cally smaller, the total heat exchanger surface is 5 percent of that in an MSFD plant, the operating conditions are milder (maximum brine temperature is 177 degrees Fahrenheit as compared to 220 degrees and higher for MSFD), with scaling and fouling categorically eliminated.

To prove this concept, the company expended almost $600,000 on a laboratory program of 4 years' duration: over 300 solvents were synthesized and the pertinent properties painstakingly measured and correlated; the results were fed into a computer program (our development) to produce an engineering design of a large-scale plant, thus testing the suitability of each particular solvent. At the present time, we have a number of solvent compositions with a combination of properties adequate for an economic commercial design. In addition, investigations were conducted to verify other important aspects, such as the chemical stability of the solvents with respect to oxidation and to hydrolysis by hot sea water, the ability of off-the-shelf coalescing media to coalesce fine droplets of solvent that might be mechanically entrained in the product and brine concentrate streams, as well as the effects of molecular weight distribution on the pertinent physical properties. Other properties, important to engineering design, such as viscosities, specific gravities, interfacial tensions and diffusion coefficients were investigated. This tremendous program involved between eight and 12 people over the 4-year period, and approximately 70 notebooks of laboratory data were accumulated.

Thus, a complete and successful prepilot plant program has been carried out, and now, unfortunately, terminated for the lack of funds, although there are strong indications that by continuing the research there will evolve improved solvents, imparting even greater economic advantages to the process.

Furthermore, engineering studies performed by ourselves and by others have shown that the Puraq process, with the solvents now developed, results in savings of 10 to 20 percent in steam consumption, eliminates practically all chemical consumption, and that the capital requirements in plants of 10 million g.p.d. capacity will be one-third less than for MSFD, and one-half less in capacities of 40 million g.p.d.

The Puraq process has been validated by this laboratory program and by these engineering studies, and the technical risks from this point to commercialization have been characterized by other industrial organizations as moderate or nominal.

The company must now undertake a pilot plant and engineering development program requiring a total of $3 million, to include the construction of a 300,000 g.p.d. pilot plant, its operation for 2 years, engineering and hardware development, FDA and USPHS clearance for the solvents, and 4 years' continuation of the laboratory program. The company has not succeeded in promoting these funds from either the financial or the industrial community. Even though the return on investment is very high, there is a large time scale in the commercialization procedure and there is also a lack of confidence in the future of the desalination business.

Because of this and because our original funds have been exhausted, we have ceased our operations; Dr. Jakabhazy has found himself an excellent job at the Polaroid Corp., no mean feat in these times, and I am looking for a job, and the partners' investment may well go down the drain. The laboratory is open, and the experimental