

Footnotes to February 1972 Brief Report  
by Dr. Mancuso

- 1 - The criteria for matching the 1% work sample have not been fully delineated yet. Those proposed earlier were not adequate. It remains to be seen whether adequate matching can be developed.
- 2 - We don't know yet whether 2 matched controls for each employee will improve the analysis enough to justify the additional large expenditure.
- 3 - It is unlikely that different control groups will be consistent. Furthermore, since there is no control group that we have reason to believe is perfect, if there are differences between the groups, we will probably in practice accept the control that best matches our study population. This would be a reasonable procedure if the comparison were made with the unexposed worker population.
- 4 - Since we have no intention at present of implementing such studies, they are not worthy of mention at this time.
- 5 - The 800,000 controls is an overstatement. We do not know whether we will authorize the study of that number. The number of controls that can be used for analysis at present is in the neighborhood of 20,000. I don't know yet how many others are in various stages of processing.
- 6 - The paper was presented at the meeting and is now being prepared for publication. A draft will be submitted soon to the members of the Advisory Committee. After revision on the basis of their comments, Tom said that he will send a copy to me for my unofficial comments before sending it to the publishers.
- 7 - This is the first that I have heard of a monograph.
- 8 - The hooker here is that working toward ultimate sensitivity is meaningful only if the groups are entirely comparable. If not, the study may wind up measuring fine differences between the groups that are unrelated to radiation.
- 9 - Much of the radiation exposure data is computerized. However, a considerable part of the data, especially from earlier periods, is unavailable or, if available, is of such poor quality that it may be used only to define groups "at risk" rather than groups having specified ranges of radiation exposure. The status of the radiation exposure data remains to be explored.
- 10 - The statistical methodology probably needs additional development.

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- 11 - The statistical analyses can be performed economically repeatedly because they involve only computer time. However, the updating of the data each year may not be quick or economical because it will involve putting long lists of names through social security and then going to the State Departments of Vital Statistics for the death certificates on those individuals certified as dead by social security. I don't have a good idea yet of how much the cost will be when the groups are complete.
- 12 - This statement is only partially true in that only some of the old data is usable for study of the radiation effect on these populations.
- 13 - The findings to date are minimal. Although there is much merit in the work performed to date, the soundness of the study remains to be proven.
- 14 - If the assumptions include that of precisely comparable out-of-plant groups, it may be impossible to satisfy.
- 15 - This is gobbledygook because good data is not available for anywhere near 500,000 employees. The sensitivity projected is not a meaningful goal within the limitations of human studies.
- 16 - I don't know how additional criteria of health would increase the sensitivity of the study, but I haven't discussed this with the investigator. I would think that additional criteria would increase the scope but not necessarily the sensitivity of the study.
- 17 - The study probably will not confirm or refute any important hypotheses but should permit a statement to the effect that a careful study of workers in the industry has disclosed no harmful effects of radiation (if the results are negative as they are likely to be). That statement, supported by appropriate documentation, would seem to justify the existence of the study. A corollary statement could presumably be made about other similarly exposed populations.
- 18 - The need to expand the study to all principal facilities is very doubtful.
- 19 - Strictly speaking, the results are not only unique to these facilities but also to the past period during which the data was collected since these plants are not static operations. With certain exceptions, we intend to generalize the results in a crude manner not only to the future at Oak Ridge and Hanford but also to the other AEC plants.
- 20 - The case for collecting data from all plants has not been made yet. Moreover, the existence of usable radiation exposure data in all plants is not a certainty.

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