

of Saline Water. I might add, Mr. Chairman, I have with me Mr. Bill Williams, the Chief of our desalting staff from our Reactor Development and Technology Division.

Before commenting on S. 991, I would like to summarize briefly the background and interests of the AEC in desalting activities. We believe that there is a natural partnership between nuclear power and desalting. By joining the vast energy resources of the atom with the unlimited waters of the sea, we open the prospect of solving for the future the problems of adequate fresh water and energy for human needs.

The potential for achieving major economies in desalting of combining desalting with nuclear energy in large, dual-purpose plants was first recognized in 1955, Mr. Chairman, when you, then chairman of the Joint Committee on Atomic Energy, requested, in connection with the McKinney Panel study, the advice of the Atomic Energy Commission's Los Alamos Scientific Laboratory on whether nuclear energy could be used to advantage in the large-scale desalting of sea water. The answer then was yes, but that both nuclear and desalting technologies would have to be further developed and scaled up in size.

Improvements in both technologies which had come about by 1962, led to the conclusion that the development of dual-purpose, nuclear desalting plants producing large amounts of power and fresh water should be vigorously pursued. Following a favorable assessment by the Office of Science and Technology,¹ President Johnson directed the Department of the Interior and the Atomic Energy Commission to undertake such a joint program in 1964.

Our experience with nuclear power, which is typical of some other new technologies, demonstrates that, if a vigorous program of research, development, and actual plant scaleup and construction is carried out, evolutionary improvements can be expected which should result in further major improvements in economics. I might interpolate here, Mr. Chairman, to point out that, of course, nuclear power has been scaled up, it is commercially available; there are over 100 plants under construction; there are 20 plants in operation. We expect that by 1980, nuclear power will be producing about 25 percent of the total electric energy requirements of this country.

At the Atomic Energy Commission's Oak Ridge National Laboratory, under the leadership of its Director, Dr. Alvin Weinberg, and of Dr. R. Philip Hammond, Director, nuclear desalination program, a coordinated program of the Department of the Interior and the AEC has been conducted to assure a close coupling of new developments in nuclear energy and desalting.

During the past 7 years, the Oak Ridge National Laboratory has undertaken investigations and developments for the Office of Saline Water in the areas of heat transfer, scale control, and basic water research as well as engineering studies, conceptual designs, component development and systems analyses. Mr. O'Meara referred to some of the recent work at Oak Ridge in the reverse osmosis field in his testimony.

¹ Office of Science and Technology, Executive Office of the President, "An Assessment of Large Nuclear-Powered Sea Water Distillation Plants," and appendixes, March 1964.