

PERSONAL & CONFIDENTIAL

S. C. Barnett

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J. C. Hart

Contaminated Coca Cola Bottles

On two occasions during the past two weeks, members of the Radiation Survey Branch have been checking empty Coca Cola bottles at random in order to determine whether or not the bottles are becoming contaminated and thus constituting a health hazard when the bottles are refilled at the Knoxville Bottling Works. The findings show conclusively that a potential problem is indicated. In one case, a bottle was found to be reading 385 c/m by smear evaluation which is 183 counts over the permissible value for material leaving the X-10 Area.

R. L. Clark, assigned to the 100 Area, on finding contaminated bottles on top of the pile discussed this with supervision there and immediately effected a regulation prohibiting bottles from being taken to this location. Clark further reported that supervision in the 100 Area was more than willing to go along with the idea of changing to cup-dispensing type machines.

As you know, the smear test was designed to determine whether or not contamination would rub off a surface and does not constitute an accurate quantitative measurement. When a smear is taken and no contamination found on the smear tab, it is reported as "no evidence of contamination" and does not necessarily mean that contamination was not present. It is obvious, however, that when we do obtain counts by this method, we have positive proof that contamination was present on the surface and could be removed. Removable contamination does, of course, increase the health hazard.

According to present practices, we do not consider beta-gamma counts under 20 c/m or alpha counts under 10 c/m as being significant. Consequently, counts under these values are ignored.

No particular effort was made to select bottles from known contaminated areas since we wanted a random check which would give us some idea of the percentage of cases where bottles do become contaminated. Bottles were picked up from laboratory rooms, offices, at the Coca Cola dispensing points, and at points along the streets and out-doors areas.

The tabulation below will give you a rough idea concerning the possibilities of this situation:

<u>Area Covered</u>	<u>No. Bottles Checked</u>	<u>Percentage Contaminated</u>	<u>Remarks</u>
100	81	7.4%	Beta-Gamma reading from 20 to 141 c/m
200	19	26.3%	3 Alpha reading 23 c/m, 19 c/m and 10 c/m 2 Beta-Gamma reading 30 c/m and 37 c/m
706-A	26	7.7%	2 Alpha reading 75 c/m and 25 c/m
Tank Farm	7	28.6%	2 Beta-Gamma reading 383 c/m and 40 c/m
Total	133	11.3%	

Although we are not in a position to determine how much of a health hazard exists here, it would be our opinion that we should take immediate steps to close the door on this form of contamination transfer.

Original Signed By

J. C. Hart

JCH:os

cc: K. Z. Morgan