

lion then this standard purports to say that a man can be exposed 8 hours a day to five parts per million for 5 days a week, for 40 to 45 years. Now, maybe this will help you to get an impression of the kind of thing that makes me say that one and a third parts per million of sulfur dioxide is toxicologically a pretty low concentration, particularly when the one and a third was only a peak value seen very briefly at one station, while the average concentration was below this and the whole duration of this episode was about 5 days.

So, there is some kind of a quantitative anomaly between what are really, toxicologically speaking, low levels of these things as compared with the very drastic outcome, 4,000 people dying, which is a pretty severe response.

Mr. DADDARIO. Dr. MacFarland, I think this has some bearing on it. The New York Times this morning has an article on emphysema and the effect of air pollution. I would like to pass these to all of you just so that you can take a look at them, in case you have not seen the article. The article says:

Emphysema, the lung disease that often suffocates its victims, strikes earlier and pushes them faster toward death in air-polluted industrial cities than in nonindustrial, unpolluted communities, experts said here this week.

It goes through to prove these points and concludes then by saying:

There was more emphysema in St. Louis than Winnipeg, it was evident at an earlier age and appeared to progress more rapidly.

It goes on:

The importance of environmental pollution is suggested by the fact that the incidence of severe emphysema in smokers is four times as high in St. Louis as it is in Winnipeg.

Taking what you have said and extrapolating this into the overall situation, it indicates that there are varying degrees of severity, that people with a predisposition, with a disease such as emphysema, can be more affected in an industrial area. I would think that people who do not have the predisposition are also in a more dangerous situation as a result of finding themselves in a highly industrialized area where high pollution percentages exist.

Dr. MACFARLAND. Yes, but this needs to be analyzed a little further. The people who succumb, or the bulk of the people who succumb in this kind of disaster, are the respiratory cripples. These people have one foot through the door anyhow.

Mr. DADDARIO. So do we all.

Dr. MACFARLAND. It takes a very little to push them over. If you were to place a normal individual, a person with adequate pulmonary function, we will say, into this kind of an atmosphere, this is not going to bother him at all. Suppose that a normal person lives in this kind of atmosphere over a long period of time—suppose he grows up in this industrial area and he begins to develop the early changes, which if they go on to completion, will lead to emphysema and other respiratory diseases. He is not a normal, healthy individual, he has already suffered the beginnings of a process that will result in overt disease ultimately. If you put this man in a heavily polluted atmosphere such as may occur in one of these incidents, you would anticipate that he would tend to be adversely affected more