SECRET

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From Access # 326-78 Box 4 Folder = Military Research and Application 1960 & HARDTACK

November 28, 1960

Dr. Lester Machta, Chief
Special Projects Section
U. S. Weather Bureau
U. S. Department of Commerce
Washington 25, D. C.

DEPARTMENT OF ENERGY DECLASSIFICATION REVIEW
SINGLE REVIEW AUTHORIZED BY: Senisgalli 3/31/94
REVIEWER AND NAME: R.R. Schmidt
DATE: 4/1/94
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1 CLASSIFICATION RETAINED
2 CLASSIFICATION CHANGED TO
3 CONTAINS NO DOE CLASSIFIED INFO
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5 CLASSIFICATION CANCELLED
6 CLASSIFIED INFO BRACKETED

Dear Lester,

Your request for information on W-181 production during HARDTACK and for cloud height information for the Teak and Orange shots has been passed on to DMA via Enclosure (1) to this letter. We already have the W-181 production figures for the LRL HARDTACK shots which were obtained from R. H. Goeckermann, Chemistry Division, LRL, in a letter to Hal Hollister dated April 27, 1959 which reads as follows:

"The following is the final corrected data on atoms of Rh102, W181, W185, W187, and W188 produced in LRL Hardtack surface shots.

Shot	Total Yield(kt)	Rh^{102} $\times 10^{-20}$	W^{181} $\times 10^{-23}$	W^{185} $\times 10^{-23}$	W^{187} $\times 10^{-22}$	W^{188} $\times 10^{-21}$
Fir	1360	200	430	370	790	670
Sycamore	95	0.013	7.7	14.5	85	7
Maple	194	9.1	0.031	0.032	0.15	0.015
Aspen	319	57	0.80	1.04	4.3	0.90
Redwood	412	61	1.00	1.19	4.3	0.97
Hickory	13.4	29	- -	- -	- -	- -
Cedar	225	76	97	90	215	60
Dogwood	397	52	- -	- -	- -	- -
Poplar	9300	220	59	105	326	780
Juniper	63	2.8	- -	- -	0.030	- -
Olive	202	38	0.005	- -	- -	- -
Pine	2000	53	450	410	840	390

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Since it may be of interest to you, I enclose as Enclosure (2) a copy of an unclassified TWX from George Cowan, LASL to Col. O'Brien, DMA, dated July 8, 1960 on rhodium production during HARDTACK, and a SECRET letter from General Starbird, DMA to Col. Key, DASA, dated July 15, 1960, concerning rhodium 102 and Tungsten 185 production of both Livermore and LASL shots as Enclosure (3). We have in the files earlier information on HARDTACK W-181, W-185, and 187 production which does not agree with the final estimates given in the Goeckermann letter.

Sincerely yours,

Harold A. Knapp, Jr.
Fallout Studies Branch
Division of Biology and Medicine

Enclosures
(1) Memo (cc) Dunham to Starbird, 11/25
(2) TWX
(3) Memo Starbird to Col. Key

Memo to Starbird 11/25/60
copy 5A

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