

ALTERNATIVE IMPORT ROUTES (2,500,000 ACRE-FEET)

	Pacific-Mohave (A)	Pacific-Havasu (B)	Gulf-Mead (C)	Gulf-Havasu (D)
Construction cost (in millions of dollars):				
Nuclear desalting facilities ¹	1,140	1,134	1,174	1,085
Conveyance system.....	2,113	2,149	2,672	1,360
Total.....	3,253	3,283	3,846	2,445
Annual costs—O.M. & R.² (in millions of dollars):				
Nuclear desalting facilities.....	54.4	54.0	54.7	52.0
Conveyance system.....	5.5	5.1	9.6	4.7
Total.....	59.9	59.1	64.3	56.7
Physical features (miles):				
Tunnels.....	66	94	83	27
Pipeline.....	87	77	130	27
Canal.....	101	122	184	138
Penstocks and/discharge lines.....	13	10	17	11
Total.....	267	303	369	203
Pumping plants:				
Number of plants.....	9	8	19	10
Total dynamic head (feet).....	4,105	3,381	5,045	1,650
Installed capacity (megawatts).....	1,696	1,397	1,992	651
Power drops:				
Number of drops.....	4	3	6	2
Design head (feet).....	2,114	1,418	2,315	415
Installed capacity (megawatts).....	601	403	629	113

¹ Includes allocated power costs for project pumping.

² Includes fuel costs, interim replacements, and sinking fund to rebuild at the end of 30-year service life.

CONSIDERATIONS FOR FEASIBILITY STUDIES

The objective of this study was to explore, based upon reconnaissance level data, the possibilities of augmenting the water supply of the Colorado River by desalting of sea water. The plan presented herein has been selected in order to demonstrate the various factors involved in the concept of augmentation by desalting of sea water without introducing unnecessary complications. In the course of study, a number of potential alternative or modified courses of action were taken into consideration. Because of limitations on the time and scope of the study, it was not possible to explore in detail all of the potential opportunities to improve the plan. A number of these possibilities appear to be of significant potential advantage, however, and should be considered in detail when feasibility studies are undertaken. The following discussion concerns the most important of these possibilities.

Coordination with Mexico-United States of America desalting proposal studies

A joint study group has been formed by the Government of Mexico, the Government of the United States of America, and the International Atomic Energy Agency to make a preliminary assessment of the technical and economic practicability of a dual-purpose nuclear power and desalting plant which would serve the general areas of California, Arizona, Baja California, and Sonora. The work on this assessment is presently under way.

It is certain that long-range provisions for additional augmentation of the Colorado River will be necessary to support the continued economic and sociological development of the Pacific Southwest. The assessment being made by the joint study group is giving consideration to providing for such long-range needs.

If agreement is reached among the parties and plans to proceed with this joint venture materialize, an opportunity might exist to obtain the augmentation water from this source at a significant saving, particularly in conveyance costs.

Consolidation of these two proposals would impart the advantages of financing