested U. S. Naval Radiological  
Defense Laboratory to forward the currently available gamma spectrum data  
from fall-out which is in terms of gamma energy or absorption values.

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2. The data in enclosure (1) are preliminary and are subject to further  
analyses and modification prior to publication. These data were prepared  
by Dr. Mather for Mr. Sondhaus who, with Dr. Bond, was trying to evaluate  
the dosage received by the natives on several islands near this explosion.  
Mr. Sondhaus, who collected these data, has attempted to calculate the  
spectral distribution of the radiation received by the natives to include  
ground scatter. His purpose was to determine whether the readings of the  
gamma-meter used could have been in error due to the gamma-energy spectrum.  
His result indicated a possible error of two per cent from this source.  
He and Dr. Bond are in the Washington, D. C. area at this time, and have all  
copies of his report with them. The same data in graphical form, plus  
additional data, are in the hands of Dr. Eugene Cronkite at Naval Medical  
Research Institute.

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3-700

3-710

3-900 *Box*

3. Because of manpower and equipment shortages, some of the time-consuming  
checks of the equipment and techniques could not be made and there are  
inconsistencies in the data that indicate the  $\pm 5$  per cent accuracy figure  
for the individual line intensities (not the percentage intensities).  
For this preliminary data reduction, no attempt was made to identify the  
isotopes present; everything that appeared to be a gamma line was evaluated.  
If knowledge of the isotope spectra is obtained, there may be a realignment  
of spectral line energies and intensities, but not of such a magnitude as  
to affect Mr. Sondhaus' conclusions.

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Downgraded ~~SECRET~~  
when enclosure is removed.

0010861

3-950

This is copy 4 of 1 page(s). R. A. HINNERS  
Director

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12ND 4589 (Rev. 4-53)  
NAVY-MI DPRO:2ND

Initials hereon indicates that the person initialing has read and approved the  
correspondence and has no recommendation to change therein.

S—signature  
R—review  
I—information

*All Castle 19 Jul 54*

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CLASSIFICATION CANCELLED  
BY AUTHORITY OF DOW/OC  
*J. Diaz Jul 91*  
FOR SPA SUSHAK TO  
DOE MA-225 3-12-90