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RADIATION LABORATORY  
SAN FRANCISCO NAVAL SHIPYARD  
SAN FRANCISCO, 24. CALIFORNIA

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2 October 1947

*R. W. Lancaster - CMC0*  
*1-27-54*

MEMORANDUM

*P. Hershfeld*

From: D.F. Mastick  
To: Cmdr. J.J. Fee  
Lt. E.C. Vicars  
Subj: Radiochemical Assay: Samples from tanks on the U.S.S. Independence  
CVL - 22, results

1. Fourteen tanks on the U.S.S. Independence containing a total of  $1.81 \times 10^7$  gallons of sea water were sampled. Having had a prior indication of a very low activity level in this water, we handled these samples in the most expeditious fashion. Thus, fourteen new milk ashing dishes were used to contain the residue from the evaporation of a 10 ml. aliquot from each sample. Having noticed that the new dishes exhibit the same level of incorporated activity ( $\pm 5-10\%$ ) we chose a mean value from previous accurate determinations, in order to eliminate at least eight hours of checking these dishes.

2. It is evident from Mr. Hershenson's accompanying memo that the activity observable in these residues is nil within the limits of error imposed by the experimental methods used. However if one were to assume the greatest positive value (0.015 c/s per 10 ml.) were indicative of the mean activity of the  $1.81 \times 10^7$  gallons of water, we readily calculate a total of  $\sim 400$   $\mu$  curies. It is difficult to orient this with respect to the AEC tolerance level of  $5 \times 10^{-4} \mu$  curies/ml. of water as this shipboard water will be diluted immediately upon entering the Bay. We may assume factors of dilution over a very wide range. At any rate,  $400 - 1.81 \times 10^5 = 20 \times 10^{-4} \mu$ /gal. or essentially  $5 \times 10^{-4} \mu$ /ml. Thus the water in the most contaminated tank and not assuming dilution by less active water in the other tanks or by the Bay waters, is about a factor of 1000 below AEC tolerances.

3. On the basis of this information, it is recommended that the Radiological Advisory Committee be requested to consider it a safe procedure to dispose of this water by pumping into the Bay. It is noted that we are not worried about the Pu content as it is probably the order of  $5 \times 10^{-8} \mu$ g/ml. under the most assumed conditions.

CC:  
Lt. Cmdr. R. Conard

D.F. Mastick  
Acting Head Chemist

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