B O N N E V I L L E   P O W E R   A D M I N I S T R A T I O N

BP-14 Initial Rate Proposal

Power Revenue Requirements Study

November 2012

BP-14-E-BPA-02

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POWER REVENUE REQUIREMENT STUDY

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COMMONLY USED ACRONYMS AND SHORT FORMS

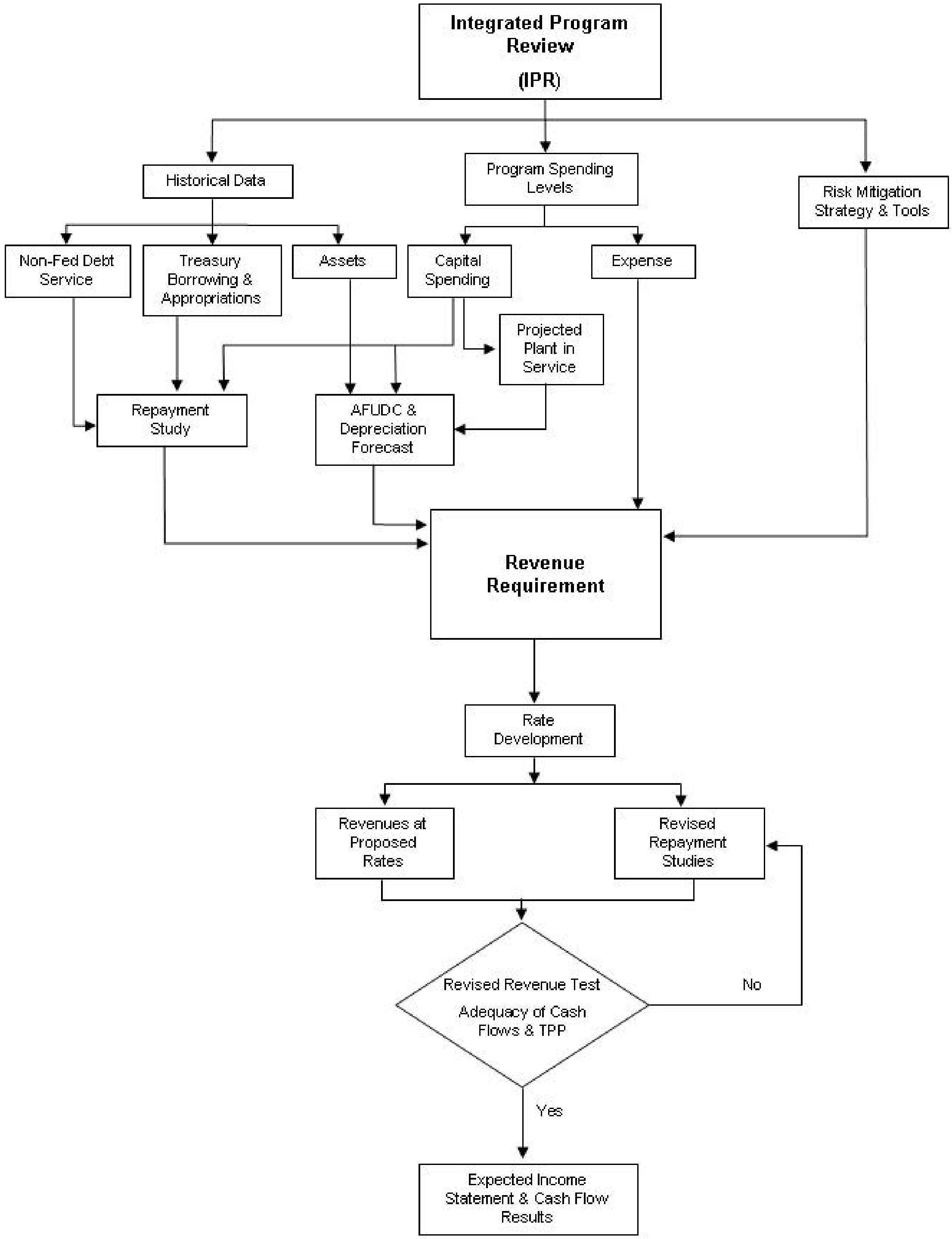
AAC	Anticipated Accumulation of Cash
AGC	Automatic Generation Control
ALF	Agency Load Forecast (computer model)
aMW	average megawatt(s)
AMNR	Accumulated Modified Net Revenues
ANR	Accumulated Net Revenues
ASC	Average System Cost
BiOp	Biological Opinion
BPA	Bonneville Power Administration
Btu	British thermal unit
CDD	cooling degree day(s)
CDQ	Contract Demand Quantity
CGS	Columbia Generating Station
CHWM	Contract High Water Mark
COE, Corps, or USACE	U.S. Army Corps of Engineers
Commission	Federal Energy Regulatory Commission
Corps, COE, or USACE	U.S. Army Corps of Engineers
COSA	Cost of Service Analysis
COU	consumer-owned utility
Council or NPCC	Northwest Power and Conservation Council
CP	Coincidental Peak
CRAC	Cost Recovery Adjustment Clause
CSP	Customer System Peak
CT	combustion turbine
CY	calendar year (January through December)
DDC	Dividend Distribution Clause
dec	decrease, decrement, or decremental
DERBS	Dispatchable Energy Resource Balancing Service
DFS	Diurnal Flattening Service
DOE	Department of Energy
DSI	direct-service industrial customer or direct-service industry
DSO	Dispatcher Standing Order
EIA	Energy Information Administration
EIS	Environmental Impact Statement
EN	Energy Northwest, Inc.
EPP	Environmentally Preferred Power
ESA	Endangered Species Act
e-Tag	electronic interchange transaction information
FBS	Federal base system
FCRPS	Federal Columbia River Power System
FCRTS	Federal Columbia River Transmission System
FELCC	firm energy load carrying capability
FHFO	Funds Held for Others
FORS	Forced Outage Reserve Service

FPS	Firm Power Products and Services (rate)
FY	fiscal year (October through September)
GARD	Generation and Reserves Dispatch (computer model)
GEP	Green Energy Premium
GRSPs	General Rate Schedule Provisions
GTA	General Transfer Agreement
GWh	gigawatthour
HDD	heating degree day(s)
HLH	Heavy Load Hour(s)
HOSS	Hourly Operating and Scheduling Simulator (computer model)
HYDSIM	Hydrosystem Simulator (computer model)
ICE	IntercontinentalExchange
inc	increase, increment, or incremental
IOU	investor-owned utility
IP	Industrial Firm Power (rate)
IPR	Integrated Program Review
IRD	Irrigation Rate Discount
IRM	Irrigation Rate Mitigation
IRMP	Irrigation Rate Mitigation Product
JOE	Joint Operating Entity
kW	kilowatt (1000 watts)
kWh	kilowatthour
LDD	Low Density Discount
LLH	Light Load Hour(s)
LRA	Load Reduction Agreement
Maf	million acre-feet
Mid-C	Mid-Columbia
MMBtu	million British thermal units
MNR	Modified Net Revenues
MRNR	Minimum Required Net Revenue
MW	megawatt (1 million watts)
MWh	megawatthour
NCP	Non-Coincidental Peak
NEPA	National Environmental Policy Act
NERC	North American Electric Reliability Corporation
NFB	National Marine Fisheries Service (NMFS) Federal Columbia River Power System (FCRPS) Biological Opinion (BiOp)
NLSL	New Large Single Load
NMFS	National Marine Fisheries Service
NOAA Fisheries	National Oceanographic and Atmospheric Administration Fisheries
NORM	Non-Operating Risk Model (computer model)
Northwest Power Act	Pacific Northwest Electric Power Planning and Conservation Act
NPCC or Council	Pacific Northwest Electric Power and Conservation Planning Council

NPV	net present value
NR	New Resource Firm Power (rate)
NT	Network Transmission
NTSA	Non-Treaty Storage Agreement
NUG	non-utility generation
NWPP	Northwest Power Pool
OATT	Open Access Transmission Tariff
O&M	operation and maintenance
OATI	Open Access Technology International, Inc.
OMB	Office of Management and Budget
OY	operating year (August through July)
PF	Priority Firm Power (rate)
PFp	Priority Firm Public (rate)
PFx	Priority Firm Exchange (rate)
PNCA	Pacific Northwest Coordination Agreement
PNRR	Planned Net Revenues for Risk
PNW	Pacific Northwest
POD	Point of Delivery
POI	Point of Integration or Point of Interconnection
POM	Point of Metering
POR	Point of Receipt
Project Act	Bonneville Project Act
PRS	Power Rates Study
PS	BPA Power Services
PSW	Pacific Southwest
PTP	Point to Point Transmission (rate)
PUD	public or people's utility district
RAM	Rate Analysis Model (computer model)
RAS	Remedial Action Scheme
RD	Regional Dialogue
REC	Renewable Energy Certificate
Reclamation or USBR	U.S. Bureau of Reclamation
REP	Residential Exchange Program
RevSim	Revenue Simulation Model (component of RiskMod)
RFA	Revenue Forecast Application (database)
RHWM	Rate Period High Water Mark
RiskMod	Risk Analysis Model (computer model)
RiskSim	Risk Simulation Model (component of RiskMod)
ROD	Record of Decision
RPSA	Residential Purchase and Sale Agreement
RR	Resource Replacement (rate)
RRS	Resource Remarketing Service
RSS	Resource Support Services
RT1SC	RHWM Tier 1 System Capability
RTO	Regional Transmission Operator
SCADA	Supervisory Control and Data Acquisition

SCS	Secondary Crediting Service
Slice	Slice of the System (product)
T1SFCO	Tier 1 System Firm Critical Output
TCMS	Transmission Curtailment Management Service
TOCA	Tier 1 Cost Allocator
TPP	Treasury Payment Probability
Transmission System Act	Federal Columbia River Transmission System Act
TRL	Total Retail Load
TRM	Tiered Rate Methodology
TS	BPA Transmission Services
TSS	Transmission Scheduling Service
UAI	Unauthorized Increase
ULS	Unanticipated Load Service
USACE, Corps, or COE	U.S. Army Corps of Engineers
USBR or Reclamation	U.S. Bureau of Reclamation
USFWS	U.S. Fish and Wildlife Service
VERBS	Variable Energy Resources Balancing Service (rate)
VOR	Value of Reserves
VR1-2014	First Vintage rate of the BP-14 rate period
WECC	Western Electricity Coordinating Council (formerly WSCC)
WIT	Wind Integration Team
WSPP	Western Systems Power Pool

Figure 1: Generation Revenue Requirement Process



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1. INTRODUCTION

1.1 Purpose of Study

The purpose of the Power Revenue Requirement Study (Study) is to establish the revenues from wholesale power rates and other power sales and services that are necessary to recover, in accordance with sound business principles, the Federal Columbia River Power System (FCRPS) costs associated with the production, acquisition, marketing, and conservation of electric power. The Study includes recovery of the Federal investment in hydro generation, fish and wildlife, and conservation costs; Federal agencies' operations and maintenance (O&M) expenses allocated to power; capitalized contract expenses associated with non-Federal power suppliers such as Energy Northwest (EN); other power purchase expenses, such as short-term power purchases; power marketing expenses; cost of transmission services necessary for the sale and delivery of FCRPS power; and all other generation-related costs incurred by the Administrator pursuant to law.

The cost evaluation period, as defined by the Federal Energy Regulatory Commission (Commission), is the period extending from the last year for which historical information is available through the proposed rate approval period. The cost evaluation period for this rate filing includes Fiscal Year (FY) 2013 and the proposed rate approval period (rate period), FY 2014–2015. This Study for the rate period FY 2014–2015 is based on generation revenue requirements that include the results of generation repayment studies. This Study does not include the revenue requirement or a cost recovery demonstration for Bonneville Power Administration's (BPA) transmission function. *See* Transmission Revenue Requirement Study, BP-14-E-BPA-08.

This Study outlines the policies, forecasts, assumptions, and calculations used to determine the power revenue requirement. The Power Revenue Requirement Study Documentation, BP-14-E-BPA-02A, contains key technical assumptions and calculations, the results of the generation repayment studies, and further explanation of the repayment program and its outputs.

The revenue requirement for this Study is developed using a cost accounting analysis comprised of three parts. First, repayment studies for the generation function are prepared to determine the schedule of amortization payments and to project annual interest expense for bonds and appropriations that fund the Federal investment in hydro, fish and wildlife recovery, conservation, and other generation assets. Repayment studies are conducted for each year of the rate period and extend over the 50-year repayment period. Second, generation operating expenses, based on Integrated Program Review (IPR) program spending forecasts (see Figure 1), and Minimum Required Net Revenue (MRNR) are projected for each year of the rate period. Third, annual Planned Net Revenues for Risk (PNRR) are determined after taking into account risks, BPA's cost recovery goals, and other risk mitigation measures, as described in the Power Risk and Market Price Study, BP-14-E-BPA-04. From these three steps, the revenue requirement is set at the revenue level necessary to fulfill cost recovery requirements and objectives. This process is depicted in Figure 1. Once the revenue requirement is completed, the costs identified in it are passed to the rate development process, where they are allocated to the appropriate cost pools and used to develop rates.

Consistent with Department of Energy (DOE) Order RA 6120.2 and the standards applied by the Commission on review of BPA's rates, the adequacy of both current and proposed rates must be demonstrated. BPA conducts a current revenue test to determine whether revenues projected from current rates meet cost recovery requirements for the rate period and the repayment period. If the current revenue test indicates that cost recovery and risk mitigation requirements are met, current rates could be extended through the proposed rate approval period. The current revenue test, described in section 3.2 of this Study, demonstrates that revenues from current rates will not recover the generation revenue requirement for the rate period. The revised revenue test, which is performed after calculation of the proposed power rates, determines whether projected revenues from proposed rates meet cost recovery requirements and objectives for the rate test and repayment periods. The revised revenue test, contained in section 3.3 of this Study, demonstrates that revenues from the proposed power rates will recover generation costs in the rate period and over the ensuing 50-year repayment period. Rate period costs are projected to be recovered with a very high confidence level, meeting BPA's 95 percent probability standard that all U.S. Treasury payments will be paid on time and in full.

Table 1 summarizes the revised revenue test and shows projected net revenues from proposed power rates for FY 2014–2015. These net revenues are the lowest level necessary to achieve BPA's cost recovery objectives, when combined with other risk mitigation tools, given hydro condition uncertainty, market price volatility, and other risks.

Table 2 shows planned generation amortization payments to the U.S. Treasury during the rate period and irrigation assistance payments that are due to be paid from power revenues.

1.2 Legal Requirements

This section summarizes the statutory framework that guides the development of BPA's generation revenue requirement and the recovery of BPA's generation costs from the various users of the FCRPS, and the repayment policies that BPA follows in the development of its revenue requirement.

1.2.1 Governing Statutes

BPA's revenue requirements are governed primarily by four statutes: The Bonneville Project Act of 1937, P.L. No. 75-329, 50 Stat. 731; the Flood Control Act of 1944, P.L. No. 78-534, 58 Stat. 890, amended 1977; the Federal Columbia River Transmission System Act (Transmission System Act) of 1974, P.L. No. 93-454, 88 Stat. 1376; and the Pacific Northwest Electric Power Planning and Conservation Act (Northwest Power Act), P.L. No. 96-501, 94 Stat. 2697. Other statutory provisions that guide the development of BPA's revenue requirements include the Federal Power Act, as amended by the Energy Policy Act of 1992 (EPA-92), P.L. No. 102-486, 106 Stat. 2776; the Colville Settlement Act, P.L. No. 103-436, 108 Stat. 4577; and the Omnibus Consolidated Rescissions and Appropriations Act of 1996, P.L. No. 104-134, 110 Stat. 132. DOE Order "Power Marketing Administration Financial Reporting," RA 6120.2, issued by the Secretary of Energy, provides guidance to Federal power marketing agencies regarding repayment of the Federal investment.

1.2.2 Legal Requirements Governing the FCRPS Revenue Requirement

BPA's power rates must be set in a manner that ensures revenue levels sufficient to recover fully BPA's generation costs. This requirement is set forth in section 7 of the Bonneville Project Act, 16 U.S.C. § 832f (amended 1977):

> Rate schedules shall be drawn having regard to the recovery (upon the basis of the application of such rate schedules to the capacity of the electric facilities of Bonneville project) of the cost of producing and transmitting such electric energy, including the amortization of the capital investment over a reasonable period of years ….

Development of the generation revenue requirement is a critical component of meeting this ratemaking directive. Section 9 of the Transmission System Act, 16 U.S.C, § 838g, also strongly reflects this cost recovery principle, providing that rates be set:

> [A]t levels to produce such additional revenues as may be required, in the aggregate with all other revenues of the Administrator, to pay when due the principal of, premiums, discounts, and expenses in connection with the issuance of and interest on all bonds issued and outstanding pursuant to this Act, and amounts required to establish and maintain reserve and other funds and accounts established in connection therewith.

Similarly, section 7(a)(1) of the Northwest Power Act, 16 U.S.C. § 839e(a)(1), provides:

> The Administrator shall establish, and periodically review and revise, rates for the sale and disposition of electric energy and capacity and for the transmission of non-Federal power. Such rates shall be established and, as appropriate, revised to recover, in accordance with sound business principles, the costs associated with the acquisition, conservation, and transmission of electric power, including the amortization of the Federal investment in the Federal Columbia River Power System (including irrigation costs required to be repaid out of power revenues) over a reasonable period of years and the other costs and expenses incurred by the Administrator pursuant to this Act and other provisions of law. Such rates shall be established in accordance with Sections 9 and 10 of the Federal Columbia River Transmission System Act (16 U.S.C. § 838), Section 5 of the Flood Control Act of 1944, and the provisions of this Act.

The Northwest Power Act also makes it clear that a primary purpose of confirmation of BPA rates by the Commission is to ensure that the revenue requirement is adequate to ensure timely U.S. Treasury repayment. Section 7(a)(2), 16 U.S.C. § 839e(a)(2), provides:

> Rates established under this section shall become effective only, except in the case of interim rules as provided in subsection (i)(6) of this section, upon confirmation and approval by the Federal Energy Regulatory Commission upon a finding by the Commission, that such rates—
>
> (A) are sufficient to assure repayment of the Federal investment in the Federal Columbia River Power System over a reasonable number of years after first meeting the Administrator's other costs,
>
> (B) are based upon the Administrator's total system costs, and
>
> (C) insofar as transmission rates are concerned, equitably allocate the costs of the Federal transmission system between Federal and non-Federal power utilizing such system.

In addition to reiterating and clarifying the cost recovery principle, the Northwest Power Act provides BPA with supplementary authority to sell bonds to the U.S. Treasury to finance BPA's new conservation and renewable resource programs. 16 U.S.C. § 838i. The Energy Policy Act of 1992 clarifies BPA's authority to provide funds directly to the U.S. Army Corps of Engineers (Corps) and U.S. Bureau of Reclamation (Reclamation) for hydroelectric generation additions, improvements, and replacements, as well as O&M expenses. P.L. No. 102-486, 1992 U.S. Code Cong. & Admin. News, 106 Stat. 2776. Other provisions that have particular relevance to the repayment of power costs can be found in the Reclamation Project Act of 1939 (codified as amended in scattered sections of 43 U.S.C.) and the Grand Coulee Dam – Third Powerplant Act of June 14, 1966, P.L. No. 89-448, 80 Stat. 200, authorizing construction of the Grand Coulee Dam Third Powerhouse; and P.L. No. 89-561, 80 Stat. 707, Act of September 7, 1966, which partially amended P.L. No. 89-448. The costs associated with these projects and programs, as well as the other costs incurred by the Administrator in furtherance of BPA's mission, are included in this Study.

1.2.3 Colville Settlement Act Credits

The Confederated Tribes of the Colville Reservation Grand Coulee Dam Settlement Act approves and ratifies the Settlement Agreement entered into by the United States and the Confederated Tribes of the Colville Reservation (Colville Tribes) related to the claims for a portion of the revenues from Grand Coulee Dam, and directs BPA to carry out its obligations under the Settlement Agreement. P.L. No. 103-436, Nov. 2, 1994, 108 Stat. 4577.

The Settlement Agreement obligates BPA to make annual payments to the Colville Tribes. Payments have been tied to BPA's average prices and the amount of annual generation from Grand Coulee Dam. Under the Refinancing Act, part of the Omnibus Consolidated Rescissions and Appropriations Act of 1996, P.L. No. 104-134, 110 Stat. 1321, BPA receives annual credits from the U.S. Treasury against payments due the U.S. Treasury in order to defray a portion of the costs of making payments to the Colville Tribes. The annual payments to the Colville Tribes are forecast to be $21.4 million in FY 2014 and $21.9 million in FY 2015. The credits for the FY 2014–2015 rate period are $4.6 million in each fiscal year.

1.2.4 The BPA Appropriations Refinancing Act

As in prior rate periods, BPA's power rates for the FY 2014–2015 rate period will reflect the requirements of the Refinancing Act, part of the Omnibus Consolidated Rescissions and Appropriations Act of 1996, 16 U.S.C. § 838l, P.L. No. 104-134, 110 Stat. 1321. The Refinancing Act requires that unpaid principal on FCRPS appropriations (old capital investments) at the end of FY 1996 be reset at the present value of the principal and annual interest payments BPA would make to the U.S. Treasury for these obligations absent the Refinancing Act, plus $100 million. *Id*. at § 838l(b)(I). The Refinancing Act also specifies that the new principal amounts of the old capital investments be assigned new interest rates from the U.S. Treasury yield curve prevailing at the time of the refinancing transaction. *Id*. at § 838l(a)(6)(A).

The Refinancing Act specifies that repayment periods on new principal amounts may not be earlier than determined prior to the refinancing. *Id*. at § 838l(d).

The Refinancing Act specifies that the prevailing U.S. Treasury yield curve will be used to calculate interest during construction (IDC) and to assign interest rates to new capital investments funded by appropriations. 16 U.S.C. § 838l(f). New capital investments are defined as capital investments funded by appropriations for a project placed in service after September 30, 1996. *Id*. at § 838l(a)(3). The IDC in each fiscal year of construction for new capital investments is the prevailing one-year U.S. Treasury rate. *Id*. at § 838l(f)(1). The IDC is capitalized and included in the principal. After the plant is completed, the principal amount is assigned an interest rate based on the U.S. Treasury yield curve prevailing in the year in which the plant is placed in service. *Id.* at § 838l(g).

The U.S. Treasury rate for new capital investments prescribed in the Refinancing Act is:

> [A] rate determined by the Secretary of the Treasury, taking into consideration prevailing market yields, during the month preceding the beginning of the fiscal year in which the [new investment] … is placed in service, on outstanding interest bearing obligations of the United States

> with periods to maturity comparable to the period between the beginning of the fiscal year and the repayment date for the new capital investment.

16 U.S.C. § 838l(a)(6)(B).

The Refinancing Act also directs the Administrator to offer to provide assurance in new or existing power, transmission, or related service contracts that the government would not increase the repayment obligations in the future. 16 U.S.C. § 838l(i). The Refinancing Act also amends the Colville Settlement Act to modify the amount and timing of certain credits that BPA takes against its annual cash transfers to U.S. Treasury.

1.2.5 Allocation of FCRPS Costs

The individual generating projects comprising the FCRPS serve purposes in addition to power production, including navigation, irrigation, recreation, and flood control. The total costs of these Federal projects are generally allocated according to the purposes they serve.

For projects that provide power generation to the FCRPS, this allocation has generally been accomplished pursuant to statutory direction. For example, section 7 of the Bonneville Project Act, 16 U.S.C. § 832f, requires that BPA's rates be based, *inter alia*, on "an allocation of costs made by the [Secretary of Energy,]" and, insofar as costs of the Bonneville Project are concerned:

> [T]he Secretary of Energy may allocate to the costs of electric facilities such a share of the cost of facilities having joint value for the production of electric energy and other purposes as the power development may fairly bear as compared with other such purposes.

Id.

Similar allocations for Reclamation projects constructed pursuant to various authorizing statutes have been performed by the Secretary of the Interior under the authority of 43 U.S.C. § 485h(a)-(b). Cost allocations for projects constructed by the Corps have been performed by the Secretary of the Army and approved by the Federal Power Commission (the predecessor to the Federal Energy Regulatory Commission).

In general, an attempt is made to allocate the cost of each feature of a multipurpose dam to the purpose it serves. For example, the costs of powerhouses, penstocks, and other specific power-related facilities have been allocated to the generation function, whereas the costs of navigation locks have been allocated to navigation. More problematic are the joint-use costs that remain unallocated after the costs identifiable to single purposes have been allocated. The joint-use formulas approximate the relative benefits provided by each function, and costs are allocated accordingly.

Thus, costs assigned to the power production functions include specific cost items whose sole purpose is power production and the "power production share" of joint costs assigned to more than one purpose. Both types of costs are included in BPA's generation revenue requirement.

1.2.6 Section 4(h)(10)(C) Credit

The Northwest Power Act provides that:

> The Administrator shall use the Bonneville Power Administration fund and the authorities available to the Administrator under this Act and other laws administered by the Administrator to protect, mitigate, and enhance fish and wildlife to the extent affected by the development and operation of any hydroelectric project of the Columbia River and its tributaries …

16 U.S.C. § 839b(h)(10)(A).

BPA is not obligated to reimburse the U.S. Treasury for the non-power portion of these fish and wildlife costs. Such non-power costs are instead allocated to the various project purposes by the BPA Administrator, in consultation with the Corps and Reclamation, pursuant to section 4(h)(10)(C) of the Northwest Power Act. 16 U.S.C. § 839b(h)(10)(C). This allocation to various project purposes implements the principle that electric power consumers bear no greater share of the costs of fish and wildlife mitigation than the power portion of the project.

The legislative history of section 4(h)(10)(C) illustrates how the expenditures by the Administrator for protection, mitigation, and enhancement of fish and wildlife at individual Federal projects in excess of the portion allocable to electric consumers are to be treated as a credit for electric consumers. H.R. Rep. No. 976, 96th Cong., 2d Sess., pt. 2 at 45 (1980), *reprinted in* 1980 U.S.C.C.A.N. 5989, 6011. This principle is satisfied by treating expenditures on behalf of non-power purposes as other project costs. BPA receives a credit against its cash transfers to the U.S. Treasury for expenditures attributable to non-power purposes. BPA's initial funding of all the costs for fish and wildlife has the advantage of avoiding the need for funding the non-power portion of these costs through the annual appropriations process.

1.2.7 Equitable Allocation of Transmission Costs

In an order dated January 27, 1984, *United States Department of Energy – Bonneville Power Admin.*, 26 FERC ¶ 61,096 (1984), the Commission directed BPA to, among other things, develop separate repayment studies for the generation and transmission functions of the FCRPS. The purpose of this requirement was to assist the Commission in making the determination required under section 7(a)(2)(C) of the Northwest Power Act (16 U.S.C. § 839e(a)(2)(C)) that transmission costs be equitably allocated between Federal and non-Federal uses of the transmission system. This requirement has given BPA a 28-year history of conducting separate repayment studies for the transmission and generation functions, which has enabled BPA to set power and transmission rates separately with minimal change in repayment policy and development of each revenue requirement. Consistent with the decision to separate the rates for the transmission and generation functions beginning with the WP-02 proceeding, this Power Revenue Requirement Study incorporates only the repayment study for the generation function of the FCRPS for FY 2014–2015. The Transmission Revenue Requirement Study, BP-14-E-BPA-08, incorporates the repayment study for the transmission function.

1.2.8 Repayment Requirements and Policies

The statutes do not include specific directives for scheduling repayment of the FCRPS capital appropriations and bonds issued to the U.S. Treasury. The details of the repayment policy have largely been established through administrative interpretation of statutory requirements, with Congressional sanction.

There have been a number of changes in BPA's repayment policy over the years, generally concurrent with expansion of the FCRPS and changing conditions. In general, current repayment criteria were first approved by the Secretary of the Interior on April 3, 1963. These criteria were refined and submitted to the Secretary of the Interior and the Federal Power Commission in support of BPA's rate filing in September 1965.

The repayment policy was presented to Congress for its consideration in the authorization of the Grand Coulee Dam Third Powerhouse in June 1966. The underlying theory of repayment was discussed in the House of Representatives Report related to this authorization, H.R. Rep. No. 1409, 89th Cong., 2d Sess. at 9-10 (1966). As stated in that report:

> Accordingly, in a repayment study there is no annual schedule of capital repayment. The test of the sufficiency of revenues is whether the capital investment can be repaid within the overall repayment period established

> for each power project, each increment of investment in the transmission system, and each block of irrigation assistance. Hence, repayment may proceed at a faster or slower pace from year-to-year as conditions change.
>
> This approach to repayment scheduling has the effect of averaging the year-to-year variations in costs and revenues over the repayment period. This results in a uniform cost per unit of power sold, and permits the maintenance of stable rates for extended periods. It also facilitates the orderly marketing of power and permits Bonneville Power Administration's customers, which include both electric utilities and electro-process industries, to plan for the future with assurance.

The Secretary of the Interior issued a statement of power policy on September 30, 1970, setting forth general principles that reaffirmed the repayment policy as previously developed. The most pertinent of these principles are set forth in the Department of the Interior (DOI) Manual, Part 730, Chapter 1:

> A. Hydroelectric power, although not a primary objective, will be proposed to Congress and supported for inclusion in multiple-purpose Federal projects when … it is capable of repaying its share of the Federal investment, including operation and maintenance costs and interest, in accordance with the law.
>
> B. Electric power generated at Federal projects will be marketed at the lowest rates consistent with sound financial management. Rates for the sale of Federal electric power will be reviewed periodically to assure their sufficiency to repay operating and

maintenance costs and the capital investment within 50 years with interest that more accurately reflects the cost of money.

To achieve a greater degree of uniformity in a repayment policy for all DOI power marketing agencies, of which BPA was one at the time, the Deputy Assistant Secretary of the Interior issued a memo on August 2, 1972, outlining: (1) a uniform definition of the commencement of the repayment period for a particular project; (2) the method for including future replacement costs in repayment studies; and (3) a provision that the investment or obligation bearing the highest interest rate shall be amortized first, to the extent possible, while still complying with the repayment period established for each increment of investment.

A further clarification of the repayment policy was outlined in a joint memo of January 7, 1974, from the Assistant Secretary for Reclamation and Assistant Secretary for Energy and Minerals. This memo states that, in addition to meeting the overall objective of repaying the Federal investment or obligations within the prescribed repayment periods, revenues shall be adequate, except in unusual circumstances, to repay annually all costs for O&M, purchased power, and interest.

On March 22, 1976, the DOI issued Chapter 4 of Part 730 of the DOI Manual to codify financial reporting requirements for the DOI power marketing agencies. Included therein are standard policies and procedures for preparing system repayment studies.

BPA and other former DOI power marketing agencies were transferred to the newly established DOE on October 1, 1977. *See* DOE Organization Act, 42 U.S.C. § 7101 *et seq.* (1994). The DOE adopted the policies set forth in Part 730 of the DOI Manual by issuing Interim Management Directive No. 1701 on September 28, 1977, which was subsequently replaced by RA 6120.2 on September 20, 1979, as amended on October 1, 1983.

The repayment policy outlined in RA 6120.2, paragraph 12, provides that BPA's total revenues from all sources must be sufficient to:

(1) Pay all annual costs of operating and maintaining the Federal power system;

(2) Pay the cost each fiscal year of obtaining power through purchase and exchange agreements, the cost for transmission services, and other costs during the year in which such costs are incurred;

(3) Pay interest each year on the unamortized portion of the commercial power investment financed with appropriated funds at the interest rates established for each generating project and for each annual increment of such investment in the BPA transmission system, except that recovery of annual interest expense may be deferred in unusual circumstances for short periods of time;

(4) Pay when due the interest and amortization portion on outstanding bonds sold to the U.S. Treasury;

(5) Repay:

- each dollar of power investments and obligations in the FCRPS generating projects within 50 years after the projects become revenue-producing (50 years has been deemed a "reasonable period" as intended by Congress, except for the Yakima-Chandler Project, which has a legislated amortization period of 66 years);

- each annual increment of transmission financed by Federal investments and obligations within the average service life of such transmission facilities (currently

40 years) or within a maximum of 50 years, whichever is less [BPA has interpreted RA 6120.2 to require repayment of bonds sold to finance conservation to be within the average service lives of these projects, currently estimated to be 12 years, and for fish and wildlife facilities to be 15 years];

- the federally financed amount of each replacement within its service life up to a maximum of 50 years; and

(6) As required by P.L. No. 89-448, repay the portion of construction costs at Federal reclamation projects that is beyond the repayment ability of the irrigators, and which is assigned for repayment from commercial power revenues, within the same overall period available to the irrigation water users for making their payments on construction costs.

The typical repayment period for appropriated capital investments is 50 years from the year in which the plant is placed in service. The Refinancing Act overrides provisions in RA 6120.2 related to determining interest during construction and assigning interest rates to Federal investments financed by appropriations. The Refinancing Act also contains provisions on repayment periods (due dates) for these investments. The Refinancing Act is discussed in section 1.2.4.

Irrigation costs are repaid without interest. P.L. No. 89-448 authorizes the payment of irrigation costs from revenues of the entire power system. This is consistent with the so-called “Basin Account” concept. P.L. No. 89-561, approved on September 7, 1966, amended P.L. No. 89-448 to provide several limitations on the repayment of irrigation costs from power revenues. These limitations are:

(1) the irrigation costs are to be paid from "net revenues" of the power system, with net revenues defined as those revenues over and above the amount needed to cover power costs and previously authorized irrigation payments;

(2) the construction of new Federal irrigation projects will be scheduled, *i.e.*, deferred, if necessary, so that the repayment of the irrigation costs from power revenues will not require an increase in the BPA power rate level; and

(3) the total amount of irrigation costs to be repaid from power revenues shall not average more than $30 million per year in any period of 20 consecutive years.

In addition, other sections within RA 6120.2 require that any outstanding deferred interest payments must be repaid before any planned amortization payments are made. Also, repayments are to be made by amortizing those Federal investments and obligations bearing the highest interest rate first, to the extent possible, while still completing repayment of each increment of Federal investment and obligation within its prescribed repayment period.

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2. DEVELOPMENT OF THE GENERATION REVENUE REQUIREMENT

2.1 Spending Level Development

The development of program spending levels occurs outside the rate process. It began in March and April of 2012, when BPA hosted the 2012 Capital in Review (CIR), a new public process focused on reviewing and discussing draft asset strategies and 10-year capital forecasts. It continued with the Integrated Program Review (IPR), which provides customers and constituents with an opportunity to examine, understand, and comment on BPA's cost projections for BPA's power and transmission functions.

BPA began the 2012 IPR discussion of FY 2014–2015 program levels on June 5, 2012, with an opening workshop containing an overview of Power, Transmission, and Agency Services proposed expense spending levels for FY 2014–2015. At the same time, BPA released FY 2014–2015 proposed expense spending levels, drivers, goals, risks and comparisons to previous IPR costs. Public comments received during the CIR informed capital cost projections for FY 2014–2015 in the 2012 IPR initial report released June 18, 2012. After the opening IPR workshop and release of information, participants were allowed three weeks to request additional information or specific workshops. BPA responded to 101 requests for additional information and held six workshops through August 10, 2012. These workshops were held to discuss the projected spending levels of the Columbia Generating Station (CGS); Corps; Reclamation; BPA's conservation and fish and wildlife programs; and BPA's Information Technology program. While Federal and non-Federal debt management issues are not decided in the IPR, a workshop was held on these topics because BPA believes it is important for participants to understand the implications of past debt management decisions and proposed capital spending levels.

After considering the comments received, BPA released a final close-out report on October 26, 2012. This Study incorporates the spending levels identified in the IPR final close-out report, which can be found on BPA's public Web site: Finance & Rates—Financial Public Processes—Integrated Program Review.

2.2 Capital Funding

The forecast of BPA's capital investments for FY 2014–2015 used in setting the BP-14 power rates was produced in the IPR. The following section describes the forecasts developed in the IPR and includes a 5 percent "lapse factor," recognizing that timing of some planned capital spending may be stretched into the following rate period. The lapse factor was applied to all programs except the Fish and Wildlife Program, Energy Efficiency, and CGS. FCRPS capital investments include Corps, Reclamation, and BPA capital investments as well as third-party resource investments for which debt is secured by BPA (capitalized contracts). Projections of current FCRPS capital outlays are $1,678 million for the cost evaluation period of FY 2013–2015. These investments include:

- improvements and maintenance needed to increase reliability, safety, and performance at the CGS nuclear plant
- improvements and maintenance needed to improve reliability of the aging and deteriorating Federal hydro system
- investment in fish and wildlife mitigation measures
- investment in conservation activities
- investment in capital equipment

Table 3 provides a detailed breakout of investment projections for the cost evaluation period. This Study projects that no capital investments will be funded from current revenues.

2.2.1 Bonds Issued to the U.S. Treasury

Bonds issued to the U.S. Treasury are the source of capital that will be used to finance BPA's FY 2014–2015 capital program and Corps and Reclamation investments that BPA has agreed to direct-fund under section 2406 of P.L. No. 102-486, 16 U.S.C. § 839d-1. These expenditures include a total capital projection of $774 million, which is split among BPA Fish and Wildlife direct program investments ($102 million), conservation investments ($167 million), BPA capital equipment ($26 million), and generating resource investments of the Corps and Reclamation ($479 million) during FY 2014–2015.

Interest rates on bonds issued by BPA to the U.S. Treasury are set at market interest rates comparable to interest rates on securities issued by other agencies of the U.S. Government. Interest rates on bonds projected to be issued are included in Chapter 6 of the Documentation.

2.2.2 Federal Appropriations

In general, the Study reflects that all Corps and Reclamation capital investments in the FCRPS will be financed by Federal appropriations unless they are direct-funded by BPA. This Study includes projected appropriated investments totaling $148 million during the rate period for Corps fish and wildlife mitigation and recovery measures through the Columbia River Fish Mitigation (CRFM) project. No other appropriations-financed investments are forecast for the rate period. Capital investments funded by this source do not become BPA's obligation to repay until placed in service.

The interest rate forecast for appropriated capital investments expected to be placed in service is found in Chapter 6 of the Documentation. Each new capital investment is assigned a rate from the U.S. Treasury yield curve prevailing in the month prior to the beginning of the fiscal year in which the new investment is placed in service.

To determine interest during construction for new capital investments for a given fiscal year, the prevailing U.S. Treasury one-year rate for each fiscal year of construction is applied to the sum of the cumulative expenditures made and interest during construction that has accrued prior to the end of the fiscal year. Study Chapter 5 and Documentation Chapter 9.

2.2.3 Third-Party Debt

Third-party debt differs from U.S. Treasury debt in that entities other than BPA or the U.S. Treasury issue the debt. BPA's promise to make payments serves as security for bonds or other debt that the third party issues, resulting in wider market access and potentially more favorable interest rates for the seller. Examples of acquisitions financed in this way include the Energy Northwest, Inc. (EN) WNP-1, WNP-3, and CGS nuclear power projects and the Lewis County Public Utility District Hydroelectric project (Cowlitz Falls). This Study includes forecasts of debt transactions that will occur during the cost evaluation period, including the refinancing of Lewis County debt and the refinancing of CGS debt coming due in 2014 and 2015.

2.3 Debt Optimization Program

After base power rates were filed for the FY 2002–2006 rate period, BPA instituted a Debt Optimization Program (DOP) with EN as a means of replenishing Treasury borrowing authority. Debt Optimization (DO) involves extending EN debt that has come due and using the cash flows that would have gone to pay the EN debt to repay an equivalent amount of Federal debt. The program has resulted in a considerable amount of Federal debt, primarily bonds issued to Treasury but also some Congressional appropriations, being paid well in advance of the amortization schedules established in the WP-02 rate filing. As the program continued during FY 2007–2009, additional advance amortization was created, compared to the schedules that would have been established without DO, for the subsequent rate periods through FY 2012.

Effectively, the extension of EN debt into FY 2013–2018 has advanced the repayment of Federal debt relative to the amount that otherwise would have been paid in that period. BPA has committed to EN that it would follow this program, matching dollar for dollar the repayment of Federal obligations in the same year in which EN debt has been extended, absent dire financial circumstances that might cause some delay in the payment of the advanced portion of the amortization.

This Study includes EN debt refinancing transactions completed through FY 2009. BPA has ended the DO program, and no forecasts of DO actions are included in the proposed rates.

2.4 Modeling of BPA's Repayment Obligations

Typically, repayment studies are performed as the first step in determining revenue requirements. The studies establish a schedule of annual U.S. Treasury amortization for the rate period and the resulting interest payments. Each repayment study covers a rate test year and the ensuing repayment period, which extends to the last year by which all outstanding and projected obligations must be repaid. For generation repayment studies, that is 50 years.

In conducting the repayment studies, BPA includes as fixed inputs the annual debt service payments associated with its capitalized contract obligations and the fixed annual payments associated with long-term energy resource acquisition contracts. All outstanding and projected generation repayment obligations for appropriated investments (including irrigation assistance) and bonds issued to the U.S. Treasury are included to be scheduled for repayment. Funding for replacements projected during the repayment period are also included in the repayment study, consistent with the requirements of RA 6120.2.

Appropriations are scheduled to be repaid within the expected useful life of the associated facility, or 50 years, whichever is less. Corps and Reclamation project replacements funded by appropriations and placed in service in 1994 or later have repayment periods that are set at the weighted average service life of all replacements going into service at that project in that year.

Bonds issued by BPA to the U.S. Treasury may include three-year to 45-year terms, taking into account the estimated average service lives for investments and prudent financing and cash management factors. Some bonds are issued with a provision that allows the bond to be called after a certain time, typically five years. Bonds may also be issued with no early call provision. Early retirement of eligible bonds requires that BPA pay a bond premium to the U.S. Treasury. In addition, the interest rate that BPA pays on callable bonds is higher than the interest rate on non-callable bonds issued at the same time.

Bonds are issued to finance BPA conservation acquisitions, the Fish and Wildlife Program, and Corps and Reclamation investments that are direct-funded by BPA. These bonds are repaid within the terms and conditions of each bond issued to the U.S. Treasury. Bonds to finance fish and wildlife capital investments are issued with maturities not to exceed 15 years, the same period over which BPA amortizes these capital investments. Corps and Reclamation direct-funding bonds are issued with maturities not to exceed 45 years. Conservation bonds are issued with maturities that are consistent with the period over which BPA amortizes these capital investments. Currently, BPA has three amortization schedules for conservation assets. Investments made prior to FY 2002, referred to as the Conservation Legacy program, have a straight-line 20-year amortization period. Investments made beginning in FY 2007, known as Conservation Acquisition investments, have a straight-line five-year amortization period. Investments made beginning with FY 2011 have a straight-line 12-year amortization period.

Based on these parameters, the repayment study establishes a schedule of planned amortization payments and resulting interest expense by determining the lowest levelized debt service stream necessary to repay all generation obligations within the required repayment period.

Further discussion of the repayment program and tables is included in Chapter 17 of the Documentation.

2.5 Products Used by Other Studies

The Revenue Requirement Study produces information that is used in other studies. The information provided to the Rate Analysis Model (RAM) includes itemized program spending data; the allocation of net interest, MRNR, and PNRR into cost pools; and the allocation of interest income between the Composite cost pool and the Non-Slice cost pool. The Revenue Requirement Study also provides the embedded costs used for the calculation of generation input costs.

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3. GENERATION REVENUE REQUIREMENT

3.1 Revenue Requirement

For each year of a rate period, BPA prepares two tables that constitute the process by which the revenue requirement is determined. The Income Statement includes projections of Total Expenses, PNRR, and if necessary, an MRNR component. The Statement of Cash Flow shows the analysis used to determine MRNR and the cash available for risk mitigation.

The Income Statement, Table 4, displays the components of the annual revenue requirement, which includes Total Operating Expenses (Line 19), Net Interest Expense (Line 28), and Total Planned Net Revenues (Line 32), which consists of MRNR (Line 30) and PNRR (Line 31). The sum of these three major components is the Total Revenue Requirement (Line 33).

The amounts shown in Total Operating Expenses are primarily established outside the ratesetting process in the IPR. Other expenses such as power purchases, augmentation, transmission acquisition and ancillary services, and net interest are modeled within the rate case. The MRNR (Line 30) results from an analysis of the Statement of Cash Flow, Table 5. MRNR may be necessary to ensure that revenue requirements are sufficient to cover all cash requirements, including annual amortization of the Federal investment as determined in the power repayment studies, and any other cash requirements, such as irrigation assistance payments.

The Statement of Cash Flow (Table 5) analyzes annual cash inflow and outflow. Cash provided by Operating Activities (Line 8), driven by the Non-Cash Items shown in Lines 4, 5, 6, and 7, must be sufficient to compensate for the difference between Cash Used for Investment Activities (Line 14) and Cash Used For Financing Activities (Line 21). If cash provided by Current Operations is not sufficient, MRNR must be included in revenue requirements to accommodate the shortfall, yielding at least zero Annual Increase in Cash (Line 22). The MRNR amounts shown on the Statement of Cash Flow (Line 2) are then incorporated in the Income Statement (Table 4, Line 32).

3.2 Current Revenue Test

Consistent with RA 6120.2, the continuing adequacy of existing rates must be tested annually. The current revenue test, exhibited in Tables 6 and 7, determines whether the revenue expected from current rates can continue to meet cost recovery requirements, thus allowing the current rates to be extended. Revenue at current rates can be found in the Power Rates Study (PRS) Documentation, BP-14-E-BPA-01A. The result of the current revenue test demonstrates that projected revenue from current rates is inadequate to meet the cost recovery criteria of RA 6120.2 over the repayment period. See Table 8, column J. If revenues from current rates were adequate, current rates could be extended, although other reasons may exist for revising rates, such as the implementation of a new rate design.

3.3 Revised Revenue Test

Consistent with RA 6120.2, the adequacy of proposed rates must be demonstrated. The revised revenue test determines whether the revenue projected from proposed rates will meet cost recovery requirements, as well as BPA's Treasury Payment Probability (TPP) standard for the rate period. The revised revenue test is conducted using the forecast of revenue under proposed rates. PRS Documentation, BP-14-E-BPA-05A, section 2.6.

For the rate period, the demonstration of the adequacy of proposed rates is shown in Table 9, Generation Revised Revenue Test Income Statement, and Table 10, Generation Revised Revenue Test Statement of Cash Flow. Table 10 tests the sufficiency of the resulting Net Revenues from Table 9 (Line 32) for making the planned annual amortization and irrigation assistance payments and achieving the Administrator's financial objectives. The sufficiency of net revenues is demonstrated by the Annual Increase (Decrease) in Cash (Table 10, Line 24). The annual cash flow must be at least zero to demonstrate the adequacy of the projected revenues to cover all cash requirements.

The results of the revised revenue test demonstrate that proposed rates are adequate to fulfill the basic cost recovery requirements and meet risk mitigation policy for the rate period, FY 2014–2015. With the successful test of proposed rates, the rate development process ends.

3.4 Repayment Test at Proposed Rates

Table 11, Generation Revenue from Proposed Rates, demonstrates whether projected revenue from proposed rates is adequate to meet the cost recovery criteria of RA 6120.2 over the repayment period. The data are presented in a format consistent with the revised revenue tests, Tables 9 and 10, and the separate accounting analysis that is a separate attachment to the filing with the Commission. The focal point of these tables is the Net Position (Column J), which is the amount of funds provided by revenues that remain after meeting annual expenses requiring cash for the rate period and repayment of the Federal investment. Thus, if the Net Position is zero or greater in each of the years of the rate period through the repayment period, the projected revenues demonstrate BPA's ability to repay the Federal investment in the FCRPS within the allowable time. As shown in Column J, the resulting Net Position is zero or greater for each year of the rate period and in each year of the repayment period.

The historical data on this table have been taken from BPA's separate accounting analysis. The rate period data have been developed specifically for this Study. The repayment period data are presented consistent with the requirements of RA 6120.2. Typically, the revenue test through the repayment period uses expenses from the last year of the rate period. In this case, as we have done since the WP-07 rate proceeding, expenses for the CGS nuclear plant are normalized because it is on a two-year refueling cycle, which results in low costs in the first year and high costs in the second year. FY 2015 is a refueling year for CGS, which increases O&M costs for the facility and power purchase costs to make up for the loss of generation during the refueling. The projection of these outage costs in every year of the repayment period would misrepresent the costs associated with the CGS refueling cycle. For the purposes of this revenue test, these CGS costs for FY 2014 and FY 2015 have been averaged to produce an average annual cost for the operation of CGS for the rate period. Augmentation purchases are also averaged in this fashion because of the higher costs in FY 2015 to make up for lost CGS generation.

Table 12, Amortization of Generation Investments Over Repayment Period, summarizes the amortization of Federal investments over the entire repayment period. It displays the total investment costs of the generating projects through the cost evaluation period, forecast replacements required to maintain the system through the repayment period, the cumulative dollar amount of the generation investment placed in service, scheduled amortization payments for each year of the repayment period (due and discretionary), unamortized investments including replacements through the repayment period, unamortized obligations as determined by a term schedule (if all obligations were paid at maturity and never early), and the predetermined amortization payments and the unamortized amount of irrigation assistance for each year of the repayment period.

TABLES

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Table 1: **Projected Net Revenues from Projected Rates**
($000s)

		A FY 2014	B FY 2015	C Average
1	Projected Revenues from Proposed Rates	$ 2,802,734	$ 2,867,211	$ 2,834,973
2	Projected Expenses	2,794,114	2,875,550	2,834,832
3	Net Revenues	$ 8,620	$ (8,339)	$ 140

Table 2: **Planned Federal Amortization & Irrigation Assistance Payments**
($000s)

	Fiscal Year	A Calculated Amortization	B Additional Amortization	C Total Amortization	D Irrigation Assistance
1	2014	$121,117	$1,121	$122,238	$52,427
2	2015	$125,909	$1,267	$127,176	$51,989
3	Total	$247,026	$2,388	$249,414	$104,416

Table 3: **Projected Capital Funding Requirements for the FCRPS**
($000s)

		A FY 2013	B FY 2014	C FY 2015
	POWER			
	Capital Requirements for Revenue Producing Investments			
1	Corps & Reclamation Additions/Replacements - Direct Funded	241,817	243,344	236,254
2	PBL Capital Equipment	16,878	12,630	12,936
3	CGS: Additions/Replacements	83,710	62,939	63,198
4	**Annual Capital Requirements for Revenue Producing Investments**	**342,405**	**318,913**	**312,388**
	Capital Requirements for Non-Revenue Producing and Public Benefit Investments			
5	**Energy Conservation**	75,200	75,200	92,000
6	**Fish Investment**			
7	BPA Fish and Wildlife Investment	67,145	60,275	41,808
8	Corps & Reclamation Fish Investment - Appropriations	144,966	99,343	48,758
9	**Total Fish Investment**	212,111	159,618	90,566
10	Other Third-Party	-	-	-
11	**Annual Capital Req. for Non-Rev. & Public Benefit Invests.**	**287,311**	**234,818**	**182,566**
12	**ANNUAL FUNDING REQUIREMENTS FOR POWER**	**629,716**	**553,731**	**494,954**
13	**CUMULATIVE FUNDING REQUIREMENTS FOR POWER**	**629,716**	**1,183,447**	**1,678,401**

Table 4: **Generation Revenue Requirement Income Statement**

($000s)

		A 2014	B 2015
1	OPERATING EXPENSES		
2	POWER SYSTEM GENERATION RESOURCES		
3	OPERATING GENERATION RESOURCES	705,205	757,205
4	OPERATING GENERATION SETTLEMENT PAYMENTS	21,404	21,905
5	NON-OPERATING GENERATION	2,206	2,228
6	CONTRACTED POWER PURCHASES	75,149	56,964
7	AUGMENTATION POWER PURCHASES	27,611	123,273
8	EXCHANGES & SETTLEMENTS	276,582	276,575
9	RENEWABLE GENERATION	39,799	40,147
10	GENERATION CONSERVATION	48,408	49,320
11	POWER NON-GENERATION OPERATIONS	91,856	94,710
12	PS TRANSMISSION ACQUISITION AND ANCILLARY SERVICES	167,640	168,319
13	F&W/USF&W/PLANNING COUNCIL/ENVIRONMENTAL REQUIREMENTS	295,538	302,769
14	GENERAL AND ADMINISTRATIVE/SHARED SERVICES	73,603	76,034
15	OTHER INCOME, EXPENSES AND ADJUSTMENTS	0	0
16	NON-FEDERAL DEBT SERVICE	514,981	437,912
17	DEPRECIATION	127,665	134,451
18	AMORTIZATION	96,462	94,175
19	TOTAL OPERATING EXPENSES	2,564,107	2,635,984
20	INTEREST EXPENSE:		
21	INTEREST		
22	APPROPRIATED FUNDS	223,187	220,893
23	CAPITALIZATION ADJUSTMENT	(45,937)	(45,937)
24	BONDS ISSUED TO U.S. TREASURY	68,929	84,766
25	AMORTIZATION OF CAPITALIZED BOND PREMIUMS	0	0
26	ALLOWANCE FOR FUNDS USED DURING CONSTRUCTION	(9,651)	(8,823)
27	INTEREST CREDIT ON CASH RESERVES	(6,454)	(11,208)
28	NET INTEREST EXPENSE	230,074	239,691
29	TOTAL EXPENSES	2,794,181	2,875,675
30	MINIMUM REQUIRED NET REVENUE 1/	0	0
31	PLANNED NET REVENUE FOR RISK	0	0
32	PLANNED NET REVENUE, TOTAL (30+31)	0	0
33	**TOTAL REVENUE REQUIREMENT**	**2,794,181**	**2,875,676**

1/ SEE NOTE ON CASH FLOW STATEMENT

Table 5: **Generation Revenue Requirement Statement of Cash Flow**
($000s)

		A 2014	B 2015
1	CASH FROM OPERATING ACTIVITIES		
2	MINIMUM REQUIRED NET REVENUE 1/	0	0
3	NON-CASH ITEMS:		
4	DEPRECIATION AND AMORTIZATION	224,126	228,625
5	AMORTIZATION OF CAPITALIZED BOND PREMIUMS	0	0
6	CAPITALIZATION ADJUSTMENT	(45,937)	(45,937)
7	ACCRUAL REVENUES	(3,524)	(3,524)
8	CASH PROVIDED BY OPERATING ACTIVITIES	174,665	179,165
9	CASH FROM INVESTMENT ACTIVITIES:		
10	INVESTMENT IN:		
11	UTILITY PLANT (INCLUDING AFUDC)	(355,318)	(381,272)
12	ENERGY EFFICIENCY	(75,200)	(92,000)
13	FISH & WILDLIFE	(60,275)	(41,807)
14	CASH USED FOR INVESTMENT ACTIVITIESS	(490,794)	(515,079)
15	CASH FROM BORROWING AND APPROPRIATIONS:		
16	INCREASE IN BONDS ISSUED TO U.S. TREASURY	391,451	466,321
17	REPAYMENT OF BONDS ISSUED TO U.S. TREASURY	(29,950)	(117,700)
18	INCREASE IN FEDERAL CONSTRUCTION APPROPRIATIONS	99,343	48,758
19	REPAYMENT OF FEDERAL CONSTRUCTION APPROPRIATIONS	(92,288)	(9,476)
20	PAYMENT OF IRRIGATION ASSISTANCE	(52,427)	(51,989)
21	CASH PROVIDED BY BORROWING AND APPROPRIATIONS	316,129	335,915
22	ANNUAL INCREASE (DECREASE) IN CASH	0	0
23	PLANNED NET REVENUE FOR RISK	0	0
24	TOTAL ANNUAL INCREASE (DECREASE) IN CASH	0	0

1/ Line 22 must be greater than or equal to zero to indicate that cash cost recovery requirements are being achieved. If not, net revenues (MRNR) are added so that net cash flows for the year (Line 22) are zero.

Table 6: **Generation Current Revenue Test Income Statement**
($000s)

		A 2014	B 2015
1	REVENUES FROM CURRENT RATES	2,633,635	2,711,011
2	OPERATING EXPENSES		
3	POWER SYSTEM GENERATION RESOURCES		
4	OPERATING GENERATION	705,205	757,205
5	OPERATING GENERATION SETTLEMENTS	21,404	21,905
6	NON-OPERATING GENERATION	2,206	2,228
7	CONTRACTED POWER PURCHASES	75,149	56,964
8	AUGMENTATION POWER PURCHASES	27,611	123,273
9	EXCHANGES & SETTLEMENTS	280,438	280,438
10	RENEWABLE GENERATION	39,799	40,147
11	GENERATION CONSERVATION	48,408	49,320
12	CONSERVATION RATE CREDIT		
13	POWER NON-GENERATION OPERATIONS	91,856	94,710
14	PS TRANSMISSION ACQUISITION AND ANCILLARY SERVICES	167,640	168,319
15	F&W/USF&W/PLANNING COUNCIL	295,538	302,769
16	BPA INTERNAL SUPPORT	73,603	76,034
17	OTHER INCOME, EXPENSES AND ADJUSTMENTS	0	0
18	NON-FEDERAL DEBT SERVICE	514,981	437,912
19	DEPRECIATION	127,665	134,451
20	AMORTIZATION	96,462	94,175
21	TOTAL OPERATING EXPENSES	2,567,963	2,639,847
22	INTEREST EXPENSE		
23	INTEREST		
24	APPROPRIATED FUNDS	223,187	220,893
25	CAPITALIZATION ADJUSTMENT	(45,937)	(45,937)
26	BONDS ISSUED TO U.S. TREASURY	68,929	84,766
27	AMORTIZATION OF CAPITALIZED BOND PREMIUMS		
28	ALLOWANCE FOR FUNDS USED DURING CONSTRUCTION	(9,651)	(8,823)
29	INTEREST CREDIT	(5,206)	(4,697)
30	NET INTEREST EXPENSE	231,322	246,202
31	TOTAL EXPENSES	2,799,285	2,886,049
32	NET REVENUES	(165,650)	(175,038)

Table 7: **Generation Current Revenue Test Statement of Cash Flow**
($000s)

		A 2014	B 2015
1	CASH PROVIDED BY OPERATING ACTIVITIES		
	NET REVENUES for Interest Income Calculation	(170,856)	(179,735)
2	NET REVENUES	(165,650)	(175,038)
3	NON-CASH ITEMS:		
4	DEPRECIATION AND AMORTIZATION	224,126	228,625
5	AMORTIZATION OF CAPITALIZED BOND PREMIUMS	0	0
6	CAPITALIZATION ADJUSTMENT	(45,937)	(45,937)
7			
8	ACCRUAL REVENUES	(3,524)	(3,524)
9	CASH FLOW ADJUSTMENT (RESERVE)/APPLICATION	(8,500)	8,500
10	CASH PROVIDED BY OPERATING ACTIVITIES	515	12,626
11	CASH USED FOR INVESTMENT ACTIVITIES		
12	INVESTMENT IN:		
13	FEDERAL UTILITY PLANT (INCLUDING AFUDC)	(355,318)	(381,272)
14	CONSERVATION	(75,200)	(92,000)
15	FISH & WILDLIFE	(60,275)	(41,807)
16	CASH USED FOR INVESTMENT ACTIVITIES	(490,794)	(515,079)
17	CASH FROM (AND USED FOR) FINANCING ACTIVITIES		
18	INCREASE IN TREASURY DEBT	391,451	466,321
19	REPAYMENT OF TREASURY DEBT	(29,950)	(117,700)
20	INCREASE IN FEDERAL CONSTRUCTION APPROPRIATIONS	99,343	48,758
21	REPAYMENT OF FEDERAL CONSTRUCTION APPROPRIATIONS	(92,288)	(9,475)
22	PAYMENT OF IRRIGATION ASSISTANCE	(52,427)	(51,989)
23	CASH USED FOR FINANCING ACTIVITIES	316,129	335,916
24	ANNUAL INCREASE (DECREASE) IN CASH	(174,150)	(166,538)

Table 8: **Generation Revenue from Current Rates – Results Through the Repayment Period**

($000s)

		A	B	C	D	E	F	G	H	I	J
	YEAR COMBINED CUMULATIVE	**REVENUES (STATEMENT A)**	**OPERATION & MAINTENANCE (STATEMENT E)**	**PURCHASE & EXCHANGE POWER (STATEMENT E)**	**DEPRECIATION**	**NET INTEREST (STATEMENT D)**	**NET REVENUES (F=A-B-C-D-E)**	**FUNDS FROM OPERATION NET OF NON CASH EXPENSES 2/**	**AMORTIZATION**	**IRRIGATION AMORTIZATION (STATEMENT C)**	**NET POSITION (J=G-H-I)**
1	**1977**	3,298,951	963,839	348,748	807,047	1,220,170	(40,853)	766,194	628,460		137,734
2	**1978–2010**	71,648,593	14,081,826	47,211,125	4,070,605	5,559,607	725,430	4,242,416	3,952,810	45,392	244,214
3	**2011**	2,619,038	929,012	1,288,758	201,106	182,860	17,302	169,132	162,163	0	6,969
4	**2012**	2,631,334	950,000	1,273,114	199,286	169,748	39,186	189,196	193,000	1,184	(4,988)
	COST EVALUATION PERIOD										
5	**2013**	2,657,818	974,938	1,287,731	211,403	199,520	(15,774)	146,353	122,800	58,823	(35,270)
	RATE APPROVAL PERIOD										
6	**2014**	2,633,635	1,067,156	1,276,681	224,127	231,322	(165,651)	9,015	122,238	52,427	(165,650)
7	**2015**	2,711,011	1,088,281	1,322,941	228,626	246,202	(175,039)	4,126	127,175	51,989	(175,038)
	REPAYMENT PERIOD										
8	**2016**	2,711,011	1,088,281	1,280,677	228,626	259,644	(146,217)	32,948	130,315	60,814	(158,182)
9	**2017**	2,711,011	1,088,281	1,321,588	228,626	261,725	(189,209)	(10,044)	96,860	51,278	(158,182)
10	**2018**	2,711,011	1,088,281	1,437,683	228,626	266,262	(309,840)	(130,675)	0	27,505	(158,181)
11	**2019**	2,711,011	1,088,281	1,213,965	228,626	273,362	(93,223)	85,942	187,016	57,107	(158,182)
12	**2020**	2,711,011	1,088,281	1,145,159	228,626	273,576	(24,631)	154,534	288,169	24,547	(158,182)
13	**2021**	2,711,011	1,088,281	1,134,105	228,626	268,510	(8,512)	170,653	316,627	12,208	(158,182)
14	**2022**	2,711,011	1,088,281	1,109,447	228,626	257,331	27,326	206,491	350,313	14,360	(158,182)
15	**2023**	2,711,011	1,088,281	1,059,236	228,626	240,895	93,973	273,138	418,370	12,949	(158,182)
16	**2024**	2,711,011	1,088,281	983,004	228,626	223,856	187,244	366,409	509,463	15,127	(158,182)
17	**2025**	2,711,011	1,088,281	756,992	228,626	194,964	442,148	621,313	765,772	13,723	(158,182)
18	**2026**	2,711,011	1,088,281	757,452	228,626	160,020	476,633	655,798	793,041	20,938	(158,182)
19	**2027**	2,711,011	1,088,281	750,330	228,626	128,993	514,781	693,946	845,940	6,187	(158,182)
20	**2028**	2,711,011	1,088,281	738,704	228,626	94,052	561,348	740,513	887,435	11,259	(158,182)
21	**2029**	2,711,011	1,088,281	738,699	228,626	64,430	590,975	770,140	924,257	4,065	(158,182)
22	**2030**	2,711,011	1,088,281	738,696	228,626	22,250	633,158	812,323	968,470	2,035	(158,182)
23	**2031**	2,711,011	1,088,281	738,701	228,626	(7,496)	662,899	842,064	989,612	10,634	(158,182)
24	**2032**	2,711,011	1,088,281	738,700	228,626	(46,418)	701,821	880,986	589,492	0	291,495
25	**2033**	2,711,011	1,088,281	729,630	228,626	(64,990)	729,463	908,628	171,569	4,348	732,711
26	**2034**	2,711,011	1,088,281	722,447	228,626	(65,083)	736,740	915,905	171,569	0	744,336
27	**2035**	2,711,011	1,088,281	717,136	228,626	(65,152)	742,120	921,285	171,569	7,843	741,873

Table 8, cont.

		A	B	C	D	E	F	G	H	I	J
	YEAR COMBINED CUMULATIVE	REVENUES (STATEMENT A)	OPERATION & MAINTENANCE (STATEMENT E)	PURCHASE & EXCHANGE POWER (STATEMENT E)	DEPRECIATION	NET INTEREST (STATEMENT D)	NET REVENUES (F=A-B-C-D-E)	FUNDS FROM OPERATION NET OF NON CASH EXPENSES 2/	AMORTIZATION	IRRIGATION AMORTIZATION (STATEMENT C)	NET POSITION (J=G-H-I)
28	**2036**	2,711,011	1,088,281	713,165	228,626	(65,204)	746,143	925,308	171,569	28,920	724,818
29	**2037**	2,711,011	1,088,281	712,537	228,626	(65,212)	746,779	925,944	171,569	16,232	738,143
30	**2038**	2,711,011	1,088,281	713,161	228,626	(65,204)	746,147	925,312	171,569	0	753,743
31	**2039**	2,711,011	1,088,281	713,156	228,626	(65,204)	746,151	925,316	171,569	14,229	739,518
32	**2040**	2,711,011	1,088,281	713,158	228,626	(65,204)	746,150	925,315	171,569	0	753,746
33	**2041**	2,711,011	1,088,281	713,169	228,626	(65,204)	746,138	925,303	171,569	0	753,734
34	**2042**	2,711,011	1,088,281	713,165	228,626	(65,204)	746,142	925,307	171,569	73,659	680,079
35	**2043**	2,711,011	1,088,281	713,165	228,626	(65,204)	746,142	925,307	171,569	0	753,738
36	**2044**	2,711,011	1,088,281	835,425	228,626	(63,614)	622,293	801,458	171,569	0	629,889
37	**2045**	2,711,011	1,088,281	1,183,748	228,626	(59,086)	269,442	448,607	171,569	11,700	265,338
38	**2046**	2,711,011	1,088,281	1,183,747	228,626	(59,086)	269,443	448,608	171,569	0	277,039
39	**2047**	2,711,011	1,088,281	1,183,749	228,626	(59,086)	269,441	448,606	171,569	0	277,037
40	**2048**	2,711,011	1,088,281	1,183,747	228,626	(59,086)	269,443	448,608	171,569	0	277,039
41	**2049**	2,711,011	1,088,281	1,183,748	228,626	(59,086)	269,442	448,607	171,569	0	277,038
42	**2050**	2,711,011	1,088,281	1,183,747	228,626	(59,086)	269,443	448,608	171,569	0	277,039
43	**2051**	2,711,011	1,088,281	1,183,746	228,626	(59,086)	269,444	448,609	171,569	0	277,040
44	**2052**	2,711,011	1,088,281	1,183,747	228,626	(59,086)	269,443	448,608	171,569	0	277,039
45	**2053**	2,711,011	1,088,281	1,183,747	228,626	(59,086)	269,443	448,608	171,569	0	277,039
46	**2054**	2,711,011	1,088,281	1,183,748	228,626	(59,086)	269,442	448,607	171,569	0	277,038
47	**2055**	2,711,011	1,088,281	1,183,748	228,626	(59,086)	269,442	448,607	171,569	0	277,038
48	**2056**	2,711,011	1,088,281	1,183,745	228,626	(59,086)	269,445	448,610	171,569	0	277,041
49	**2057**	2,711,011	1,088,281	1,183,745	228,626	(59,086)	269,445	448,610	171,569	0	277,041
50	**2058**	2,711,011	1,088,281	1,183,746	228,626	(59,086)	269,444	448,609	171,569	0	277,040
51	**2059**	2,711,011	1,088,281	1,183,750	228,626	(59,086)	269,440	448,605	171,569	0	277,036
52	**2060**	2,711,011	1,088,281	1,183,749	228,626	(59,086)	269,441	448,606	171,569	0	277,037
53	**2061**	2,711,011	1,088,281	1,183,749	228,626	(59,086)	269,441	448,606	171,569	0	277,037
54	**2062**	2,711,011	1,088,281	1,183,747	228,626	(59,086)	269,443	448,608	171,569	0	277,039
55	**2063**	2,711,011	1,088,281	1,183,747	228,626	(59,086)	269,443	448,608	171,569	0	277,039
56	**2064**	2,711,011	1,088,281	1,183,749	228,626	(59,086)	269,441	448,606	171,569	0	277,037
57	**2065**	2,711,011	1,088,281	1,183,746	228,626	(59,086)	269,444	448,609	171,569	0	277,040
58	**GENERATION TOTALS**	278,545,517	82,145,684	145,163,887	19,493,928	13,358,969	18,383,049	34,297,244	21,065,445	756,876	11,042,287

1/CONSISTS OF DEPRECIATION PLUS ANY ACCOUNTING WRITE-OFFS INCLUDED IN EXPENSES.

2/INCLUDES ADJUSTMENTS FOR ACCRUAL REVENUES OR OTHER ACCRUAL TO CASH ADJUSTMENTS.

Table 9: **Generation Revised Revenue Test Income Statement**

($000s)

		A 2014	B 2015
1	REVENUES FROM PROPOSED RATES	2,802,734	2,867,211
2	OPERATING EXPENSES		
3	POWER SYSTEM GENERATION RESOURCES		
4	OPERATING GENERATION	705,205	757,205
5	OPERATING GENERATION SETTLEMENTS	21,404	21,905
6	NON-OPERATING GENERATION	2,206	2,228
7	CONTRACTED POWER PURCHASES	75,149	56,964
8	AUGMENTATION POWER PURCHASES	27,611	123,273
9	EXCHANGES & SETTLEMENTS	276,582	276,575
10	RENEWABLE GENERATION	39,799	40,147
11	GENERATION CONSERVATION	48,408	49,320
12	CONSERVATION RATE CREDIT		
13	POWER NON-GENERATION OPERATIONS	91,856	94,710
14	PS TRANSMISSION ACQUISITION AND ANCILLARY SERVICES	167,640	168,319
15	F&W/USF&W/PLANNING COUNCIL	295,538	302,769
16	BPA INTERNAL SUPPORT	73,603	76,034
17	OTHER INCOME, EXPENSES AND ADJUSTMENTS	0	0
18	NON-FEDERAL DEBT SERVICE	514,981	437,912
19	DEPRECIATION	127,665	134,451
20	AMORTIZATION	96,462	94,175
21	TOTAL OPERATING EXPENSES	2,564,107	2,635,984
22	INTEREST EXPENSE		
23	INTEREST		
24	APPROPRIATED FUNDS	223,187	220,893
25	CAPITALIZATION ADJUSTMENT	(45,937)	(45,937)
26	BONDS ISSUED TO U.S. TREASURY	68,929	84,766
27	AMORTIZATION OF CAPITALIZED BOND PREMIUMS		
28	ALLOWANCE FOR FUNDS USED DURING CONSTRUCTION	(9,651)	(8,823)
29	INTEREST CREDIT	(6,521)	(11,333)
30	NET INTEREST EXPENSE	230,007	239,566
31	TOTAL EXPENSES	2,794,114	2,875,550
32	NET REVENUES	8,620	(8,339)

Table 10: **Generation Revised Revenue Test Statement of Cash Flow**

($000s)

		A 2014	B 2015
1	CASH PROVIDED BY OPERATING ACTIVITIES		
2	NET REVENUES	8,620	(8,339)
3	NON-CASH ITEMS:		
4	DEPRECIATION AND AMORTIZATION	224,126	228,625
5	AMORTIZATION OF CAPITALIZED BOND PREMIUMS	0	0
6	CAPITALIZATION ADJUSTMENT	(45,937)	(45,937)
7			
8	ACCRUAL REVENUES	(3,524)	(3,524)
9	CASH FLOW ADJUSTMENT (RESERVE)/APPLICATION	(8,500)	8,500
10	CASH PROVIDED BY OPERATING ACTIVITIES	174,785	179,325
11	CASH USED FOR INVESTMENT ACTIVITIES		
12	INVESTMENT IN:		
13	FEDERAL UTILITY PLANT (INCLUDING AFUDC)	(355,318)	(381,272)
14	CONSERVATION	(75,200)	(92,000)
15	FISH & WILDLIFE	(60,275)	(41,807)
16	CASH USED FOR INVESTMENT ACTIVITIES	(490,794)	(515,079)
17	CASH FROM (AND USED FOR) FINANCING ACTIVITIES		
18	INCREASE IN TREASURY DEBT	391,451	466,321
19	REPAYMENT OF TREASURY DEBT	(29,950)	(117,700)
20	INCREASE IN FEDERAL CONSTRUCTION APPROPRIATIONS	99,343	48,758
21	REPAYMENT OF FEDERAL CONSTRUCTION APPROPRIATIONS	(92,288)	(9,475)
22	PAYMENT OF IRRIGATION ASSISTANCE	(52,427)	(51,989)
23	CASH USED FOR FINANCING ACTIVITIES	316,129	335,916
24	ANNUAL INCREASE (DECREASE) IN CASH	120	161

Table 11: **Generation Revenue from Proposed Rates – Results Through the Repayment Period**

($000s)

		A	B	C	D	E	F	G	H	I	J
	YEAR COMBINED CUMULATIVE	REVENUES (STATEMENT A)	OPERATION & MAINTENANCE (STATEMENT E)	PURCHASE & EXCHANGE POWER (STATEMENT E)	DEPRECIATION	NET INTEREST (STATEMENT D)	NET REVENUES (F=A-B-C-D-E)	FUNDS FROM OPERATION NET OF NON CASH EXPENSES 2/	AMORTIZATION	IRRIGATION AMORTIZATION (STATEMENT C)	NET POSITION (J=G-H-I)
1	**1977**	3,298,951	963,839	348,748	807,047	1,220,170	(40,853)	766,194	628,460		137,734
2	**1978–2010**	71,648,593	14,081,826 #	47,211,125 #	4,070,605 #	5,559,607	725,430 #	4,242,416	3,952,810	45,392 #	244,214
3	**2011**	2,619,038	929,012	1,288,758	201,106	182,860	17,302	169,132	162,163		6,969
4	**2012**	2,631,334	950,000	1,273,114	199,286	169,748	39,186	189,196	193,000	1,184	(4,988)
	COST EVALUATION PERIOD										
5	**2013**	2,657,818	974,938	1,287,731	211,403	199,520	(15,774)	146,353	122,800	58,823	(35,270)
	RATE APPROVAL PERIOD										
6	**2014**	2,802,734	1,067,156	1,272,834	224,127	230,007	8,610	174,785	122,238	52,427	120
7	**2015**	2,867,211	1,088,281	1,319,069	228,626	239,566	(8,331)	179,325	127,175	51,989	161
	REPAYMENT PERIOD										
8	**2016**	2,867,211	1,088,281	1,280,677	228,626	250,868	18,759	197,924	130,315	60,814	6,794
9	**2017**	2,867,211	1,088,281	1,321,588	228,626	252,949	(24,233)	154,932	96,860	51,278	6,794
10	**2018**	2,867,211	1,088,281	1,437,683	228,626	257,486	(144,864)	34,301	0	27,505	6,795
11	**2019**	2,867,211	1,088,281	1,213,965	228,626	264,586	71,753	250,918	187,016	57,107	6,794
12	**2020**	2,867,211	1,088,281	1,145,159	228,626	264,800	140,345	319,510	288,169	24,547	6,794
13	**2021**	2,867,211	1,088,281	1,134,105	228,626	259,734	156,464	335,629	316,627	12,208	6,794
14	**2022**	2,867,211	1,088,281	1,109,447	228,626	248,555	192,302	371,467	350,313	14,360	6,794
15	**2023**	2,867,211	1,088,281	1,059,236	228,626	232,119	258,949	438,114	418,370	12,949	6,794
16	**2024**	2,867,211	1,088,281	983,004	228,626	215,080	352,220	531,385	509,463	15,127	6,794
17	**2025**	2,867,211	1,088,281	756,992	228,626	186,188	607,124	786,289	765,772	13,723	6,794
18	**2026**	2,867,211	1,088,281	757,452	228,626	151,244	641,609	820,774	793,041	20,938	6,794
19	**2027**	2,867,211	1,088,281	750,330	228,626	120,217	679,757	858,922	845,940	6,187	6,794
20	**2028**	2,867,211	1,088,281	738,704	228,626	85,276	726,324	905,489	887,435	11,259	6,794
21	**2029**	2,867,211	1,088,281	738,699	228,626	55,654	755,951	935,116	924,257	4,065	6,794
22	**2030**	2,867,211	1,088,281	738,696	228,626	13,474	798,134	977,299	968,470	2,035	6,794
23	**2031**	2,867,211	1,088,281	738,701	228,626	(16,272)	827,875	1,007,040	989,612	10,634	6,794
24	**2032**	2,867,211	1,088,281	738,700	228,626	(55,194)	866,797	1,045,962	589,492	0	456,471
25	**2033**	2,867,211	1,088,281	729,630	228,626	(73,766)	894,439	1,073,604	171,569	4,348	897,687
26	**2034**	2,867,211	1,088,281	722,447	228,626	(73,859)	901,716	1,080,881	171,569	0	909,312
27	**2035**	2,867,211	1,088,281	717,136	228,626	(73,928)	907,096	1,086,261	171,569	7,843	906,849

Table 11, cont.

		A	B	C	D	E	F	G	H	I	J
	YEAR COMBINED CUMULATIVE	REVENUES (STATEMENT A)	OPERATION & MAINTENANCE (STATEMENT E)	PURCHASE & EXCHANGE POWER (STATEMENT E)	DEPRECIATION	NET INTEREST (STATEMENT D)	NET REVENUES (F=A-B-C-D-E)	FUNDS FROM OPERATION NET OF NON CASH EXPENSES 2/	AMORTIZATION	IRRIGATION AMORTIZATION (STATEMENT C)	NET POSITION (J=G-H-I)
28	**2036**	2,867,211	1,088,281	713,165	228,626	(73,980)	911,119	1,090,284	171,569	28,920	889,794
29	**2037**	2,867,211	1,088,281	712,537	228,626	(73,988)	911,755	1,090,920	171,569	16,232	903,119
30	**2038**	2,867,211	1,088,281	713,161	228,626	(73,980)	911,123	1,090,288	171,569	0	918,719
31	**2039**	2,867,211	1,088,281	713,156	228,626	(73,980)	911,127	1,090,292	171,569	14,229	904,494
32	**2040**	2,867,211	1,088,281	713,158	228,626	(73,980)	911,126	1,090,291	171,569	0	918,722
33	**2041**	2,867,211	1,088,281	713,169	228,626	(73,980)	911,114	1,090,279	171,569	0	918,710
34	**2042**	2,867,211	1,088,281	713,165	228,626	(73,980)	911,118	1,090,283	171,569	73,659	845,055
35	**2043**	2,867,211	1,088,281	713,165	228,626	(73,980)	911,118	1,090,283	171,569	0	918,714
36	**2044**	2,867,211	1,088,281	835,425	228,626	(72,390)	787,269	966,434	171,569	0	794,865
37	**2045**	2,867,211	1,088,281	1,183,748	228,626	(67,862)	434,418	613,583	171,569	11,700	430,314
38	**2046**	2,867,211	1,088,281	1,183,747	228,626	(67,862)	434,419	613,584	171,569	0	442,015
39	**2047**	2,867,211	1,088,281	1,183,749	228,626	(67,862)	434,417	613,582	171,569	0	442,013
40	**2048**	2,867,211	1,088,281	1,183,747	228,626	(67,862)	434,419	613,584	171,569	0	442,015
41	**2049**	2,867,211	1,088,281	1,183,748	228,626	(67,862)	434,418	613,583	171,569	0	442,014
42	**2050**	2,867,211	1,088,281	1,183,747	228,626	(67,862)	434,419	613,584	171,569	0	442,015
43	**2051**	2,867,211	1,088,281	1,183,746	228,626	(67,862)	434,420	613,585	171,569	0	442,016
44	**2052**	2,867,211	1,088,281	1,183,747	228,626	(67,862)	434,419	613,584	171,569	0	442,015
45	**2053**	2,867,211	1,088,281	1,183,747	228,626	(67,862)	434,419	613,584	171,569	0	442,015
46	**2054**	2,867,211	1,088,281	1,183,748	228,626	(67,862)	434,418	613,583	171,569	0	442,014
47	**2055**	2,867,211	1,088,281	1,183,748	228,626	(67,862)	434,418	613,583	171,569	0	442,014
48	**2056**	2,867,211	1,088,281	1,183,745	228,626	(67,862)	434,421	613,586	171,569	0	442,017
49	**2057**	2,867,211	1,088,281	1,183,745	228,626	(67,862)	434,421	613,586	171,569	0	442,017
50	**2058**	2,867,211	1,088,281	1,183,746	228,626	(67,862)	434,420	613,585	171,569	0	442,016
51	**2059**	2,867,211	1,088,281	1,183,750	228,626	(67,862)	434,416	613,581	171,569	0	442,012
52	**2060**	2,867,211	1,088,281	1,183,749	228,626	(67,862)	434,417	613,582	171,569	0	442,013
53	**2061**	2,867,211	1,088,281	1,183,749	228,626	(67,862)	434,417	613,582	171,569	0	442,013
54	**2062**	2,867,211	1,088,281	1,183,747	228,626	(67,862)	434,419	613,584	171,569	0	442,015
55	**2063**	2,867,211	1,088,281	1,183,747	228,626	(67,862)	434,419	613,584	171,569	0	442,015
56	**2064**	2,867,211	1,088,281	1,183,749	228,626	(67,862)	434,417	613,582	171,569	0	442,013
57	**2065**	2,867,211	1,088,281	1,183,746	228,626	(67,862)	434,420	613,585	171,569	0	442,016
58	**GENERATION TOTALS**	285,899,816	82,145,684	145,156,168	19,493,928	12,956,098	26,147,938	42,062,133	21,065,445	756,876	18,807,176

1/CONSISTS OF DEPRECIATION PLUS ANY ACCOUNTING WRITE-OFFS INCLUDED IN EXPENSES.

2/INCLUDEs ADJUSTMENTS FOR ACCRUAL REVENUES OR OTHER ACCRUAL TO CASH ADJUSTMENTS.

Table 12: **Amortization of Generation Investments Over Repayment Period**
($000s)

	A	B	C	D	E	F	G	H	I	J	K
		Investments Placed in Service							Irrigation Assistance		
	Fiscal Year	Original & New Obligations	Replacements	Cumulative Amount In Service	Due Amortization	Discretionary Amortization	Unamortized Investment	Term Investment Schedule	Cumulative Amount In Service	Amortization	Unamortized Amount
1	2012	5,637,415	-	5,637,415	-	-	4,972,508	6,166,020	664,908	-	664,908
2	2013	546,006	-	6,183,421	122,800	-	5,395,714	6,449,226	-	58,823	606,085
3	2014	490,792	-	6,674,213	29,950	91,167	5,765,389	6,847,494	-	52,427	553,658
4	2015	431,756	-	7,105,969	117,700	8,209	6,071,236	7,034,050	-	51,989	501,669
5	2016	-	191,022	7,296,991	10,500	119,815	6,131,943	7,211,868	-	60,814	440,855
6	2017	-	184,494	7,481,485	-	96,860	6,219,577	7,330,236	-	51,278	389,576
7	2018	-	185,357	7,666,842	-	-	6,404,934	7,470,388	-	27,505	362,071
8	2019	-	182,808	7,849,650	121,878	65,138	6,400,726	7,396,546	-	57,107	304,964
9	2020	-	180,336	8,029,986	169,128	119,041	6,292,893	7,293,925	-	24,547	280,417
10	2021	-	178,641	8,208,627	59,936	256,691	6,154,907	7,328,782	-	12,208	268,209
11	2022	-	171,569	8,380,196	-	350,313	5,976,163	7,432,638	-	14,360	253,849
12	2023	-	171,569	8,551,765	140,000	278,370	5,729,361	7,291,194	-	12,949	240,900
13	2024	-	171,569	8,723,334	35,000	474,463	5,391,467	7,420,495	-	15,127	225,773
14	2025	-	171,569	8,894,903	61,365	704,407	4,797,264	7,291,209	-	13,723	212,050
15	2026	-	171,569	9,066,472	172,537	620,504	4,175,792	7,054,054	-	20,938	191,112
16	2027	-	171,569	9,238,041	128,000	717,940	3,501,421	6,986,512	-	6,187	184,924
17	2028	-	171,569	9,409,610	67,145	820,290	2,785,554	6,874,736	-	11,259	173,665
18	2029	-	171,569	9,581,179	65,275	858,982	2,032,866	6,723,609	-	4,065	169,601
19	2030	-	171,569	9,752,748	41,808	926,662	1,235,965	6,850,256	-	2,035	167,566
20	2031	-	171,569	9,924,317	-	989,612	417,923	6,979,473	-	10,634	156,932
21	2032	-	171,569	10,095,886	-	589,492	()	6,944,529	-	-	156,932
22	2033	-	171,569	10,267,455	-	171,569	()	6,817,264	-	4,348	152,584
23	2034	-	171,569	10,439,024	-	171,569	()	6,933,833	-	-	152,584
24	2035	-	171,569	10,610,593	-	171,569	()	7,037,188	-	7,843	144,741
25	2036	-	171,569	10,782,162	-	171,569	()	7,178,493	-	28,920	115,821
26	2037	-	171,569	10,953,731	-	171,569	()	7,247,526	-	16,232	99,589
27	2038	-	171,569	11,125,300	-	171,569	()	7,270,247	-	-	99,589
28	2039	-	171,569	11,296,869	-	171,569	()	7,311,816	-	14,229	85,359
29	2040	-	171,569	11,468,438	-	171,569	()	7,430,628	-	-	85,359
30	2041	-	171,569	11,640,007	-	171,569	()	7,501,446	-	-	85,359
31	2042	-	171,569	11,811,576	-	171,569	()	7,628,141	-	73,659	11,700
32	2043	-	171,569	11,983,145	-	171,569	()	7,400,415	-	-	11,700
33	2044	-	171,569	12,154,714	-	171,569	()	7,261,853	-	-	11,700
34	2045	-	171,569	12,326,283	-	171,569	()	7,108,222	-	11,700	-
35	2046	-	171,569	12,497,852	-	171,569	()	7,250,943	-	-	-
36	2047	-	171,569	12,669,421	-	171,569	()	7,353,201	-	-	-
37	2048	-	171,569	12,840,990	-	171,569	()	7,524,770	-	-	-
38	2049	-	171,569	13,012,559	-	171,569	()	7,652,339	-	-	-
39	2050	-	171,569	13,184,128	-	171,569	()	7,737,301	-	-	-
40	2051	-	171,569	13,355,697	-	171,569	()	7,799,961	-	-	-
41	2052	-	171,569	13,527,266	-	171,569	()	7,957,603	-	-	-
42	2053	-	171,569	13,698,835	-	171,569	()	8,053,586	-	-	-
43	2054	-	171,569	13,870,404	-	171,569	()	8,118,020	-	-	-
44	2055	-	171,569	14,041,973	-	171,569	()	8,144,107	-	-	-
45	2056	-	171,569	14,213,542	-	171,569	()	7,937,095	-	-	-
46	2057	-	171,569	14,385,111	-	171,569	()	8,051,652	-	-	-
47	2058	-	171,569	14,556,680	-	171,569	()	8,164,005	-	-	-
48	2059	-	171,569	14,728,249	-	171,569	()	8,184,003	-	-	-
49	2060	-	171,569	14,899,818	-	171,569	()	8,293,764	-	-	-
50	2061	-	171,569	15,071,387	-	171,569	()	8,352,200	-	-	-
51	2062	-	171,569	15,242,956	-	171,569	()	8,430,054	-	-	-
52	2063	-	171,569	15,414,525	-	171,569	()	8,456,657	-	-	-
53	2064	-	171,569	15,586,094	-	171,569	()	8,628,226	-	-	-
54	2065	-	171,569	15,757,663	-	171,569	()	8,799,795	-	-	-
		$7,105,969	**$8,651,694**		**$1,343,022**	**$13,749,734**				**$664,908**	

BONNEVILLE POWER ADMINISTRATION
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