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WASHINGTON, D.C. 20548

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RESOURCES, COMMUNITY,  
AND ECONOMIC DEVELOPMENT  
DIVISION

July 19, 1983

The Honorable William R. Gianelli  
Assistant Secretary of the Army (Civil Works)

Dear Mr. Gianelli:

Subject: Opportunities to Increase Operation and  
Maintenance Cost Recovery on Water Projects

In our August 7, 1981, report entitled "Changes in Federal Water Project Repayment Policies Can Reduce Federal Costs" (CED-81-77), we pointed out, among other things, that the Army Corps of Engineers uses original water project cost allocations to charge reservoir users for operation and maintenance (O&M) costs even when current use is different from the original cost allocation. To achieve more equitable O&M cost recovery from current project users, we recommended that the Secretary of the Army establish policies that would require all project purposes to share, in accordance with actual reservoir uses, in O&M expenses.

On October 5, 1981, you responded that our recommendations were being considered as part of an overall study of water supply cost recovery/repayment and that such a study would take several months to complete. Also, you added that decisions on appropriate remedial measures would follow.

During our recent review of the O&M cost recovery subject, we identified additional examples of Corps' water projects that further support the need to reallocate O&M costs on a current-use basis. Although reallocating costs on a current-use basis would help provide for the recovery of future O&M costs incurred on these projects, it will not affect recovery of past mainstem Missouri River project irrigation O&M costs incurred and unrecovered, which now total about \$25 million. The Corps needs to determine the extent to which these past costs can be recovered and take appropriate action.

OBJECTIVE, SCOPE, AND METHODOLOGY

Our overall objective was to determine for four water resource projects the extent to which the Corps' O&M cost recovery systems since our 1981 report assured fair and timely cost recovery from Federal water project users, in accordance with

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Federal law and Corps policies. In July and September 1982 we reported<sup>1</sup> our conclusions and recommendations to the Secretary of the Army on the need to (1) establish procedures to ensure that irrigation O&M costs are recovered at jointly managed facilities (facilities managed by the Corps and Bureau of Reclamation) and (2) require water sales contracts of the mainstem Missouri River reservoirs to include provisions for reimbursement of O&M expenses.

In addition, the objectives of this review were to determine (1) the rate of O&M cost recovery from reimbursable purposes, the cost allocation methods used, and the impact on O&M cost recovery of reallocating costs on a current-use basis for three Corps projects--the mainstem Missouri River and Willamette Basin Projects (containing 17 reservoirs) and the Bonneville Project and (2) why the Corps had not adopted our 1981 recommendation to reallocate costs on a current-use basis. We reviewed applicable laws and analyzed Corps' policies, procedures, and records for the selected projects and the basis the Corps used to determine the projects' O&M costs. We also spoke with Corps officials in Omaha, Nebraska; Kansas City, Missouri; Portland, Oregon; and Washington, D.C.

Because we did not cover all Corps locations and the projects were selected because of known changes in reservoir operations that affected project benefits, the findings in this report may not be indicative of conditions at other Corps locations and projects not covered by our review. Except as noted above, we made this review in accordance with generally accepted government audit standards.

O&M COST ALLOCATIONS  
DO NOT RECOGNIZE  
CHANGES IN USERS

During the life of a water project, changes may be made in reservoir operations which affect project benefits. Since the Corps uses the O&M cost allocation made at the time of construction completion, or some earlier time period, as the basis of cost allocation and recovery, changes in operations after the project's completion are not recognized in annual O&M cost allocations. Whenever O&M cost allocations do not recognize increases in benefits related to reimbursable purposes, which have developed over time, costs allocated to these purposes can be significantly understated.

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<sup>1</sup>GAO/CED-82-107 and 123 dated July 1, 1982, and September 7, 1982.

For example, the Corps allocated about \$3.1 million of O&M costs to irrigation during fiscal year 1981 on two projects--the six mainstem Missouri River reservoirs and the 11 Willamette Basin Project reservoirs--even though few or no irrigators were using these projects. Consequently, only about \$317,000<sup>2</sup> of the \$3.1 million was recovered and the taxpayers absorbed the remaining \$2.8 million. Since these projects are serving other reimbursable purposes, an allocation based on actual use would result in the recovery of more O&M costs. Corps' division officials told us that they did not change the original cost allocations to recognize actual project uses because Corps' policies did not suggest making such changes in cost allocations. Also, if such allocations were changed, the officials believed that the process would be expensive to complete and the power industry--a primary user of project water--would oppose it. Details on the cost allocations made for these 17 reservoirs are discussed below:

--Ever since its first cost study in 1958, the Corps has allocated 23 percent of the joint<sup>3</sup> O&M costs on six mainstem Missouri reservoirs to irrigators. However, the Federal Government has not sold any water for irrigation. As a result, for fiscal year 1981 alone, the Corps did not recover \$2.2 million of O&M costs allocated to irrigation. The Corps, however, missed an opportunity to recover some of these costs. Increases in one reservoir's hydroelectric power output attributable to greater than expected water flow, design changes, and more generators have resulted in a 58-percent greater generating capacity in 1981 than that used as the basis for the 1958 O&M cost allocation. If the project's cost allocation were updated to recognize the increase in power output, the change would increase power's 1981 allocation by \$460,000. Instead, these costs were allocated to irrigation. Since there were no irrigation users, none of the costs were recovered.

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<sup>2</sup>Of the \$317,000 that was recovered, \$300,000 represented other receipts that were applied to irrigation O&M costs.

<sup>3</sup>Costs for parts of a water project that cannot be isolated to a single purpose. For example, the cost of a dam structure that simultaneously serves power production, flood control, and navigation.

--The Corps' Willamette Basin Project has 11 reservoirs with 1.6 million acre-feet of storage space reserved for irrigation. Although this reservoir space has been available for decades, only 1 percent of the available water was sold to irrigators in fiscal year 1981. In that year, the Corps recovered only \$16,800 of the \$638,800 in O&M costs it had allocated to irrigation based on the project's original cost allocation. The taxpayers absorbed the remaining \$622,000. Once again, however, the Corps missed an opportunity to recover some of these costs when project benefits changed. Five of the Willamette reservoirs use water reserved for irrigation to generate hydroelectric power. In fiscal year 1981, the Corps only recovered \$3,600 of these reservoirs' O&M costs of \$167,500 allocated to irrigation. If power had been allocated a portion of the unrecovered O&M expenses based upon its share of project use, about \$69,000 of the \$167,500 would have been recovered.

Another project whose current benefits have changed significantly since the project's original cost allocation is the Bonneville Project located on the Oregon-Washington border.

--Based on a 1945 cost allocation, the Corps annually allocates 50 percent of over \$2 million in joint O&M costs on the Bonneville Project to power and allocates the remaining 50 percent to nonreimbursable navigation. The allocation has not been changed since 1945. Although Corps officials said that navigation benefits have changed little since the 1945 allocation, power generating capacity has increased appreciably. For example, in 1978, a \$27-million modification for power peaking was completed. Since peaking power is more valuable than the prior baseload power, the modification increased power benefits considerably. Also, an already partially operating \$650-million second powerhouse is scheduled to be completed in 1984. When fully operational, power output will increase more than 100 percent above the original allocation. A cost reallocation based on current project benefits would increase power's share of joint O&M costs considerably since power is a reimbursable purpose.

Corps' district officials told us that reimbursable power should not share in more than 50 percent of the joint O&M costs regardless of actual project benefits because the Bonneville Project was authorized primarily as a navigation project. This is not consistent with generally accepted cost allocation practices, which consist of assigning to each project purpose all specific or direct costs and sharing joint project costs in proportion to the benefits associated with that purpose. Adoption of our 1981 recommendation to base O&M cost allocations on actual use would correct this situation.

ACCUMULATION OF LARGE  
UNPAID IRRIGATION O&M EXPENSES

As discussed previously, the allocation of O&M costs on the six mainstem Missouri River reservoirs has been based on a 1958 cost study. The Corps conditionally approved this study because all exigencies could not be evaluated during the study, and it was recognized that a reevaluation and reallocation of costs might be needed at some future time. The anticipated irrigation usage envisioned in the 1958 cost study has not occurred, and consequently, an unpaid irrigation O&M account of about \$25 million has accumulated through fiscal year 1981.

One reason why this large unpaid irrigation O&M account exists is the Corps did not reallocate O&M costs to actual users of the reservoirs' water. The hydroelectric power industry has become the major reimbursable user of this water. Coupled with the lack of use of water by irrigators and increases in power generating capacity, power consumers have benefited substantially because the Corps has not adjusted O&M costs charged to power since the 1958 cost study.

This inequity was recognized in a January 14, 1983, letter, in which the Commander of the Corps' Missouri River Division advised the Director of Civil Works, Office of the Chief of Engineers that

"A need exists to reallocate the investment costs of the main stem reservoir system. The ultimate use concept of the 1958 allocation results in an understatement of the costs allocated to power, in particular, but also to other purposes currently being performed by the main stem system. The current system utilization provides a great deal of power production for regional consumers at a rate subsidized by the taxpaying public. This subsidy is a result of a large quantity of costs allocated to irrigation which is presently unimplemented. Revision of the cost allocation to reflect current system operation would provide the opportunity for the Federal government to receive a more equitable price for services rendered, thus minimizing subsidies from the general taxpaying public."

We agree with the Commander of the Corps' Missouri River Division. Current and past users have benefited substantially from a portion of the water associated with the unpaid \$25 million irrigation O&M account.

## WHY O&M COSTS HAVE NOT BEEN REALLOCATED TO ACTUAL WATER USERS

In May 1983 we discussed with the Deputy Assistant Secretary of the Army (Civil Works) the desirability of reallocating O&M costs to actual users of project water in view of these examples. He pointed out that although the Army agreed with the current-use concept, it had not adopted our recommendation because of concerns about the administrative-cost and timing of cost reallocations and whether the resulting price increase to project users would price the Corps out of the market if users found lower cost alternatives to purchasing Corps' water. Corps' district office officials also argued that users would oppose water price increases. The Deputy Assistant Secretary of the Army told us that further study of this issue was needed and that they were in the process of hiring a full-time person who would analyze and make recommendations to improve cost recovery on Corps' projects.

## CONCLUSIONS

We recognize that water price increases will be opposed by users who have historically benefited from taxpayer subsidized water prices and that market conditions influence the extent to which the Corps can raise the price of its water. We also agree that the Corps will incur administrative-costs in making current-use cost reallocations.

However, in view of the opportunities available to reduce Federal spending by reallocating costs on a current-use basis as illustrated by the Willamette, mainstem Missouri, and Bonneville project examples, we continue to believe such reallocations should be made. Given present Federal budget problems and the administration's efforts to recover from users more of the cost of developing, operating, and maintaining water resources projects in areas other than cost reallocations such as navigation, we believe that all project purposes should share, in accordance with actual reservoir use, in O&M expenses.

Although such a policy will help ensure that future reimbursable O&M costs are recovered, it will not affect recovery of past mainstem Missouri irrigation O&M costs incurred and unrecovered, which now total \$25 million. Consequently, the Corps needs to determine the extent to which these past costs can be recovered and, if appropriate, take action to recover them.

## RECOMMENDATIONS

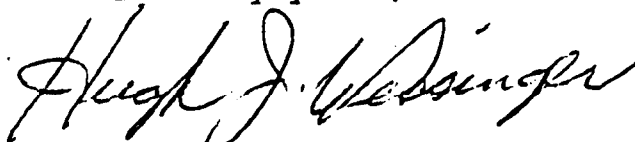
To achieve more equitable O&M cost recovery from current water project users, we recommend that you direct that (1) the

impact on Federal revenues of reallocating O&M costs on a current-use basis as illustrated by the examples discussed in this report be considered in the ongoing water supply cost recovery/repayment study and (2) the Chief, Corps of Engineers seek, to the extent permitted under executed mainstem Missouri water sales contracts, payments from users for past unrecovered irrigation O&M costs, which now total about \$25 million.

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We would appreciate being advised as to any actions you may take on matters discussed in this report. Copies of this report are being sent to the Director, Office of Management and Budget; the Secretary of the Army; and the Chief, Corps of Engineers.

Sincerely yours,



Hugh J. Wessinger  
Associate Director  
Senior Level