

The estimated annual operation, maintenance, and replacement costs after the completion of the three stages of construction are as follows:

CONVEYANCE SYSTEM, ANNUAL O.M. & R. COSTS

[In millions of dollars]

Feature	Stage		
	1990	2000	2010
Aqueduct facilities.....	3.02	3.46	4.11
Transmission system.....	.73	1.17	1.21
Total.....	3.75	4.63	5.32

Summary of Federal project costs.—A summary of the total Federal project costs for augmentation of the Colorado River by 2.0 m.a.f. delivered to Lake Mead follows:

SUMMARY OF TOTAL FEDERAL PROJECT COSTS

[In millions of dollars]

Feature	Stage			
	1990	2000	2010	Total
Construction costs:				
Desalted water.....	381	214	214	809
Nuclear pumping power.....	56	28	28	112
Conveyance system.....	1,444	339	80	1,863
Total.....	1,881	581	332	2,784
Annual O.M. & R.: ¹				
Desalted water.....	10.45	16.36	22.27	-----
Nuclear pumping power.....	.86	1.29	1.72	-----
Sinking fund for rebuilding plants.....	9.32	14.46	19.60	-----
Conveyance system.....	3.75	4.63	5.32	-----
Total.....	24.38	36.74	48.91	-----

Annual O.M. & R. costs are cumulative after completion of each stage.

Cost of pumping power.—The cost of pumping power includes an allocated portion of the capital and OM&R costs of the nuclear powerplant plus costs of the transmission system associated with conveyance works. The amount of pumping power capacity required from the nuclear powerplant was determined by deducting the power available at power drops from the total requirement and adjusting for transmission losses. The cost of thermal pumping power at the dual-purpose plant is 0.9 mills per kilowatt-hour. The average transmission cost is 0.4 mills per kilowatt-hour. These two components plus an adjustment for transmission losses and for plant replacement at the end of 30-year life will result in an average cost for thermal pumping power of about 1.5 mills per kilowatt-hour at the pumps.

ECONOMIC AND FINANCIAL ANALYSIS

The analysis of the economic justification of the augmentation plan does not readily lend itself to the application of typical benefit-cost procedures of conventional Reclamation projects. The primary emphasis of this economic analysis is to define the magnitude of the investment and operating costs involved so that a judgment can be made on the reasonableness of using nuclear desalting of ocean water as a source of augmentation, and to determine whether sufficient revenues are available in the Development Fund to cover reimbursable costs within the general framework of Reclamation financing criteria. Since adequate procedures have not been developed for measuring the benefits associated with meeting the Mexican obligation, somewhat arbitrary benefit estimates were used for this reconnaissance effort.