

Varying uses, of course, have varying quality requirements. Of those projects just mentioned, for example, each would have a different criterion or quality standard to be concerned about. At Santee the content of bacteria and viruses is important, while mineral content is of little concern beyond the requirements for irrigation.

At Whittier Narrows the main interest is in maintaining a low mineral content. Here the bacterial content is not too important because the reclaimed water must filter down through many feet of unsaturated soils where natural processes remove or destroy such organism.

At Fontana the only criterion for quenching slag is that the water be wet.

Recognizing the broad spectrum of quality requirements for the numerous and varied uses involved, we are now studying the possible application of systems analysis techniques developed by the aerospace industry to help us analyze the demands for water and determine the quality necessary for those uses. An analysis of this kind will permit placing into categories those uses having various levels of quality requirements. It will show how much of this water could come from surface supplies, how much from ground water sources, how much reclaimed waste water, what treatment is necessary to meet the various water quality needs for the anticipated uses, and how much it will cost.

Mr. DADDARIO. I think it is a commendable thing that Governor Brown has issued contract awards in the systems analysis area. Do the leaders in the aerospace industry know enough about the water problem to apply the systems analysis approach or will it be necessary for those people, such as yourself, who are the authorities in pollution control to learn this approach?

Mr. WARNE. Well, maybe both. Maybe we both have something to learn but I will say this: In several instances, in relation to the State water project for example, in which I am continuously engaged, we have used the techniques of the aerospace industry through North American, for example, and systems analysis of problems such as the transportation of water in a long canal, and we believe that they have something to offer us.

We have given great study to Aerojet's waste disposal program suggestion. My department, experts in our department are working in connection with this, and while I think the Aerojet people did suffer some from lack of familiarity with the practical problems of water management, or drainage, many of their suggestions are going to prove very useful.

We have committees in the State now from the action departments working on programs that grow directly out of these studies and I think they are going to result in major advances. We hope so. Perhaps both in techniques and in organization.

Mr. VIVIAN. Having worked in systems engineering for many years, Mr. Warne, I am specifically interested to know what particular talents or attributes engineers in the aerospace industry contribute to the water pollution problem?

Mr. WARNE. To the water pollution problem?

Mr. VIVIAN. As to the overall water management problem?

Mr. WARNE. They bring techniques by which we can establish improvements on our models of percolation of ground waters for one.