

This reconnaissance report does show that within presently projected techniques for combined nuclear power-desalting plants, and within certain policy guidelines contained in pending legislation, there is sound reason to expect that detailed studies would establish the feasibility of a plan for augmenting the Colorado River to the extent necessary to assure the Lower Basin States 7.5 million acre-feet of Colorado River water annually for consumptive use.

UNDERLYING POLICIES, GUIDELINES, AND ASSUMPTIONS

Augmentation of the Colorado River through desalting of sea water, by increasing the basic water supply of the river, would alter the river's hydrology. The water supply for the Lower Basin, including the Central Arizona Project, would be increased. The controversy over any responsibility for the Upper Basin States to meet a portion of Mexican water deliveries would be settled. Capital and annual costs would be involved, and under Reclamation tradition, provision for return of the reimbursable costs, with interest where appropriate, must be made. As the initial desalting plants will not be required until about 1990, projections of techniques for producing nuclear power and desalting of sea water are required. These aspects give rise to the requirement, for study and report purposes, to establish guidelines, policies, and assumptions. The basic and important ones adopted are discussed in following paragraphs under the three broad headings of "Central Arizona Project," "Hydrology," and "Financial."

Central Arizona Project

The Central Arizona Project (CAP) would be a separate entity, financially self-contained, essentially as described in the Bureau of Reclamation's "Summary Report—Central Arizona Project with Federal Prepayment Power Arrangements" dated February 1967. It is assumed that after payout of project costs, surplus revenues from the CAP would accrue to the Lower Colorado River Basin Development Fund and be available to assist in returning the reimbursable costs of any Colorado River augmentation works. The only effect of CAP on the plan presented herein is thus in the magnitude of Development Fund revenues that would accrue from CAP. With an augmented river, there would be a great deal more water for sale from CAP, both for irrigation and municipal and industrial purposes, and the water marketing presented in the Summary Report would be substantially altered.

With an augmented Colorado River a constant diversion of about 1.6 million acre-feet annually would be assured. In the Summary Report, which reflected natural river conditions, it was projected that prior to 1990 the average water supply available to the CAP would begin to decrease progressively as Upper Basin uses increased, dropping from 1.6 million acre-feet (m.a.f.) to an average diversion of 676,000 acre-feet by the year 2030. Of this average diversion, only a little more than 300,000 acre-feet represented assured project deliveries. Thus, in the Summary Report, sales of water for municipal and industrial (M&I) purposes were limited to assured deliveries of 312,000 acre-feet which accommodated increased M&I demands up to the year 2000. After the year 2000 M&I water deliveries were held constant. With an assured diversion of 1.6 m.a.f. from an augmented Colorado River, increases in M&I demands after the year 2000 would be met from CAP water supplies. By the year 2030 it is projected that 672,000 acre-feet of M&I water demand would be served from CAP water. As part of the increased M&I water supply would be needed to serve Tucson, additional capacity in the Tucson Aqueduct would be required in the future. The CAP revenues to the Development Fund shown in this report take into account the need for repayment of the cost of such additional capacity.

Under the augmented water supply conditions, the CAP would repay all of its costs from project revenues. Assumed water rates at canalside are \$10 per acre-foot for irrigation and \$56 per acre-foot for M&I water. All capital cost repayment requirements would be met by the year 2033, and thereafter the CAP would contribute about \$34,000,000 annually to the Development Fund.

The capacity of the Granite Reef Aqueduct has been assumed as 2,500 cubic feet per second (c.f.s.). However, because CAP is treated as a self-contained financial entity during payout, assumption of a 3,000-c.f.s. aqueduct would have little effect on the augmentation study. Previously, 1975 has been assumed as the initial date of Colorado River diversion for the CAP. This date no longer appears realistic and in this report initial diversion is assumed in 1979.

Since an augmented river would provide California with a minimum of 4.4 m.a.f. for consumptive use at all times, the question of a 4.4-m.a.f. priority for California would automatically be resolved.