EPIDEMIOLOGIC STUDIES OF CARCINOGENESIS BY IONIZING RADIATION

JOHN W. GOFMAN and ARTHUR R. TAMPLIN
LAWRENCE LIVERMORE LABORATORY and
UNIVERSITY OF CALIFORNIA, BERKELEY

1. Do we really need human epidemiologic data for pollutants?

In general, we should like to express our lack of sympathy for the expressed purpose of this Symposium, which is the planning of epidemiological studies for the evaluation of effects of major pollutants on humans. Carcinogenesis and leukemogenesis are two particularly worrisome long term effects which deserve consideration with respect to any pollutant. From our experience with ionizing radiation as a pollutant we have derived some lessons that we believe are extremely important to understand if society is to avoid paying a very high, probably unacceptable, price for the introduction of environmental pollutants. One such lesson centers around the prevalent notion that human epidemiological evidence concerning carcinogenesis should be required *before* technological promoters are willing to admit the serious potential hazards of a pollutant. Ionizing radiation is a classic example of this fallacious notion.

In our opinion it is *neither* appropriate *nor* good public health practice to demand human epidemiologic evidence to evaluate carcinogenic or leukemogenic hazard of a pollutant. First, in a civilized society, there *should never* exist an ideal set of human epidemiologic data. What epidemiologic data do become available are always subject to serious reservations with respect to equivalence of controls and exposed groups upon variables other than the specific pollutant variable under study. The net result is that controversy persists interminably. Peculiarly, but not unexpectedly in the face of promotional bias, the presumption is all too commonly made that, where uncertainty exists about the magnitude of effect, it is appropriate to continue the exposure of humans to the potential pollutant. It would indeed be sad if this Symposium helped contribute to this pernicious philosophy, which can only be described as that characteristic of a society bent upon ecocide in the name of ostensible technological progress.

In the case of radiation as a pollutant, we may consider some of the major epidemiological samples that have become available for study and relate the reservations that have been raised concerning acceptance of the results derived

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