nents and developers of nuclear power, the cost reductions have resulted from (1) advancements in technology, (2) the trend to large-scale units, (3) competition among nuclear and conventional plant suppliers, and, (4) the experience with prototype and demonstration projects.

Desalting in many respects can be compared to nuclear power, and desalting technology currently appears to be at the large plant demonstration stage. Experimental and test modules of desalting plants are operating and are producing the technical base necessary for the demonstration phase, just as nuclear technology was for the Shippingport project. And, as in that case, we know the first prototype or demonstration plant(s) will not be economic but can contribute immeasurably to the enhanced economics of the plants to follow. The role of demonstration projects to the successful introduction of new technology cannot be overstated, particularly when one considers the potential costs and limitations that might otherwise result from the failure to achieve practical applications and timely establishment of a needed industry.

We are entering into another phase in the development of large-scale desalting—that of prototype and demonstration projects—where the technologies of nuclear power and desalting can be combined as forerunners of large dual-purpose plants of the future. Our experience with nuclear power, which is typical of most other new technologies, demonstrates that, if a vigorous program of research and development and actual plant construction is carried out, evolutionary improvements in desalting can be expected which should result in further major improvements in the economics of large-scale desalting. There is no better way of acquiring knowledge and experience for large dual-purpose plants than by building appropriate prototype and demonstration plants on a timely basis. In the final analysis, it is only through actual construction and operational demonstration that scientific and technical plants can be dependably proved and converted into firm milestones for guidance for the future.

(The committee also received the following letter from the Pacific Gas & Electric Co.:)

PACIFIC GAS & ELECTRIC CO.,
*Washington, D.C., April 16, 1971.*

Re S. 991, desalination—research and development program.

Hon. CLINTON P. ANDERSON,
*Chairman, Water and Power Resources, Subcommittee of the Senate Interior, and Insular Affairs Committee, U.S. Senate, Washington, D.C.*

DEAR MR. CHAIRMAN: The interest of Pacific Gas and Electric Company in furtherance of an increased technology and cost effectiveness of desalination of ocean and ground water, is a matter of public record, and we take this opportunity to reaffirm our interest and our desire to encourage the continuation of Federal programs, research and development, in this important field and to participate in whatever constructive ways are reasonably available to utilities such as ours. In this regard, there is attached herewith a press released dated January 12, 1971, wherein we identify our Company's role in a desalination feasibility study now under way in California in cooperation with the Department of Water Resources and the Office of Saline Water.

We have studied the text of S. 991. If it were amended to clarify the supportive role which privately-owned utilities or other non-Federal entities can and should play in this research effort, it would have our endorsement.

To accomplish this, we propose amending S. 991 in the following ways:

1. Page 3, line 6, insert after "modules", "(and purchase energy therefor)".
2. Page 4, lines 5 and 6, after the word "non-Federal" strike "governmental entities and utilities" and insert "utilities and governmental entities".
3. Page 4, line 22, delete "entity or" and insert "or utilities" after entities.
4. Page 4, after paragraph (ii), insert a new paragraph (iii):

"(iii) availability of cooperating entities or utilities willing and capable of entering into agreements and contracts providing an energy source for the plants;"

5. Page 5, renumber paragraphs (iii) and (iv) to read (iv) and (v).
6. Page 5, line 8, strike "marketing".
7. Page 5, lines 13 through 15, strike from and including "energy" to and including "region" and insert "and energy use of the prototype plant, and the possible energy production required to make the plant feasible, with the water and power systems of the region".