

safety but industrial safety as well, and I am pleased to say this works back and forth, because one becomes more safety conscious.

We have had to develop standards and criteria—for example, radiation protection guides by which these operations could be measured.

We have done this throughout the years looking to our national laboratories, looking to our contractors, and we have actually developed through this procedure a very major competence in essentially all the scientific disciplines that relate to environmental questions. It has cut across the lines of chemistry, physics, biology, geophysics, engineering, medicine, and so on.

Although this has been a record of the past, I think none of us can relax in any way or can rest on our laurels. We recognize these are continuing problems. As you will hear later, the role of nuclear energy in the civilian electric power economy is growing strongly and, therefore, one needs to be looking at the potential problems for the future.

Thus, it is necessary for us to keep on top of the problem, to anticipate new developments, to look for any areas in which we may have overlooked something in the past. I think you will find from Dr. Lieberman's discussion with you this morning that we have had a tremendous amount of experience and are continuing a very strong research and development and operations program to meet these needs.

With that, Mr. Chairman, I think it might be well if we go directly to Dr. Lieberman. We will both be here for whatever questioning you would like.

Mr. DADDARIO. Fine.

Will you proceed.

Dr. LIEBERMAN. Mr. Chairman, I am pleased to appear with Dr. Tape before your committee.

I might indicate some of our associates who are here. Walter Belter, Chief of the Environmental and Sanitary Engineering Branch, Division of Reactor Development and Technology; Dr. David Ballantine, who is in our Isotopes Development Division; and Dr. Nathaniel Barr, technical adviser to our Assistant General Manager for Research and Development. We might call on them to amplify or clarify certain points that might come up during the discussion.

Mr. DADDARIO. You may do so at any time you wish.

Dr. LIEBERMAN. Thank you, sir.

With the committee's permission, rather than reading the statement which has been prepared, which I hope can be put into the record, I would propose to try to summarize this statement rather quickly; and then, following that, I believe it might be useful to the committee to elaborate on some of the things that Dr. Tape has already indicated in the way of observations that occur to me as a result of some 19 years' association with the environmental aspects of this industry. If I have your permission to do that, Mr. Chairman, I will proceed.

Mr. DADDARIO. You may. Your full statement will be entered in the record.

Dr. LIEBERMAN. First I will point out that 1967 has marked a year of great expansion in the nuclear power industry. You have been given a map which indicates the nature of the geographic distribution of this expansion. By the end of the year 1967, there were something like 50,000 megawatts of electrical capacity committed.