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STUDY OF RECENT ENIWETOK BADGE RECORDS

REFERENCE: H-1

For some time there has been strong reason to suspect that radiation exposure at Eniwetok, as estimated from film badges, has been over-estimated. It was suspected that this situation arose on account of the impossibility of providing valid control blanks, because of the variable amount of heat or moisture fogging that occurred there on film badges worn in the absence of gamma radiation.

To put this suspicion to a statistical test, there is presented below a Table comparing the badge results for unexposed and possibly exposed men. The comparison covers January, February, March 1950, during which period most of the grading work on the Shot Islands occurred. The unexposed badges are those worn by a group of about 100 men known to have spent practically all of this period on Parry Island. Each badge was worn for a period of approximately one month.

There is better than a 30% probability that the tabulated numbers, or more discrepant ones, would occur from purely random sampling.

From a statistical viewpoint there is therefore no evidence that anyone received measurable gamma ray exposure during this period.

The statistical test is, however, quite weak for the few cases of relatively large apparent exposure, and we are certainly not justified in concluding that no radiation exposure occurred. It is quite possible that the five highest values represent real radiation exposures. They are, however, well within the monthly permissible level, 1.2 roentgen.

We are justified in concluding that gamma radiation was a negligible factor in the sizeable number of apparent exposures in the intermediate region (i.e. those interpreted as in the range .06 - .10 roentgen, or possibly somewhat higher).

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