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BY THE U.S. GENERAL ACCOUNTING OFFICE

Report To The Honorable George Miller, United States House Of Representatives

Proposed Pricing Of Irrigation Water From California's Central Valley New Melones Reservoir

The New Melones Reservoir in California is the latest addition to the Bureau of Reclamation's vast network of dams, reservoirs, canals, and pumping stations known as the Central Valley Project. Since New Melones is part of the CVP, the Bureau adds its irrigation construction, operation, and maintenance costs to other CVP costs. The entire irrigation costs are then used in calculating rates for water repayment.

As a result, New Melones irrigation rates are lower than they would be if its water users had to repay construction and operating costs of the reservoir. Costs associated with New Melones will eventually cause the rates of other CVP users to increase. Because of existing long-term contracts, however, the increased rates cannot be passed on to other users until their contracts expire or are amended.

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UNITED STATES GENERAL ACCOUNTING OFFICE
WASHINGTON, D.C. 20548

RESOURCES, COMMUNITY,
AND ECONOMIC DEVELOPMENT
DIVISION

B-209947

The Honorable George Miller
House of Representatives

Dear Mr. Miller:

In your letter of October 27, 1982, and during our subsequent discussions with your office, you expressed concern that the water rates contained in the Bureau of Reclamation's proposed water service contracts with the New Melones Reservoir irrigators appeared to be extremely low. You requested that we provide you with information on

--how the Bureau calculates irrigation water rates for its Central Valley Project (CVP),

--how the proposed New Melones contract rates for irrigation water were calculated,

--how the Bureau contracts for the sale of water from Federal water projects and how such contracts effect project repayment,

--what the rate for New Melones irrigation water would be if New Melones was not integrated into the CVP, and

--when CVP water-rate increases resulting from the inclusion of New Melones irrigation construction costs in the CVP rate base will be passed on to existing CVP irrigators.

The Department of the Interior's Bureau of Reclamation builds, operates, and maintains multipurpose water projects in the 17 Western States. For the New Melones project, it is responsible for marketing irrigation water among other things. Because New Melones is part of the CVP, the Bureau includes the construction and operation and maintenance costs allocable to irrigation with CVP-wide irrigation costs from which a CVP-wide rate for irrigation water sales is determined for repayment purposes. Since 1974, the Bureau's Mid-Pacific Region in Sacramento, California, has calculated CVP irrigation water rates, including those for New Melones (an authorized unit of the CVP) on a cost of service basis. A stated objective of its current CVP water marketing policy is to set water service rates at levels sufficient to recover irrigation construction costs

within 50 years following project completion. The New Melones irrigation water rates appear to be low for two primary reasons. First, under the CVP water marketing policy, irrigation water supply costs of all CVP units are pooled together and categorized into four types of project services--storage, conveyance, pumping, and water marketing. Second, rates are developed for each CVP water user on the basis of which project services are required to deliver water to them. New Melones rates are based on only two of the project services, storage and water marketing, because New Melones water deliveries do not require project conveyance or pumping.

The Bureau recovers irrigation project costs through the use of repayment contracts or water service contracts. Repayment contracts are generally used for projects that have limited alternative uses for the water supply. Repayment contracts are fixed obligation contracts--the water users' ultimate repayment obligation usually is known prior to the start of construction. Most Bureau contracts are repayment contracts. Water service contracts, on the other hand, are generally used for large, multipurpose projects. They provide the Bureau more flexibility than repayment contracts in that water use can be shifted to other users if and when existing users elect to discontinue water service. Water service contracts can be used when the water users' ultimate share of reimbursable project costs is not known in advance of construction. The Bureau uses water service contracts for projects, such as the CVP, that are designed to be constructed in increments or units over long periods of time and operationally integrated when completed.

New Melones irrigation water users will pay an annual rate of $3.50 an acre-foot[1] for water which is the minimum charge for irrigation water under the Bureau's CVP water marketing policy. The Bureau based the $3.50 rate on the two project services required to deliver water to New Melones water users, storage and water marketing. The actual cost of these services is $2.71 an acre-foot; however, because of the minimum rate policy, the rate was set at $3.50 an acre-foot.

By contrast, if New Melones were not part of the CVP, we estimate its water users would have to pay about $18.00 an acre-foot for irrigation water in order to repay the project capital and operation and maintenance (O&M) costs allocated to irrigation over the next 50 years. We developed the $18.00 rate in the same manner as the Bureau developed the $3.50 rate. We computed the storage capital component of the rate ($9.56) by

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1/The quantity of water required to cover 1 acre to a depth of 1 foot; equal to 325,851 gallons.

dividing the New Melones irrigation construction costs by the projected acre-feet of water deliveries from New Melones over the succeeding 50 years. We computed the storage O&M rate ($8.11) by dividing the projected O&M costs over the succeeding 5 years and added in the current water marketing charge. The O&M portions of the $18.00 and $3.50 rates, however, will probably have to be periodically adjusted upward to cover rising O&M costs during that period.

The increases in overall CVP irrigation water rates due to the financial integration of the New Melones Reservoir with the CVP are about 40 cents an acre-foot a year. The increases are not larger because the New Melones costs are spread over a very large CVP water delivery base. However, the overall CVP irrigation rate increases cannot be passed on to existing water users until either their contracts expire, are amended, or in the case of some of the more recent contracts, until their adjustment date. If the increased rates were passed on to the existing water users as soon as their contracts could be adjusted or renewed, it would take about 82 years (2062) to recover the New Melones construction costs allocated to irrigation. If the rate increases could be passed on immediately, New Melones irrigation construction costs probably could be recovered in about 50 years provided actual water deliveries develop as planned.

The possibility exists, however, that the costs could be recovered in less than 82 years, but not from the irrigation water users. According to Bureau officials, the entire CVP (including New Melones) will be repaid by 2030, or 50 years from the completion date of New Melones if no other unit is added to the CVP during that period. The Bureau's estimate is based on the assumption that project power revenues will be available to repay the unpaid irrigation construction costs (about $114 million) remaining at the end of the 50 year repayment period. The Bureau also assumes (for current water rate computation purposes) that New Melones is the final unit of the CVP. If another unit is added prior to 2030, the repayment period would be extended to 50 years beyond the completion date of such a unit, and additional power revenue assistance would be required to repay any unpaid irrigation costs.

OBJECTIVES, SCOPE, AND METHODOLOGY

The overall objectives of this review were to provide information on how the Bureau contracts for the sale of project water, how the water rates for CVP irrigators (including proposed New Melones irrigators) were calculated, and the impact on project repayment of integrating New Melones irrigation construction costs into the CVP cost base.

We made our review at the Department of the Interior's Bureau of Reclamation headquarters in Washington, D.C., and its Mid-Pacific region in Sacramento, California. To determine how the Bureau contracts for the sale of water, we interviewed Bureau contract administration specialists, researched pertinent reclamation law, reviewed applicable Bureau instructions and policy directives, and reviewed and analyzed the proposed New Melones water service contracts. To determine how the Bureau calculated the CVP-wide and New Melones water service rates and how the integration of New Melones in the CVP rate base impacts on project repayment, we interviewed Bureau economics, finance, and repayment specialists, reviewed and analyzed the current CVP water marketing policy, and computed what the CVP water service rates would be with and without the inclusion of New Melones costs in the CVP rate base. We also scheduled when existing CVP water service contract rates can be adjusted to cover increases due to the addition of New Melones, scheduled the water deliveries by year that will be subject to payment of the increased rate, and computed the annual dollar recovery of New Melones costs by applying the amount of the rate increase to the projected water deliveries over a period that would recover all New Melones construction costs allocated to irrigation.

As agreed, we did not audit the CVP and New Melones construction cost data to determine their validity. Also, we limited our analysis of the CVP water rate calculations to the information provided us in support of the CVP water marketing policy calculations since those data were used to calculate the rates contained in the proposed New Melones contracts. In addition, we did not attempt to determine whether the CVP rate setting policy is appropriate or in the best interests of the Federal Government.

The New Melones and CVP-wide water supply rates which are the subject of this review are tentative. The proposed contracts have not been made final or approved by the water users or the Secretary of the Interior. Also, the CVP water marketing policy followed by the Bureau since 1974 has not yet been approved by the Secretary of the Interior. Therefore, the information provided in this report is qualified in that it is applicable only under the policy guidance in effect at the time of our review.

As requested by your office, we did not obtain Department of the Interior comments on the information presented in this report. However, we did discuss the report's contents with Bureau of Reclamation officials in Washington, D.C., and at its Mid-Pacific region. Their comments were included where appropriate.

Except for not obtaining official agency comments, our review was done in accordance with generally accepted government audit standards.

Copies of this report are being sent to the Director, Office of Management and Budget, the Secretary of the Interior, the Commissioner of Reclamation, and other interested parties.

Sincerely yours,

J. Dexter Peach
Director

Contents

APPENDIX		PAGE
	INFORMATION ON THE PROPOSED PRICING OF IRRIGATION WATER FROM THE CENTRAL VALLEY PROJECT'S NEW MELONES RESERVOIR	1
	Background	1
	How Bureau contracts effect project repayment	3
	How CVP-wide water rates are calculated	5
	How New Melones irrigation water service rates were calculated	7
	New Melones irrigation rates: what they would be without the CVP	8
	How and when New Melones irrigation construction costs will be recovered	8

ABBREVIATIONS

CVP	Central Valley Project
M&I	Municipal and industrial
O&M	Operation and maintenance

INFORMATION ON THE PROPOSED PRICING OF IRRIGATION WATER FROM THE CENTRAL VALLEY PROJECT'S NEW MELONES RESERVOIR

BACKGROUND

The Bureau of Reclamation and U.S. Army Corps of Engineers are the principal Federal agencies that build and operate multipurpose water projects. Through such projects both agencies provide municipal and industrial (M&I) water supplies, hydroelectric power generation, irrigation, fish and wildlife enhancement, flood control, outdoor recreation, and river regulation and control. While the Bureau's authority is limited to building and operating water projects in the 17 Western States, the Corps operates nationwide.

Generally, reclamation law requires that Federal expenditures for project purposes such as power production, irrigation, or M&I water supplies are reimbursable and must be repaid by the beneficiaries. On the other hand, most Federal expenditures for project purposes such as flood control, fish and wildlife, and navigation are generally nonreimbursable. The nonreimbursable purposes are supported by Federal appropriations.

Two types of costs must be repaid by the beneficiaries: project construction costs and annual operation and maintenance (O&M) costs. Interest on construction costs is also paid under certain circumstances. Each project user must return its share of reimbursable construction costs. Allocated O&M costs must be repaid annually, with the charge based on the amount of actual costs.

The Central Valley Project (CVP), located in California, is an integrated network of 16 dams and reservoirs, over 600 miles of canals and aqueducts, 39 pumping stations, and seven power plants. The project is designed primarily to provide flood control, irrigation and M&I water supply, and power generation. It was first authorized for construction in August 1935, and the initial features were placed into operation in 1951. Since then, Congress has authorized the construction of several additional features to the CVP, including the New Melones dam and reservoir in 1962. As of September 1982, CVP facilities costing the Federal Government about $3 billion to construct have been placed in operation. Current Bureau estimates show that the project will ultimately cost about $6 billion.

New Melones was constructed by the Corps and completed in 1979 at a cost of about $320 million. The project provides flood control, water supply (primarily for irrigation, but some M&I), power generation, fishery enhancement, water quality improvement, and recreation benefits. The irrigation share of New

Melones project costs is about $87 million. As authorized, the project was turned over to the Bureau upon completion of construction for operational and financial integration into the CVP.

The Bureau is responsible for marketing New Melones irrigation water. Since New Melones is part of the CVP, the Bureau includes the construction costs allocable to irrigation in the total CVP-wide irrigation costs from which a CVP-wide rate for irrigation water sales is determined for repayment purposes. As a result of such pooling of costs, as it is referred to by the Bureau, the rate for New Melones irrigation water is much less than would be the case if New Melones irrigators had to repay New Melones construction costs allocated to irrigation without the benefit of such pooling.

According to the Bureau's New Melones Contract Specialist, in October 1982 the Bureau and three of the four water districts which had expressed an interest in purchasing water from New Melones reached agreement as to the language to be included in their proposed water service contracts. The proposed contracts called for varying amounts of irrigation and M&I water (a maximum of about 160,000 acre-feet a year) to be delivered over 40-year terms. Much of the water is considered an "interim"[1] rather than a "firm"[2] water supply and will be delivered to users both in and out of the Stanislaus River basin (New Melones regulates or controls the Stanislaus River). The rate for this water, as calculated under the Bureau's proposed CVP water marketing policy, is $3.50 per acre-foot for irrigation water and $9.00 per acre-foot for M&I water.

The proposed contracts were first made available for public review and comment during the period September 30, 1982, through October 22, 1982, under then reclamation policy. However, on October 12, 1982, the Congress enacted the Reclamation Reform Act of 1982. This act required the Bureau to make changes in some provisions of the proposed contracts. Consequently, in November 1982, after incorporating applicable Reform Act provisions in the contracts, they were again made available for public comment. This comment period ended on December 20, 1982.

1/An "interim" water supply is that portion of the New Melones water supply that is temporarily available for out-of-basin uses only until it is needed by future New Melones water users.

2/A "firm" water supply is the permanent amount of water that can be provided to New Melones water users each year on a usable pattern.

According to the Bureau's New Melones Contract Specialist, the proposed contracts containing the Reform Act provisions were resubmitted to the districts in February 1983. Two districts approved the contracts in March 1983 but expressed concern about executing them without a Bureau-approved rate-setting policy. The other district has not yet approved its latest proposed contract. The contracts as approved by the districts will be submitted to Washington for review by the Commissioner of Reclamation and subsequent approval by the Secretary of the Interior.

HOW BUREAU CONTRACTS EFFECT PROJECT REPAYMENT

The Bureau is responsible for ensuring that construction costs associated with, among other things, irrigation supply features of Bureau projects and irrigation supply features of most Corps projects in the 17 Western States are repaid by water users. To ensure project repayment, the Bureau requires that binding contracts be signed with potential water users (water districts or other legal contracting entities) prior to the start of construction, except in special circumstances.

The Bureau recovers irrigation project costs through the use of repayment contracts or water service contracts. According to the Bureau's Chief of Contracts and Repayment, repayment contracts are generally used for projects that have limited alternative uses for the water supply. Repayment contracts offer the Federal Government some degree of security in that repayment is required regardless of whether the water users take the project water. Repayment contracts generally require that the water users' ultimate repayment obligation be known prior to the start of construction. Most Bureau contracts are repayment contracts. Water service contracts, on the other hand, are generally used for large, multipurpose projects. Water service contracts provide the Bureau more flexibility than repayment contracts in that water use can be shifted to other water users if and when existing users elect to discontinue water service. Water service contracts can be used when the water users' ultimate share of reimbursable project costs is not known in advance of construction. The Bureau uses water service contracts for projects, such as the CVP, that are designed to be constructed in increments or units over long periods of time and operationally integrated when completed.

According to the Bureau's Chief of Contracts and Repayment, under repayment contracts, water users are required to repay their share of project construction (capital) costs in annual or semiannual installments, usually within 40 or 50 years following project completion as directed by the project's authorizing legislation. In addition to capital repayment, water users are required to pay their share of the project's annual O&M expenses. O&M costs are handled in two ways, depending on who

operates and maintains the project, the Bureau or the water users. If the project is operated and maintained by the Bureau, O&M costs are estimated by the Bureau for the upcoming year and charged to the water users in advance of water delivery. If water users operate and maintain the project, they pay the O&M costs directly rather than through the Bureau. When a repayment contract expires, the water users' capital repayment obligation ends. Under current reclamation law, the only obligation water users would have at that time is to pay an appropriate share of the annual O&M costs.

Under water service contracts, project costs are recovered through water service rates. Water service rates are set at levels sufficient to recover an appropriate share of costs associated with delivering project water to the users. They are generally computed on an acre-foot basis and include a capital cost component and an O&M cost component. The capital cost component should be sufficient to recover the water users share of project construction costs (based on the cost of facilities in service at the time the rate is computed) within a 40 or 50 year period. Likewise, the O&M cost component should be sufficient to recover the water users' share of annual O&M costs.

Prior to 1974, water rates included in water service contracts could not be adjusted until the contracts expired. During the period 1974-1978, recognizing that the rates in many of the older contracts were insufficient to recover current project costs, especially O&M, the Bureau began to include limited O&M rate adjustment clauses in some of its contracts. In 1979, the Bureau started writing 5-year rate adjustment clauses for both capital and O&M into its new water service contracts.

Although water service contracts are generally in effect for up to 40-year periods, they do not terminate the water users' repayment obligation when they expire. Upon expiration, another contract is written to recover the water users' remaining share of project costs including those associated with additional project units that may have come on line during the preceding contract period. However, under reclamation law (Public Law 84-643), water users may convert their existing water service contracts to repayment contracts. When converted, the repayment contracts would be for the remaining amounts of construction costs assigned to the water users, to be repaid within no longer than 40 years from the commencement of such contracts. Regardless of the type of contract water users have, they are required to pay an appropriate share of O&M costs, even after all project construction costs have been repaid.

HOW CVP-WIDE WATER RATES ARE CALCULATED

The Bureau has calculated CVP water service rates under several different water marketing strategies since the initial rates were established in the early 1940s. The initial rates for irrigation water ranged from $2.00 an acre-foot for water delivered in the Sacramento Valley, which is near the source of supply, to $3.50 an acre-foot for all water delivered to the San Joaquin Valley, which is farthest from the source. Under the Bureau's current CVP water marketing policy, agricultural water service rates vary from $3.50 to $15.60 an acre-foot depending on the project services that are required to deliver the water.

The stated primary objective of the Bureau's current CVP water marketing policy is to recover the reimbursable costs of CVP units within 50 years from the time they become operational. According to the Bureau's Mid-Pacific Region Repayment Branch Chief, this policy has served as the basis for CVP water service rates since 1974. It has not yet been approved for general CVP use by the Secretary of the Interior.

Although the rates developed under the water marketing policy are designed to recover project costs over the succeeding 50-year period, the Bureau recognizes that the current rates cannot be passed on to existing water users until their water service contracts expire or can be adjusted. As a consequence, existing contract rates are not sufficient to recover the reimbursable project costs from the water users within 50 years. In theory, if all CVP water service contracts could be adjusted at the time the rates are calculated and actual water deliveries were to materialize as planned, current project construction costs could be recovered within 50 years.

Under the current CVP water marketing policy, the Bureau segregates the capital and O&M costs allocated to irrigation water supply into four cost categories--storage, conveyance, pumping and water marketing--and develops rates for each (expressed in dollars per acre-foot). Storage costs are those related to the project's dams and reservoirs; conveyance costs are those related to the canals and aqueducts that deliver the water from storage; and pumping costs are those related to the various project pumping plants and power generating facilities required to move the stored water through the project to the eventual water users. A water marketing rate is computed to recover the Bureau's contract administration costs. CVP water service rates are set for each of the project water users on the basis of their use of these project services. For example, users who do not require project pumping for the delivery of their water do not pay the same water service rate as those who do.

The capital portion of the storage rate component is computed by dividing the total project storage construction costs by the total acre-feet of water planned to be delivered from project storage facilities over the succeeding 50 years. According to Bureau officials, 50 years is used because that is the maximum period of time authorized by Congress for the repayment of project construction costs. The O&M portion of the storage rate is computed by dividing the projected storage O&M costs for the succeeding 5 years by the projected water deliveries over the same period. This has the effect of keeping the O&M rate constant during the 5-year rate adjustment period that has been included in CVP contracts written since 1979. Most CVP water users are charged a storage component in their water service rate because practically all project water is delivered from storage.

The capital portion of the conveyance rate component is computed by dividing the conveyance construction costs by the total acre-feet of water planned to be delivered through project conveyance facilities over the succeeding 50 years. The O&M portion of the conveyance rate is computed by dividing the projected conveyance O&M costs for the succeeding 5 years by the amount of water to be delivered through project conveyance facilities over the same period. Most CVP water users who use project conveyance facilities pay the same conveyance rate. Some users, however, elect to pay their own O&M costs and are not charged an O&M conveyance rate component. Those who do not require project conveyance facilities to get their water do not have a conveyance rate component in their water service rate.

The capital portion of the pumping rate component is computed by dividing the pumping, power generation, and transmission facility construction costs by the total energy (kilowatt hours) projected to be used for pumping over the succeeding 50 years. A dollars-per-acre-foot rate is computed for each water user based on individual pumping requirements. The O&M portion of the rate is computed by dividing O&M costs projected over the succeeding 5 years by the projected energy usage over that period. All CVP water users who require pumping for the delivery of their water have a pumping component in their water service rate. Unlike the rates for storage and conveyance, however, pumping rate components are variable. Individual pumping rates are developed for each CVP water user on the basis of the amount of energy required to pump the water to the users. Those who do not require pumping do not have a pumping rate component in their water service rates.

The water marketing component is computed by dividing the Bureau's projected contract administration costs for the succeeding 5 years by the total acre-feet of water to be delivered from project storage or through project conveyance facilities

over the same period. All CVP water users are charged a water marketing rate since they all receive that service.

The following table shows, as of June 1983, selected CVP water rates by project service and the rate irrigation water users should be paying under the current water marketing policy as opposed to the rates in their existing water service contracts. With the addition of New Melones, there are a total of 25 irrigation service areas in the CVP. All rates are expressed in dollars per acre-foot.

Service Area (Water Users)	Wtr Mkt Rte	Storage		Convey		Pumping		Total	Current CVP Rate	Existing Contract Rate
		Cap	O&M	Cap	O&M	Cap	O&M			
San Luis Canal										
(Westlands WD)	.18	1.37	1.16	1.97	2.98	2.80	2.82	13.28	13.30	13.30
(San Luis WD)	.18	1.37	1.16	1.97	2.98	5.06	2.87	15.59	15.60	8.00
(Panoche WD)	.18	1.37	1.16	1.97	2.98	1.46	2.35	11.47	11.50	8.00
Delta Mendota Canal	.18	1.37	1.16	1.97	2.98	.54	1.06	9.26	9.30	3.50
Cross Valley Canal	.18	1.37	1.16	1.97	2.98	1.03	1.38	10.07	10.10	6.80
Contra Costa Canal	.18	1.37	1.16	-	-	.49	.51	3.71	3.70	.50
Black Butte	.18	1.37	1.16	-	-	-	-	2.71	3.50	3.50
New Melones	.18	1.37	1.16	-	-	-	-	2.71	3.50	3.50
Buchanan	.18	1.37	1.16	-	-	-	-	2.71	3.50	2.75
Hidden	.18	1.37	1.16	-	-	-	-	2.71	3.50	2.75
Sacramento River	.18	1.37	1.16	-	-	-	-	2.71	3.50	2.00
Feather River	.18	1.37	1.16	-	-	-	-	2.71	3.50	1.50

Some irrigators, such as those serviced by New Melones, are required to pay more for their water than the rate computed under the CVP water marketing policy. This is because Bureau policy does not allow CVP water to be sold for less than $3.50 per acre-foot. According to Bureau officials, the $3.50 minimum rate was selected because $3.50 is included in many of the older CVP contracts and it would not be appropriate to charge new water users a lesser amount.

HOW NEW MELONES IRRIGATION WATER SERVICE RATES WERE CALCULATED

As discussed previously, water service rates are developed for CVP water users based on the type of project services required to deliver water. New Melones irrigation water is delivered from the New Melones dam via the Stanislaus River, or through the dams' outlet works, requiring no project conveyance or pumping. As a result, their water service rate includes

only a storage charge and a water marketing charge as seen in the preceding table. New Melones water users pay the same storage and water marketing rates as other CVP irrigators.

NEW MELONES IRRIGATION RATES: WHAT THEY WOULD BE WITHOUT THE CVP

Since all CVP irrigators share (or will share) in paying New Melones irrigation construction costs, New Melones irrigators have a lower water service rate than they would if they had to repay such costs on their own. Based on the Bureau's CVP water marketing cost data and projected water deliveries, our computations showed that water users would have to pay about $18.00 per acre-foot for New Melones water if they had to repay the New Melones construction costs allocated to irrigation within 50 years, without assistance from the other CVP water users. The $18.00 rate consists of $9.56 per acre-foot for capital repayment, $8.11 for O&M, and the current water marketing charge. The O&M portion would probably increase periodically over the 50-year period as O&M costs increase.

We computed the $18.00 rate by dividing the New Melones construction costs allocated by the Bureau to irrigation (about $87 million) by the projected water deliveries from New Melones reservoir over the succeeding 50 years (about 9 million acre-feet). The O&M portion of the rate was computed by dividing the projected O&M costs over the succeeding 5 years (about $2 million) by the projected water deliveries over the same period (about 263,000 acre-feet). These calculations were made in the same manner as the Bureau computed the CVP-wide rates.

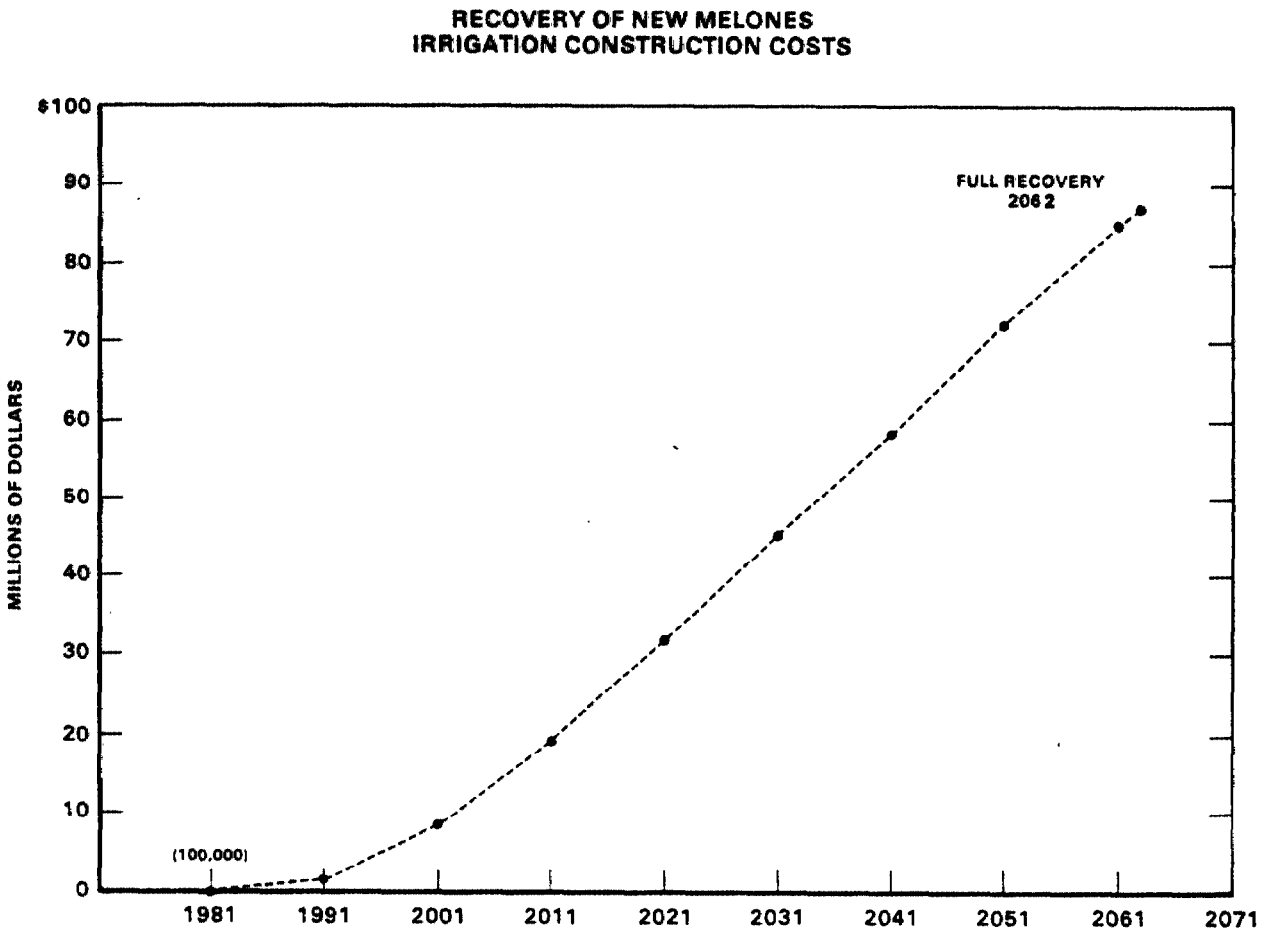
HOW AND WHEN NEW MELONES IRRIGATION CONSTRUCTION COSTS WILL BE RECOVERED

The inclusion of about $87 million of New Melones irrigation construction costs in the CVP-wide rate base in 1979 added about 40 cents to all CVP irrigators' rates as computed under the Bureau's current water marketing policy. However, the Bureau cannot adjust most existing CVP irrigation water service rates to include this 40-cent cost increase because of existing long-term, nonadjustable contracts. If all CVP irrigation water service contracts could have been adjusted in 1979 when the increased rates were calculated, the Bureau would have been able to recover the New Melones capital investment for irrigation within 50 years provided actual CVP water deliveries over that period materialized as planned.

To determine the effect of being unable to adjust all long-term CVP water service contracts in 1979, we determined when the 40-cent increase in water rates could be passed on to each CVP irrigation water user. In making this determination,

we assumed that actual water deliveries will be the contract maximum and the 40-cent per acre-foot increase will be extended to all irrigation water users as soon as their existing contracts will allow. Ordinarily when a water service contract is amended, the Bureau can adjust water service rates. Consequently, the results of our analysis could change if water users amend their contracts to include additional project benefits prior to when their contracts are adjustable by the Bureau or when they expire.

The following graph illustrates when and how much CVP water users will contribute towards recovery of the $87 million of New Melones irrigation construction costs.



During the decade between 1981-1990, approximately $1.2 million, or less than 2 percent, of the $87 million of irrigation construction costs allocated to New Melones will be recovered (on the basis of 40 cents an acre-foot of water delivered). The last existing CVP water service contract cannot be adjusted until 2011--30 years after the first water user started paying the 40-cent increment for New Melones in 1981. At that time only about $19 million or approximately 22 percent of the capital costs will be recovered. Full recovery of New Melones

costs will not occur until the year 2062, approximately 82 years after the first water service contract included the 40-cent cost increment.

Although our computations show that New Melones construction costs will not be recovered until 2062, it should be recognized that the possibility exists that they could be recovered much earlier from project power revenues. According to Bureauofficials, total CVP construction costs (including those for New Melones) will be recovered by 2030, if no additional units are added to the CVP prior to that time. Current Bureau policy requires that all CVP construction costs allocated to irrigation must be repaid within 50 years following completion of the last project unit. Accordingly, if New Melones turns out to be the final unit of the CVP, all irrigation project costs must be repaid by 2030.

According to the Bureau's latest repayment projections, an unpaid irrigation construction cost balance of about $114 million will be recovered by 2030. The Bureau's contention that the CVP will be paid out in that year is based on the assumption that project power revenues[3] will be available to repay the outstanding irrigation construction cost obligation remaining at the end of the 50-year repayment period.

If another unit is added to the CVP prior to 2030, however, the repayment period would be extended to 50 years beyond the completion date of that unit, and additional power revenue assistance would be required to repay any unpaid irrigation costs.

3/The repayment of irrigation costs that are beyond the irrigator's ability to pay is contemplated by the Bureau to be accomplished by revenues from the sale of project power. Such revenues would be credited to irrigation repayment after power revenues have repaid the project costs allocated to power. Such use of power revenues has been authorized by Congress in individual project acts.

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