Dr. LIEBERMAN. Let me state it this way, Mr. Chairman: The development and establishment of these radiation protection guides and limits are based on very extensive biomedical research. The establishment of these standards has included and involved groups that are outside the AEC—the National Commission on Radiation Protection, the International Commission on Radiological Protection and Measurement—and are based on the best medical evidence available.

I might also say—this is a statement which has been made by others—that there is perhaps as much or more known about the biomedical effects of radiation than almost any other potential contaminant that we are dealing with because of the extensive amount of work which has been done. So, these radiation protection guides and the maximum permissible concentrations which are utilized in regulating and controlling the industry are based on rather extensive background information and experimental work.

Having had those protection limits or guides established, the capability for measuring these concentrations of radioactive materials in the environment has very high resolution limits so that we can measure down to very low levels. The number I quoted is really the result of the detailed monitoring which has taken place in the vicinity of operating plants. So, I think we can say, and there is data to support the conclusion, that the discharge or release of radioactive materials to the environment has not come very close—the number I used was less than 10 percent—to these radiation protection limits.

Mr. DADDARIO. Recognizing all you say, that the experience you have accumulated and the best information you have allows you to come to this conclusion, you would not, however, stop any research in this area to come to exact determinations upon which you could then say this is what the situation in fact is. We have not, as yet, reached that point.

Dr. LIEBERMAN. No, sir. I think there are still questions to be answered with respect to whether there is a triggering mechanism or whether there is a threshold below which there is no effect or whether really the effect does start from any amount of radioactive materials. There is a very significant amount of work still going on at various laboratories on both the somatic and genetic long-term effects of radiation.

Mr. DADDARIO. I think it does help if we could understand at this moment the best information we have allows you to come to this conclusion, and that we feel it is reliable, but that we are continuing research. We are not just taking these figures as they stand. It is our ultimate objective to have this refined to the point where we can be positive because of research that this is, in fact, a safe level?

Dr. LIEBERMAN. Yes, there is continuing extensive research in these areas.

The growth of the industry, obviously, has precipitated questions on our capability for managing the wastes that would be associated with this growth. The major considerations in this whole area of waste from the growing atomic energy industry is related to wastes that are associated with the reprocessing of the irradiated fuels. Back as far as 1959 and before that, as you indicated, Mr. Chairman, the Joint Committee on Atomic Energy had extensive hearings on this