# Israel: Desalinization Plant Delayed

*Tel Aviv.* Almost without exception, Israelis have succeeded best at solving their worst problems, and military ascendency is only the most dramatic example. Water is another. Israel has always faced the possibility of an acute water shortage, but has developed one of the world's most advanced water systems.

The two major rivers, the Jordan and the Yarken, have both been tapped. Groundwater sources have been thoroughly searched and exploited. A national water grid has been constructed to transport water from where it is abundant to where it is scarce; the Jordan's waters in the north go all the way to the dry southern Negev. The success of the nation's development program is perhaps best reflected in the prosperity of the nation's agriculture, which consumes 80 percent of the nation's water; in 1949, Israeli farms produced half of the food for a population of 600,000, but today they supply 85 percent of the needs of 2.6 million. Not surprisingly, the company that does most of Israel's water planning, Tahal, also receives many foreign contracts.

The next significant step in the nation's water technology is large-scale desalting of seawater. The Israelis plan to build a dual-purpose atomic reactor on the Mediterranean coast south of Tel Aviv; the plant will supply power and heat for a multiflash desalinization plant.

The major problems associated with the project are political, not technical. It was originally scheduled to be completed by the end of 1972 or early in 1973; it was to follow, roughly, the same schedule as a similar plant in Los Angeles. And, like the Los Angeles plant, it was supposed to receive extensive financing from the U.S. government. America's interest, according to Israelis, stems not only from the two nations' close political ties but also from a U.S. desire to gain experience with large-scale desalinization operations; these two projects represented the largest to date.

In December 1966 a high-level U.S. team consisting of two technical advisers and a political representative visited Israel. Negotiations over terms of U.S. financial assistance began. But the American political representative was Ellsworth Bunker, and shortly thereafter he was appointed ambassador to South Vietnam. As far as the Israelis are concerned, the project has been at a standstill ever since.

Precisely why no replacement for Bunker has been named in the intervening year and a half is unclear. Israelis remain mum; they are sensitive about the project's politics, and all they will say is that President Johnson is a busy man (Bunker was a presidential envoy, named directly by Johnson). AEC Commissioner James T. Ramey visited Israel in January and reviewed plans for the desalinization plant. Thus, there is speculation that Bunker's successor will be named sometime in the not-too-distant future.

One reason for the delay may be that Israel's water situation allows considerable leeway between inconvenience and an outright crisis. The Five-Year Water Plan for 1966–71 envisions the development of the last major resources before the country turns to converted seawater. These include the tapping of additional sources of groundwater, the reuse of municipal wastewater, and better use of rainwater through construction of a system to catch the runoff from quick storms. But in the last 2 years the Israelis have had particularly wet winters, and the water situation is generally good. Moreover, the Israelis are also always learning to make better use of the water they have. If existing sources become strained before the desalinization plant is built —the earliest possible date would be 1974–75, and the latter part of the 1970's is more likely—agricultural use can be restricted, or groundwater sources can be overdrawn. This last possibility would be a dangerous practice, because the more the groundwater sources near the Mediterranean are used, the less resistant they are to advancing underground seawater. But the expedient has been tried before and no doubt can be relied upon again; in fact, part of the present program is replenishment of groundwater sources. Whatever the problems, Israelis are not worrying about children going thirsty.

But that there is an eventual need for desalinization seems undisputed. Not only are all the existing water sources being exploited but many of these sources yield brackish water that must be mixed with fresh water before it is usable; re-treated municipal water and groundwater from some wells fall in this category. The desalinization plant will yield fresh water of high quality.

Once the Israelis start serious bargaining with the United States, they will undoubtedly press for the cheapest possible package. According to a preliminary study made by Kaiser Industries, the cost of water from the plant will depend more on capital expenses than on any other factor, and the Israelis need cheap water. Even with a low-interest loan, the cost of the plant's water should be 24 to 26 cents per 1000 gallons —more than twice the price Israeli farmers normally pay. Thus, whatever the final settlement, the cost of the water to users will have to be kept down through government subsidy, as has long been the case for water from other expensive sources.

Meanwhile, the Israelis are not ignoring other possible uses of desalinization. In Eilat, the small town (population, 10,000) at the southern tip of the Negev, a small multiflash plant has been built which supplies 50 percent of the town's water needs in summer. Farther north, at the Negev Institute for Arid Zone Research in Beersheba, another desalinization technique, electrodialysis, is being investigated. This approach is generally best suited for converting small quantities of water, and it might eventually allow Israel to utilize significant but scattered sources of brackish water in the Negev. Finally, an Israeli company has developed a unit for desalinizing water by means of the "vacuum-freezing" process; the company is now beginning to export this unit, and, in the short run, desalinization technology may contribute more to easing Israel's adverse balance of trade than to improving the water system.

—ROBERT J. SAMUELSON