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

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RESOURCES, COMMUNITY,  
AND ECONOMIC DEVELOPMENT  
DIVISION

JULY 26, 1985

B-218903



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The Honorable Howard M. Metzenbaum  
United States Senate

Dear Senator Metzenbaum:

Subject: Recovering a Portion of Federal Irrigation Project  
Construction Costs Through Revenues From Department  
of Energy Electric Power Sales (GAO/RCED-85-128)

As requested in your letter of November 8, 1984, we are examining the current basis for pricing electric power marketed by the Department of Energy's power marketing administrations (PMAs). We plan to brief you on the results of this work at a later date. However, on March 7, 1985, you asked us to provide information on the recovery of federal irrigation project construction costs through PMA power sales revenues. This letter provides that information and discusses three main issues:

- The legal requirements for recovering federal irrigation-related construction costs through power sales revenues.
- The amount of irrigation-related construction costs projected by the Bureau of Reclamation (Reclamation) to be recovered through power sales revenues.
- How the PMAs are providing for the recovery of irrigation-related construction costs through power sales revenues.

In summary, some construction costs for multipurpose water projects are allocated among those who benefit from the projects. For example, federal reclamation law generally provides that water project construction costs allocated to irrigation water uses are to be repaid to the Treasury by irrigators within 50 years from the date water is first delivered. Similarly, costs allocated to the generation of power are recovered through power sales revenues. In many instances, however, power sales revenues are also used to repay those costs that are allocated to irrigation uses but are beyond the irrigators' ability to pay. As of September 30, 1984, Department of the Interior records showed that about \$14.1 billion in irrigation project construction costs are

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to be recovered from power sales revenues. Of that amount, \$8.4 billion is for projects that have been authorized but have not yet been built.

According to PMA officials, the PMAs plan to repay the irrigation costs at or near the end of the legislatively required repayment period and, since no project repayment period has lapsed, they have not yet (as of June 1985) had to repay any of these costs. One of the two PMAs with irrigation-related repayment responsibilities plans to make its first payment during fiscal year 1985; the other PMA plans to make its first payment during fiscal year 1997.

To obtain the information requested, we reviewed (1) legislation that establishes general repayment requirements for irrigation project construction costs and legislation that establishes specific repayment requirements for some individual projects, (2) cost data and financial records provided by Reclamation and the PMAs, and (3) the repayment studies of the two PMAs (Bonneville and Western). We also interviewed Reclamation and PMA officials responsible for power marketing and rates. Our objectives, scope, and methodology are discussed in greater detail in an enclosure to this letter.

#### BACKGROUND

The Department of the Interior's Bureau of Reclamation and the U.S. Army's Corps of Engineers (Corps) are the principal federal agencies that build and operate multipurpose water projects. Reclamation constructs and operates projects for storing, diverting, or developing water resources to reclaim land in the arid or semiarid areas of the country. The Corps constructs and operates water projects associated with rivers, harbors, and waterways. Both agencies build and operate multipurpose reservoirs that provide municipal and industrial water supplies, hydroelectric power generation, irrigation, fish and wildlife enhancement, flood control, outdoor recreation, and river regulation and control.

Federal law generally provides that construction costs associated with certain water project purposes are to be recovered from the project's beneficiaries and repaid to the Treasury. For example, costs associated with irrigation and power generation are generally to be repaid by irrigators and power users, respectively. On the other hand, costs associated with some other purposes that benefit the public, such as flood control, are supported by congressional appropriations and are not repaid.

Initially, Reclamation and the Corps estimate construction costs to be allocated to specific project purposes and identify

costs that are to be recovered. After construction is completed, the agencies do a final cost allocation. The agencies allocate costs among those who benefit from the project. For some projects, Reclamation determines--through an economic analysis--the extent to which irrigators have the ability to pay the costs allocated to irrigation; those allocated costs that are beyond the irrigators' ability to pay are then assigned by Reclamation for recovery from federal electric power sales revenues and other miscellaneous revenues.

The Department of Energy has five PMAs--Alaska, Bonneville, Southeastern, Southwestern, and Western. The PMAs transmit and sell power generated at facilities operated primarily by Reclamation and the Corps. Under federal law and a Department of Energy order, the PMAs are to set power rates at a level that will recover (1) operating costs, (2) construction costs allocated to power generation (with interest), and (3) construction costs allocated to irrigation (without interest) that exceed the irrigators' ability to pay. Reclamation has determined that some irrigation-related construction costs within the areas of responsibility of two PMAs (Bonneville and Western) are beyond the irrigators' ability to pay and these costs will be recovered through power sales revenues.

LEGAL REQUIREMENTS FOR RECOVERING  
FEDERAL IRRIGATION PROJECT  
CONSTRUCTION COSTS

In the Reclamation Project Act of 1939, the Congress authorized the Secretary of the Interior to undertake projects to provide water not only for irrigation, but also for the generation of power, municipal water supplies, flood control, navigation controls, and recreation. The act provided for allocating project construction costs to all users, such as those receiving hydroelectric power and municipal and industrial water users, in addition to irrigators, according to the extent to which the project was dedicated to each category of use. According to the act, costs associated with particular uses are to be recovered from that category of user. For example, that part of the cost which is allocated to irrigation would be recovered from the irrigators, and that part of the cost allocated to power would be recovered from power revenues.

The 1939 act directs that the irrigation portion of construction costs be repaid in annual installments over a period of not more than 40 years, following a development period of up to 10 years after water is delivered. The act authorizes the Secretary

of the Interior to adopt a variable payment formula so that irrigators can make payments on the basis of their annual crop returns; irrigators may make reduced payments in bad years, as long as full repayment is made within the 40-year period. Individual project-authorizing legislation, however, may establish different repayment requirements.

With respect to the sale of power generated by a project, the 1939 act directs that the Secretary of the Interior sell power at rates that will produce revenues sufficient to recover, among other things, the share of the construction costs attributable to the project's power generation function.<sup>1</sup> In many instances, power revenues are also used to recover construction costs allocated to irrigation but which are beyond the irrigators' ability to pay. This has become known as irrigation assistance. In connection with past work (B-198376, July 10, 1981), we concluded that the 1939 act does not authorize the use of power revenues to repay irrigation costs. We observed, however, that a substantial number of individual project authorizations either require or allow irrigation assistance.

In order to obtain as much of the requested information as expeditiously as possible, we did not review the authorizing legislation for each project where irrigation assistance is provided. Of the legislation we did review, as discussed below, we found that the authorizing legislation for irrigation projects with power-generating facilities generally provided for irrigation assistance. For example, the legislation authorizing the Collbran project in Colorado (a multipurpose project designed for irrigation and the production of power) provided that net revenues from the sale of power are available to recover those construction costs that are allocated to irrigation but which are beyond the ability of the irrigators to pay. However, it is difficult to make generalizations about recovering irrigation-related construction costs for those projects without power-generating facilities.

The authorizing legislation for certain projects without power-generating facilities provides that irrigation costs may be recovered through power revenues produced from other federal projects. For example:

--The construction costs of the Manson unit in Washington and the Dalles project in Oregon that were allocated to irrigation may be recovered from Bonneville's power revenues if irrigators are unable to pay those costs.

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<sup>1</sup>The Department of Energy Organization Act transferred Interior's power-marketing functions to the Secretary of Energy in 1977.

--Costs allocated to irrigation for the Mann Creek irrigation project in Idaho may be recovered from revenues produced by the sale of power marketed through the federal power system in southern Idaho.

--Net power revenues of the federal Columbia River power system may be used to recover construction costs allocated to irrigation for any Pacific Northwest project authorized under the reclamation laws after 1966. This legislation is, however, subject to certain limitations. (See p. 8.)

On the other hand, the authorizing legislation for other irrigation projects without power-generating facilities does not provide for irrigation assistance. In these cases, general reclamation law (i.e., the 1939 act) would control. As we concluded in past work (B-198376, July 10, 1981), general reclamation law does not authorize irrigation assistance. For example, the legislation authorizing the San Angelo project in Texas does not provide for any irrigation assistance, and Reclamation has not assigned irrigation costs from this project to be recovered from power sales revenues.

Since we did not review the authorizing legislation for each project where irrigation assistance is provided, we cannot--at this time--definitively answer your question about the legal requirements on a project-by-project basis for recovering irrigation-related construction costs through power sales revenues nor can we verify the amount of irrigation-related construction costs reported by Reclamation. We have, however, requested Reclamation to identify (1) each project for which irrigation assistance is provided, (2) the legislation authorizing the project, and (if different) (3) the legislation authorizing the assistance, and we will provide this information to you at a later date.

IRRIGATION CONSTRUCTION COSTS TO  
BE RECOVERED FROM POWER REVENUES

According to Reclamation, about \$14.1 billion of the costs associated with irrigation projects is to be recovered through power revenues. The \$14.1 billion estimate is about 40 percent of the total estimated project costs. However, about \$8.4 billion of

the \$14.1 billion represents costs for projects or project-blocks<sup>2</sup> that have been authorized by the Congress but for which construction has not yet begun or for which the Congress has not yet appropriated funds.

About \$475 million of the irrigation assistance costs, or 3 percent, is for projects that have been suspended. These projects include the Oahe Unit of the Pick-Sloan Missouri Basin Program and the Teton project. According to Reclamation officials, these projects are now in litigation, and the ultimate disposition of these costs is unclear. They said that until the lawsuits are settled, and in the absence of any other guidance, Reclamation continues to report the costs to the appropriate PMA.

The table below shows the project status and the amount of irrigation costs expected to be recovered through Bonneville and Western power revenues as reported by Reclamation.

Estimated Amount of Irrigation Assistance to Be Recovered  
Through PMA Power Revenues as of September 30, 1984

<u>Projects or project blocks</u>	<u>Bonneville</u>	<u>Western</u>	<u>Total</u>
	----- (000 omitted) -----		
Completed	\$ 638,855	\$ 605,067	\$1,243,922
Under construction	112,722	3,885,046	3,997,768
Authorized--no construction	1,912,791	6,483,770	8,396,561
Suspended	<u>48,319</u>	<u>426,931</u>	<u>475,250</u>
Total	<u>\$2,712,687</u>	<u>\$11,400,814<sup>a</sup></u>	<u>\$14,113,501</u>

<sup>a</sup>Of the \$11.4 billion, \$1.03 billion is from fiscal year 1983 data. Fiscal year 1984 data were not available at the time of our review.

<sup>2</sup>Some larger projects are divided into blocks. Where possible, we classified each block separately as completed, under construction, or authorized but not under construction.

BONNEVILLE'S AND WESTERN'S PRACTICES  
FOR RECOVERING IRRIGATION ASSISTANCE  
COSTS FROM POWER SALES REVENUES

Department of Energy Order RA 6120.2 states that power rates must be sufficient to recover (1) on an annual basis, all operating costs including operation and maintenance, purchased power, transmission services, and interest on the unamortized investment in federal power facilities, (2) within 50 years, except as otherwise provided by law, the capital investment in power facilities, and (3) within the same time period established for irrigation water users to repay their share of construction costs, the capital investment in irrigation facilities that is beyond the irrigators' ability to pay.

As part of the rate-setting process, the Department of Energy's Order requires the PMAs to conduct annual power repayment studies. The power repayment study, which is based on a number of assumptions about costs and power sales, shows whether existing power rates will generate revenues in each year of the repayment study period sufficient to recover all costs that a PMA estimates it will incur in each year of the study period. If the study shows that the projected revenues will not be sufficient to cover costs, the PMAs must take steps to raise rates, lower costs, or take other actions so that a revised power repayment study shows that revenues are sufficient.

Reclamation determines the amount of irrigation costs that are to be recovered from power revenues and the dates that the costs are to be repaid. Reclamation reports this information to Bonneville and Western for their power repayment studies. However, because of a time lag between obtaining data from Reclamation and conducting their studies, the cost data in Bonneville's and Western's studies were not identical in all cases with the data Reclamation provided us. In addition, as discussed separately below, Bonneville and Western follow somewhat different practices for their power repayment studies.

Bonneville Power Administration

Bonneville's power repayment study includes the costs of all projects and other system costs that Bonneville will be obligated to pay during the time period covered by the study (52 years). Since Bonneville does not plan to actually repay irrigation assistance costs to the Treasury until the end of the authorized repayment period for each particular irrigation project, any project with a repayment deadline beyond 52 years is not considered in the repayment study.

Public Law 89-561 (Sept. 7, 1966) established limitations on Bonneville's authority to provide irrigation assistance, and placed a restriction on the amount of that assistance. The law was an attempt by the Congress to balance the somewhat conflicting interests of power users and irrigators. As the report of the Senate Committee on Interior and Insular Affairs explains, there are irrigation projects which are desirable, but whose costs are beyond the ability of irrigators to repay. The construction of these projects is made possible by assistance from net power revenues.

Public law 89-561 provides that (1) irrigation assistance can be paid only from net revenues (defined by the act as revenues not required to repay project costs allocated to power and irrigation assistance authorized prior to 1966), (2) construction of irrigation projects after 1966 will be scheduled so that any irrigation assistance provided those projects, together with already authorized irrigation assistance, will not require an increase in Bonneville's power rates, and (3) the total amount of irrigation assistance (for current and future projects) cannot average more than \$30 million per year in any period of 20 consecutive years.

According to the act's legislative history, the key to balancing the interests of power users and water users is the scheduling of construction of post-1966 irrigation projects. The Congress reasoned that the repayment of the irrigation costs of any project authorized after 1966 would not be necessary until 2026 at the earliest, and probably, considering the time needed to construct a project, not until 2030 or 2035. Additionally, the Congress reasoned that by that time, Bonneville should have substantially reduced its power-related costs and could shift its revenues to the repayment of irrigation-related costs without having to increase power rates.

Of the \$2.7 billion in irrigation assistance applicable to Bonneville projects or project blocks, about \$724 million, or 27 percent, was included in the latest power repayment study. The remaining \$2 billion has a recovery due date beyond the 52-year study period. According to officials in Bonneville's Division of Financial Requirements, when the due dates fall within the 52-year period of the power repayment study, those costs will also be included in Bonneville's power repayment studies. These officials also said that Bonneville's total nonirrigation-related costs should begin to substantially decrease by the year 2017.

According to Bonneville's 1984 repayment study, none of its outstanding irrigation assistance debt had come due, and Bonneville had not made any payments on this debt. The first such payment, \$19.1 million for the Boise project, is planned for fiscal

year 1997. (The Boise project was authorized prior to 1966 so Bonneville's repayment of this project's irrigation costs does not fall under the restrictions of Public Law 89-561.)

Western Area Power Administration

Western conducted a separate power repayment study for each of eight projects having irrigation assistance.<sup>3</sup> The time period covered by these studies ranges from 24 to 106 years beyond the year in which the studies are conducted. Western's Chief of the Rates and Statistics Branch explained that except for the Pick-Sloan Missouri Basin Program, the study periods vary depending on the length of time needed to demonstrate that the federal investment in each project will be recovered. To illustrate, he said that construction on the Pick-Sloan Missouri Basin Program is planned so far into the future that they arbitrarily end the power repayment study after 100 years.

Another difference from Bonneville's policies is that Western plans to recover some of the irrigation assistance prior to its due date. Western's Chief of the Rates and Statistics Branch said that if the irrigation assistance is sizable, some of the costs may be recovered gradually, over a few years, immediately prior to the due date to avoid a significant rate increase in the year of the project's due date. However, according to this official, Western's normal policy is to recover the irrigation assistance costs at or near the end of the projects' repayment periods.

Of Western's \$11.4 billion in total projected irrigation assistance debt, about \$7.1 billion, or 63 percent, was included in the 1983 power repayment studies<sup>4</sup> or rate analysis. The remaining \$4.3 billion was excluded for reasons discussed below.

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<sup>3</sup>For one other project (Central Arizona), Western prepared a rate analysis instead of a power repayment study. According to the Western area office Director for Power Marketing and Rates, a full repayment study is not necessary for this project because it has one power feature that primarily provides electric power to pump irrigation water.

<sup>4</sup>Western's 1983 power repayment studies were generally the latest available at the time of our review.

- \$3.7 billion applicable to the Pick-Sloan Missouri Basin Program was excluded because the estimated repayment dates were beyond the 100-year study period.
- \$281 million applicable to the Central Valley Project was excluded because Western's Sacramento office excludes, from its power repayment study, the costs of irrigation blocks that are to be added after the first 5 years of the study period.
- \$192 million applicable to the Central Arizona Project was excluded because the costs for irrigation assistance used in Western's rate analysis were based on Reclamation's fiscal year 1983 estimates. Reclamation's estimate of irrigation assistance on this project increased by \$192 million between fiscal years 1983 and 1985.
- \$77 million applicable to the Washoe project in California was excluded because, according to Western's Sacramento Director of the Division of Rates and Studies, when the 1983 power repayment studies were prepared, Western had not received information from Reclamation on the irrigation assistance applicable to this project.

In addition to the above, Western included in its repayment study on the Colorado River Storage Project \$53 million more in irrigation assistance than Reclamation reported. At the time of our review, Reclamation and Western were working to reconcile this difference.

According to Western's repayment studies, none of the irrigation assistance debt has come due and Western has not made any payments on this debt. The first payment of \$907,000 for the Colorado River Storage project is planned for fiscal year 1985.

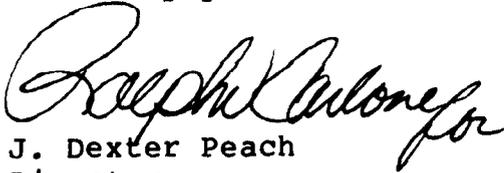
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The views of directly responsible officials were sought during the course of our work and are incorporated in the report where appropriate. In accordance with your wishes, we did not request agency officials to review and comment officially on a draft of this report. As arranged with your office, unless you publicly announce its contents earlier, we do not plan to further distribute this report until 30 days from its issue date.

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At that time, we will send copies to interested parties and make copies available to others upon request.

Sincerely yours,

A handwritten signature in cursive script, appearing to read "J. Dexter Peach".

J. Dexter Peach  
Director

Enclosure

OBJECTIVES, SCOPE, AND METHODOLOGY

Our work was directed at providing information on three main issues:

- The legal requirements for recovering federal irrigation-related construction costs through power sales revenues.
- The amount of irrigation-related construction costs that are projected by Reclamation to be recovered through power sales revenues.
- How the PMAs are providing for the recovery of irrigation-related construction costs through power revenues.

To determine the legal requirements governing repayment of irrigation project construction costs, we reviewed the Reclamation Act of 1902 and the Reclamation Project Act of 1939. These acts establish general requirements for repaying irrigation costs. We also reviewed a 1944 Department of the Interior Solicitor's decision that interpreted the 1939 act.

In many instances, individual project-authorizing legislation establishes requirements for a particular project that are different from the general requirements of the 1939 act. In order to obtain the requested information expeditiously, we did not review individual project-authorizing legislation for all projects. However, we did review legislation for randomly selected projects to get some idea of the types of specific requirements that differ from those in the general legislation.

To determine the irrigation costs to be repaid through power revenues, we reviewed cost data and financial records provided by Reclamation and the PMAs. We interviewed headquarters and regional Reclamation officials and PMA officials responsible for financial management, rate analysis, and power-marketing activities. We did not independently verify the data provided, although we did compare the costs reported by Reclamation with the costs being accounted for by the PMAs. At the Corps, we interviewed headquarters officials in the Civil Works Division and the Planning Division. According to those officials, the Corps has relatively few irrigation projects whose costs will be recovered through power sales revenues. For those projects, the Corps lets Reclamation account for and report the costs to the PMAs.

ENCLOSURE

ENCLOSURE

To determine how PMAs are providing for the recovery of irrigation costs through power sales revenues, we reviewed Bonneville and Western power repayment studies and interviewed Bonneville and Western officials responsible for power marketing and rates. We also reviewed pertinent records to determine what amount of irrigation costs has been repaid to date.

Our review was performed between March and May 1985 and, except for not verifying the financial data, was in accordance with generally accepted government auditing standards.