

instrumentalities devoted to these problems ought to be scrapped and the problems forgotten. I want to warn most earnestly against re-deploying a laboratory before the problem around which the laboratory was originally mobilized has been resolved. You notice I don't use the word "solve", but "resolve".

I dwell on this point because in so many of the discussions of re-deployment the atomic energy laboratories are given as examples of establishments that have worked themselves "out of a job." In point of fact, nuclear energy development is entering a completely new and unprecedentedly hopeful era: The development of the really economical breeder reactor. Until this goal has been reached, nuclear energy has not achieved its goal, nor has the nuclear research community come close to working itself out of a job. The cheap breeder reactor represents a permanent solution to the world's energy problem. Insofar as a cheap, ubiquitous, and inexhaustible source of energy can serve to extend mankind's natural resources indefinitely, it is clear that the achievement of this goal is one of the most important long-term jobs of our society. Any talk of dismantling or massively re-deploying the Government laboratories responsible for getting on with this job is, in my opinion, irresponsible and mischievous.

Mr. DADDARIO. I hope that is not a charge.

Dr. WEINBERG. No, I didn't have any Members of Congress in mind when I wrote that. It is rather some speeches I have heard recently by people other than Congressmen.

Having made this disclaimer, I shall describe the way in which the Oak Ridge National Laboratory has partially re-deployed into several new areas, and I shall try to draw some general conclusions from our experiences in re-deployment. I am submitting for the record a short history of ORNL, but in this statement I shall refer only to those aspects of our history that are relevant to the matter of re-deployment.

In 1955 I wrote an article, "Future Aims of Large Scale Research," in which I pointed out that the job of creating a new energy source from fission, though very difficult, was finite. Eventually the laboratories concerned with fission reactor development would no longer be so centrally occupied with this job, although, as I have already said, this time has not yet really come. In line with this sort of speculation we organized a series of "advanced technology seminars" at the Oak Ridge National Laboratory in 1961. At these seminars we examined a number of large-scale technological problems, generally those having important social implications. The subjects treated at these seminars included desalting the sea, atmospheric pollution, carcinogenesis, civil defense, liquefaction of coal, and space technology. As matters turned out, we have in the ensuing 7 or so years become involved in a major way with desalting, civil defense, and carcinogenesis. I shall describe how we became involved in each of these activities, and what our experience has been.

*Desalting the Sea.*—Our involvement with desalting the sea had two separate origins. On the one hand, several of our solution chemists who had worked on the original development of plutonium chemistry during the Manhattan project were intrigued by the physical chemistry of desalting, a topic we discussed in our advanced technology seminars. At that time I was a member of the President's Science