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I have your letter of February 15th and of course resonate with the concerns that you have expressed there.

The book "Poisoned Power" was already obsolete and was to some extent already misleading at the time that it was published as far as its reference to federal radiation standards are concerned. I do not know what motivated the AEC to adhere for so long to the .17r standard on the one hand while many of their other operational standards were already de facto far more stringent. However, partly in response to the Goffman-Tamplin campaign, the AEC did long since revise its posture from requiring "the smallest practical amount of radiation" to a numerical figure far smaller than the .17r standard. This is expressed in somewhat complicated terms but the net result is that the current radiation standard for many years has been a small percentage of the already existing natural background.

In fact, the controversy over this question has gradually receded - one might say it took some time for Goffman and Tamplin to concede that they had won their argument! - and the principal issue at controversy at the present time of operation of nuclear power plants, but rather the hazards of catastrophic accidents which of course the regulations absolutely forbade! The question is instead the reliability of the safety engineering design in assuring the compliance of nuclear energy plant operation with accepted standards, and I hardly need tell you that the subject is not only a complex one but is not really within the domain of biological as opposed to engineering expertise.

I have, however, attached some other comments that will help tell you something of my position on the matter.

With respect to your other questions, I do not think there is any serious dispute than any amount of radiation is harmful but the issue is the level of harm. As noted in one of my attached articles, it has seemed to me that the only sensible standard of judgement on this point was a comparison with the natural background or rather with the fluctuations in natural background that we see in our daily lives. Considering that

2/21/75

at different altitudes we experience more than a two-fold variation in the background, for example comparing living in San Francisco or in Denver, it is difficult for me to believe that consistent people will ~~make~~ a great deal of fuss about variations amounting to a few percent of that same figure. You will note furthermore that my own estimates of the quantitative hazard, however clumsy the translation into dollar amounts will be, would also suggest the relative triviality of those few percent fluctuations by comparison with many, many other factors that influence our health.

With respect to your number three, the figure of .17 rad is no longer relevant.

With respect to four, I do not really think that genetic damage plays a very large role in the current controversy. Even in consequence of the core melt down kind of catastrophe, and making the worst possible assumptions about the magnitude of such an occurrence, the overwhelming route of injury to man would be the increase in the incidence of cancer as a result of intake of radioactivity into somatic tissues.

Number five. My suspicion is that if we knew much more about radiation effects, we probably would allay our gravest concerns from contamination from nuclear power reactors, and indeed very likely could undertake remedial measures on many of the long-term delayed consequences which would further lessen the risks. So indeed one wishes that we did not know much more and could proceed more comfortably along these lines. Meanwhile, we really must be quite conservative and use our present information to set upper and lower bounds to the level of health damage that might result from radiation exposure and it is these kinds of numbers that we are discussing. Keeping in mind again that we are inevitably and constantly exposed to at least .1 r per year as the natural background, I think we can be reasonably confident that we do know the outer bounds of harmful effects. So the questions really are not biological ones but rather the engineering issue of the safeguards against catastrophic accidents.

I certainly appreciate getting an intelligent inquiry such as yours, and I wish I knew where I could point for a reasoned statement of the controversy that actually attacked the issues that you raised and stated them carefully from the variety of viewpoints that pertained today. I certainly hope that during the next months, particularly in response to the publication of the Rasmussen report, that there will be more readily available information for intelligent judgement. I am enclosing two references that are obviously quite polarized but which may be helpful to you in making up your own mind.

Sincerely yours,

Joshua Lederberg
Professor of Genetics

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Enclosures