Reclamation-Wide Power Profile

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Reclamation: The Bureau of Reclamation, an agency of the Department of the Interior, manages water and related resources in the western United States. Five regions cover the 17 Western States. The Power Resources Office develops and coordinates policy and power activities with external groups and provides leadership and guidance for Reclamation's power program.

NERC Regions: Western Systems Coordinating Council and Mid-Continent Area Power Pool

PMA Service Area: Bonneville Power Administration and Western Area Power Administration

Authorization: The Secretary of the Interior has authority to develop the hydropower potential of Reclamation projects under the following acts:

- The Reclamation Act of 1902 authorized the Secretary of the Interior to develop irrigation and hydropower projects in the 17 Western States.

- The Town Sites and Power Development Acts of 1906 authorized the Secretary of the Interior to lease surplus power or power privileges.

- The Federal Water Power Act of 1920 regulated hydroelectric development of navigable waterways.

- The Reclamation Project Act of 1939 extended the contract term to 40 years for sale of power or lease of power privileges, giving preference to qualifying entities.

- Individual project authorizations.

Purposes: Reclamation plans, develops, and manages multipurpose water projects in the 17 Western States. The primary purposes of Reclamation projects have been irrigation; flood control; and water for domestic, industrial, and municipal uses. Including power in multipurpose Federal Reclamation projects is considered when it is in the national interest, economically justified, feasible by engineering and environmental standards, required for pumping to supply irrigation water, and capable of repaying its share of the Federal investment in accordance with Reclamation law.

Power Uses: Electric power produced at Reclamation's 58 hydropower facilities is used for pumping on Reclamation projects or sold as excess power. Reclamation power is marketed and transmitted by Federal PMAs. Preference for firm power contracts is given to municipalities, public corporations, public agencies, and cooperatives or other nonprofit organizations. Revenues from power sales are used to repay project costs. In addition, power revenues are scheduled to repay portions of other project costs, such as salinity control and irrigation.

Facts: Reclamation's power facilities cover a wide range of capacities, designs, and functions. This report provides powerplant facts, locations, purpose, special issues, etc. Similar information is available on the Internet at www.usbr.gov/power.

History: Reclamation's original purpose, "to provide for the reclamation of arid and semiarid lands in the West," now covers a wide range of interrelated functions. These include providing municipal and industrial water supplies, hydroelectric power generation, irrigation water for agriculture, water quality improvement, flood control, river regulation, navigation improvement, fish and wildlife enhancement, recreation, and research in water management. Reclamation programs involve close cooperation with the Congress, other Federal agencies, States, Indian Tribes, local governments, academic institutions, water user organizations, wildlife groups, recreation groups, conservation groups, and others.

Electric power generated at Reclamation damsites was initially used to process materials as well as to construct the engineering works. The plants powered sawmills, concrete plants, cableways, hoists, giant shovels, and draglines; they also powered lights for round-the-clock

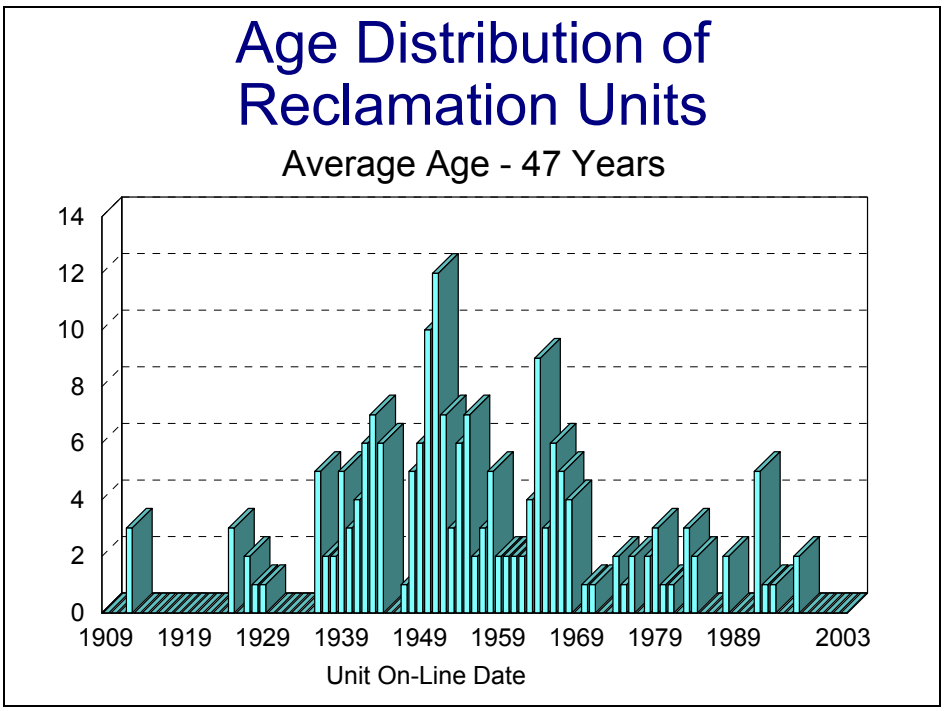
operations at some damsites. After construction, the energy-powered pumps provided drainage or conveyed water to lands that gravity canal systems could not reach. Surplus power was sold to municipal and farm consumers and helped meet local industrial demands for electricity. Hydroelectric features were included in project construction costs repaid by the water and power users under provisions of the Reclamation Act of 1902.

Location: Reclamation operates in the 17 Western States and has powerplants in 11 of the most western States.

Rivers: Reclamation's 58 hydropower electric powerplants are on 18 major rivers and numerous smaller tributaries.

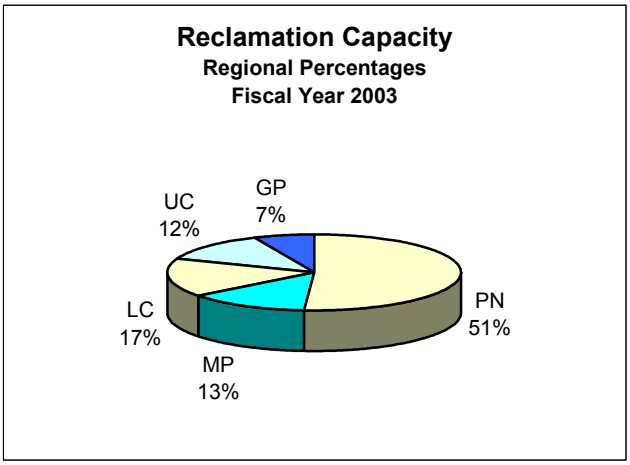
Installed Capacity (FY 2003):	14,758 MW	**Initial Operation:**	1909-1994
Net Generation (FY 2003):	38.0 billion kWh	**Average Unit Size[1]:**	77 MW
Average Powerplant Size:	254 MW	**Average Age:**	47 years
Range of Rated Head:	24 to 2,490 feet	**Remotely Operated:**	44 Yes and 14 No
Average Annual Plant Factor:	30 percent		

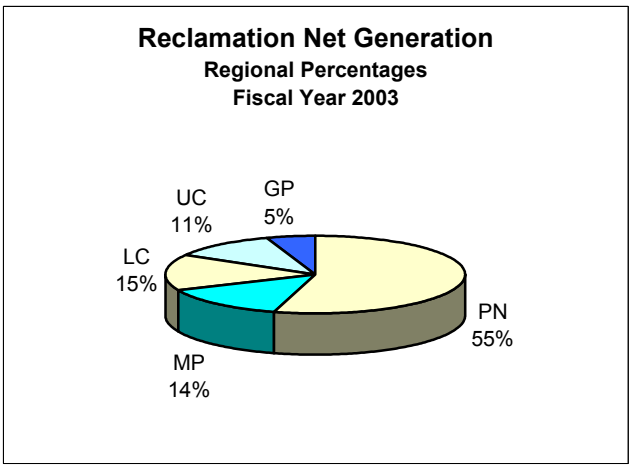
The accompanying chart portrays the age distribution of the generating units.



[1]The average includes the portion of San Luis' eight units jointly owned with the State of California.

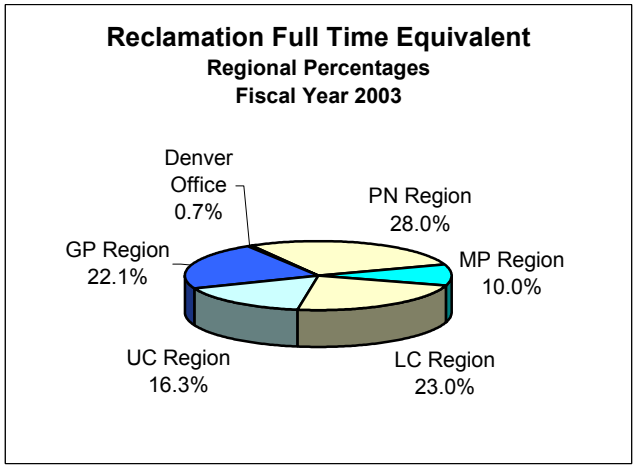
The total capacity for Reclamation in fiscal year 2003 was 14,758 megawatts. The regional breakdown is shown on the accompanying chart.



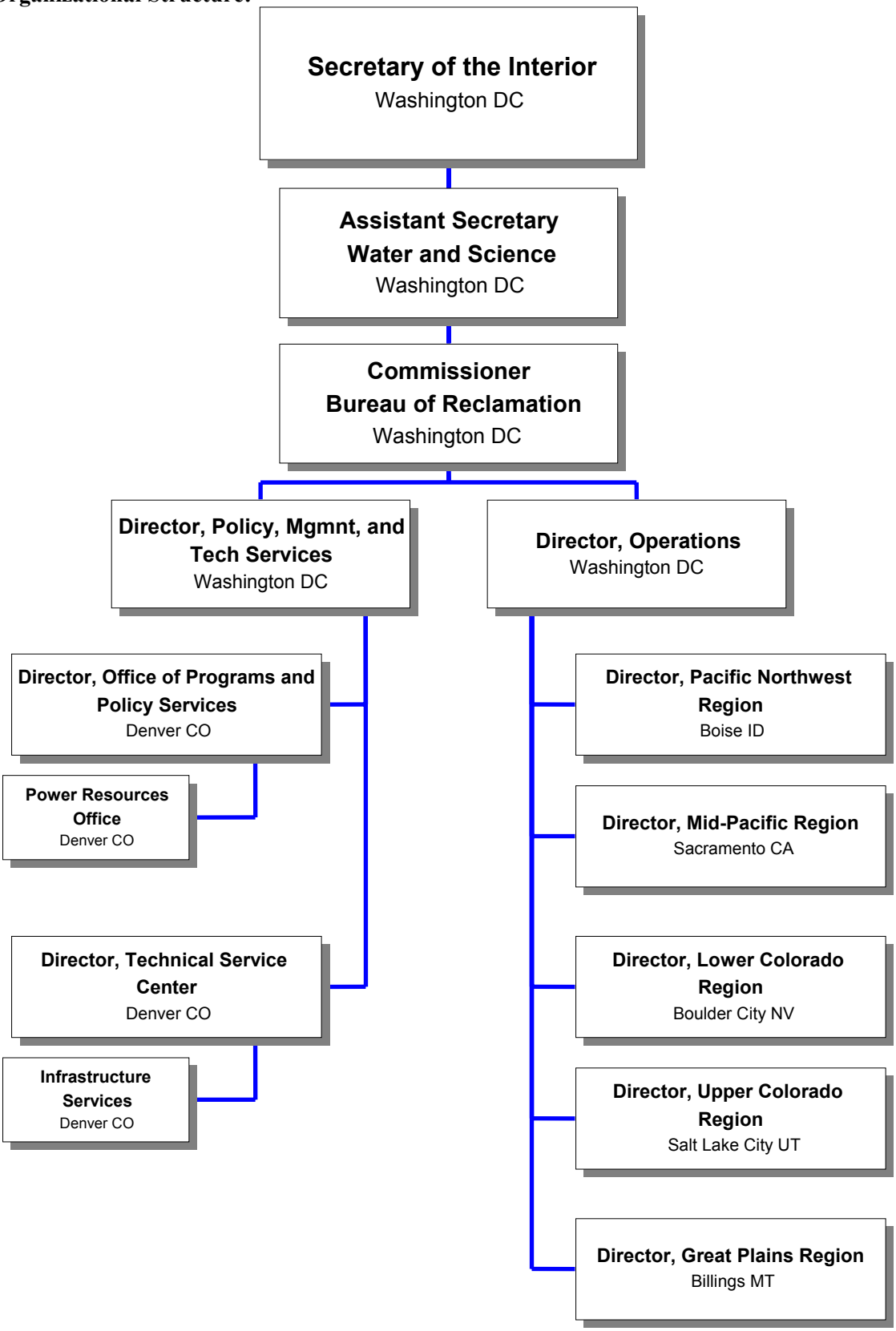


In fiscal year 2003, Reclamation produced 37,999,147 net megawatt hours of energy.

In fiscal year 2003, the power employees worked the equivalent of 627 full time employees.



Organizational Structure:



This organizational structure displays the offices directly involved with the power program.

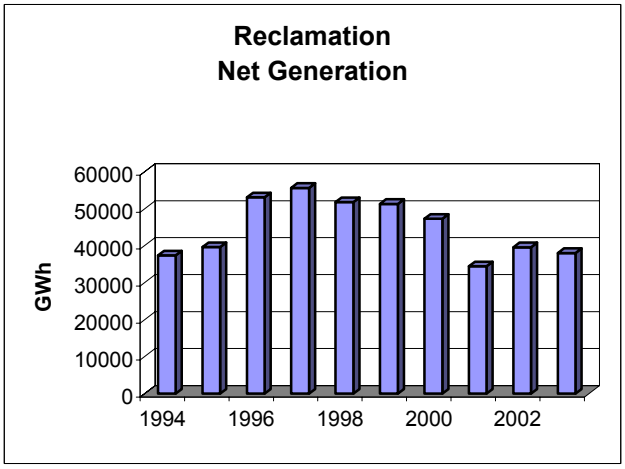
Generators

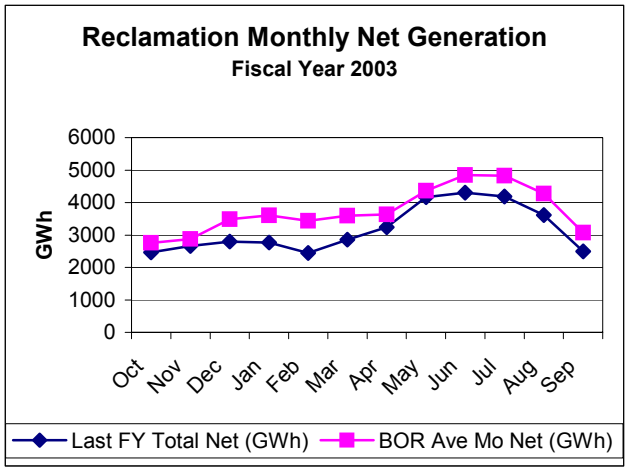
Reclamation Generators

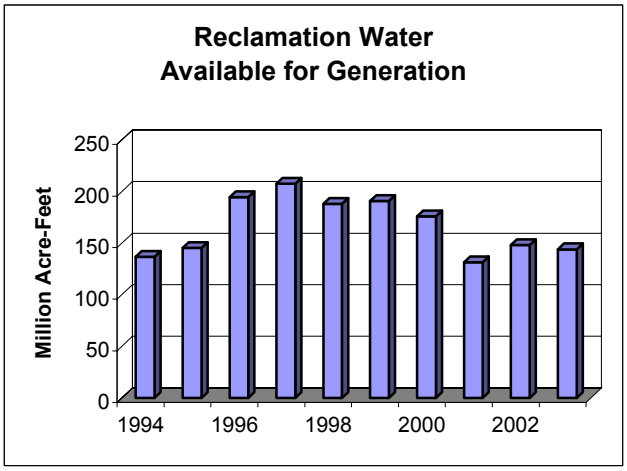
Existing Number and Capacity
Fiscal Year 2003

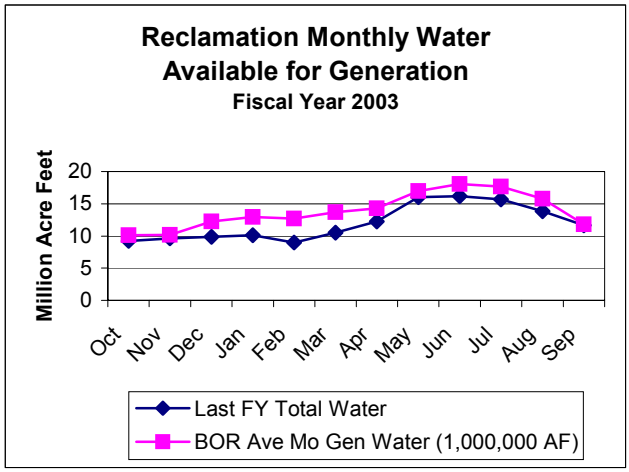
Region	Number of Powerplants	Number of Units	Installed Capacity (MW)	Net Generation (GWh)
PN	10	56	7,535	20,736,560
MP	12	40	1,964	5,256,115
LC	3	28	2,450	5,698,562
UC	12	26	1,805	4,284,137
GP	21	44	1,004	2,023,773
Reclamation Total	58	194	14,758	37,999,147

Generation



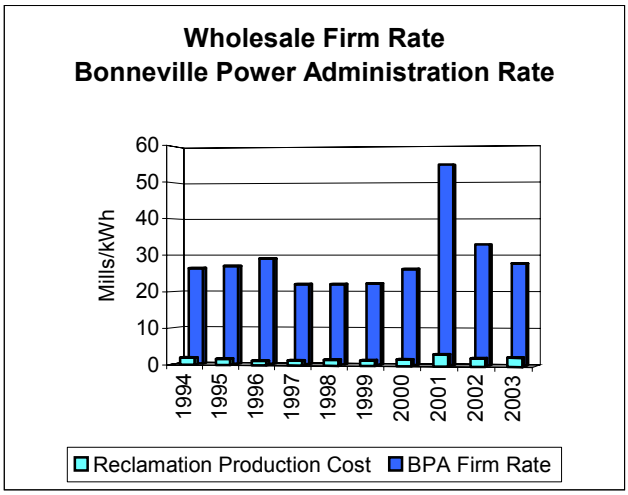


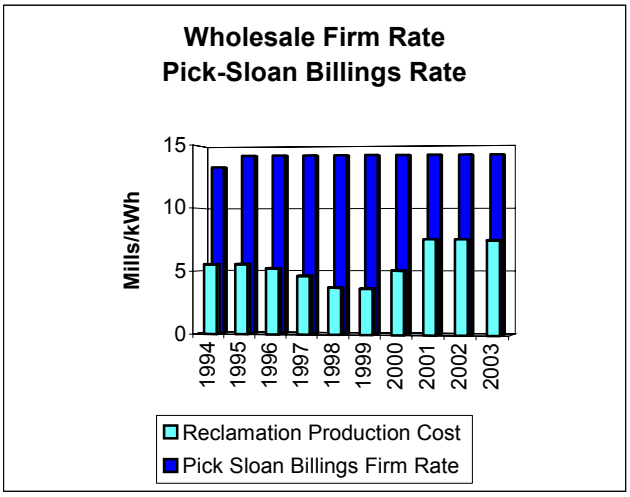


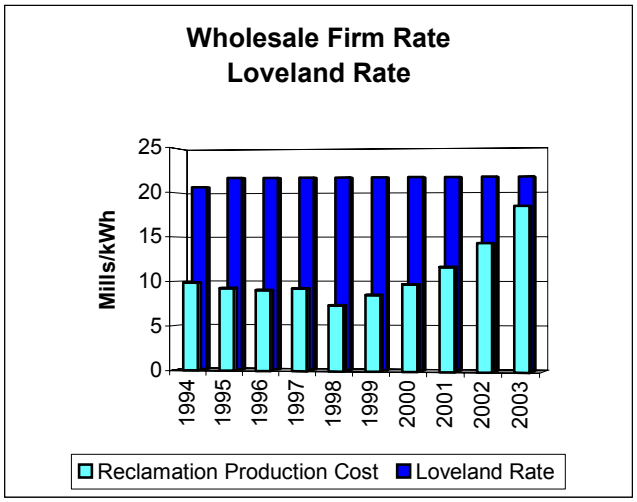


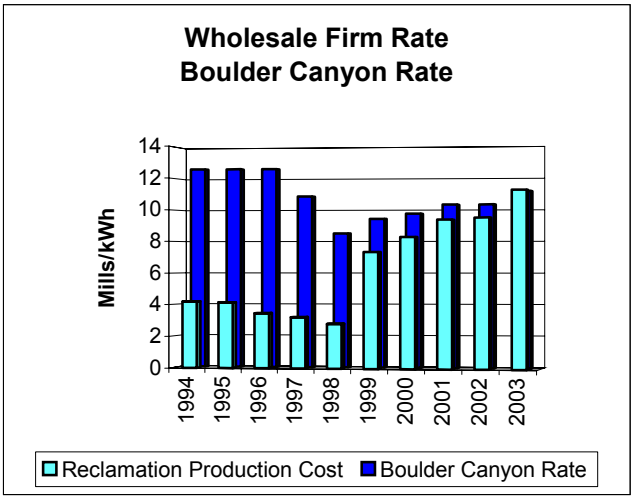
Prime Laboratory Benchmarks

Benchmark 1
Wholesale Firm Rate









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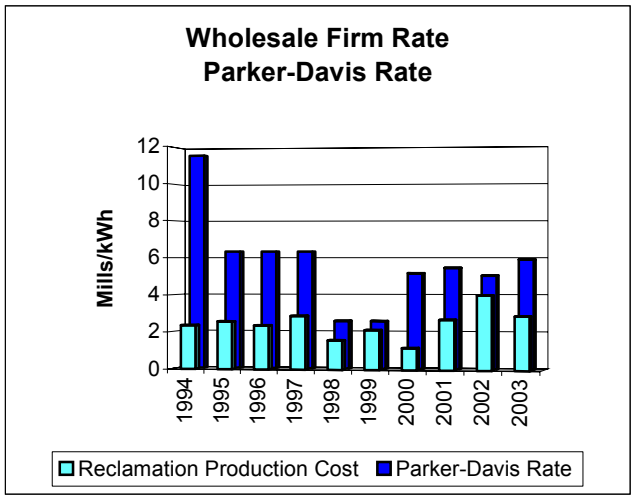
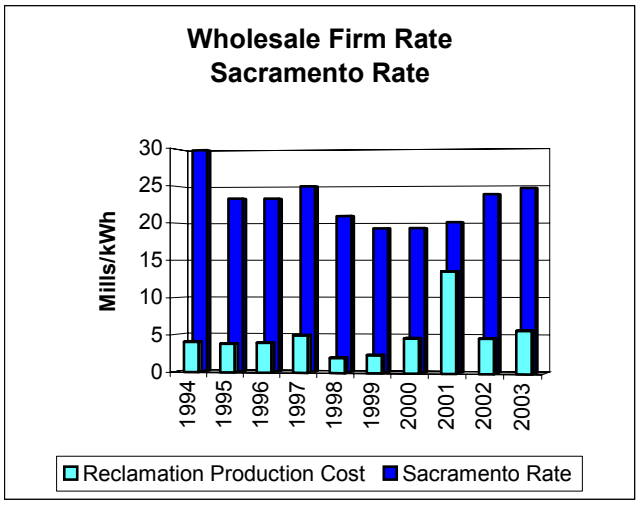
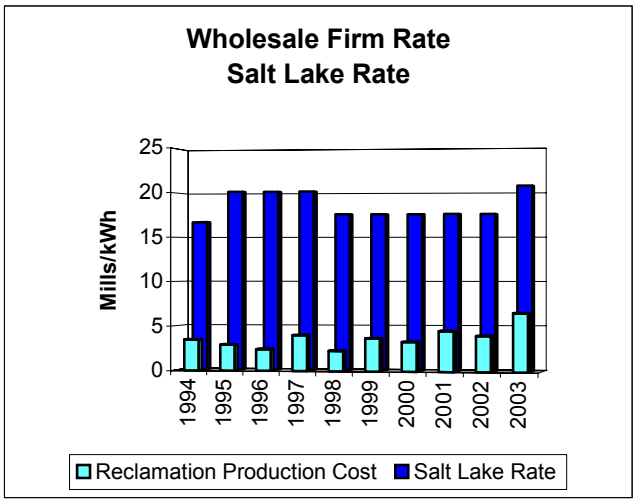
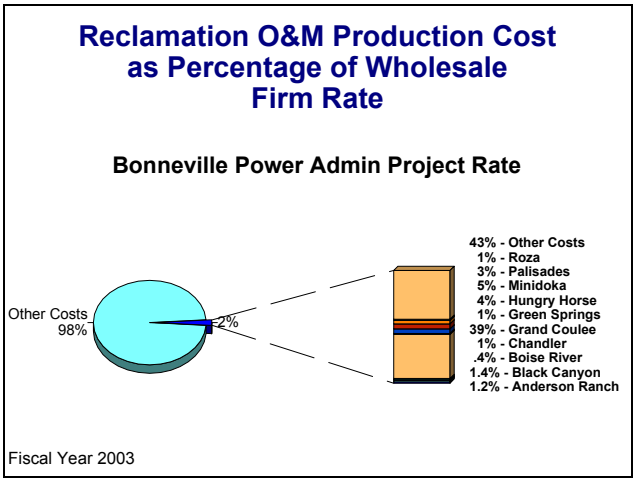
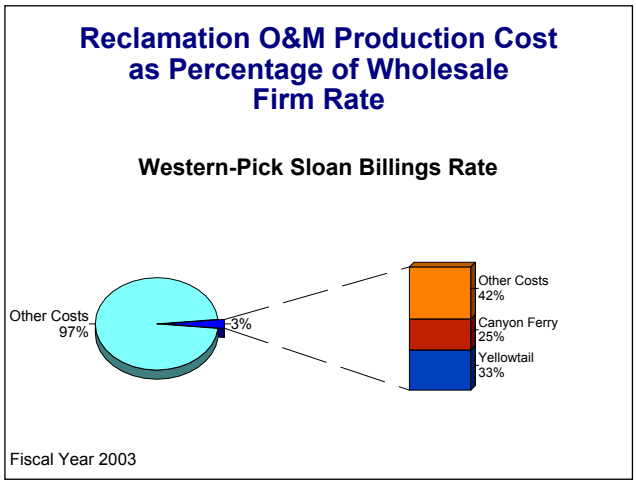


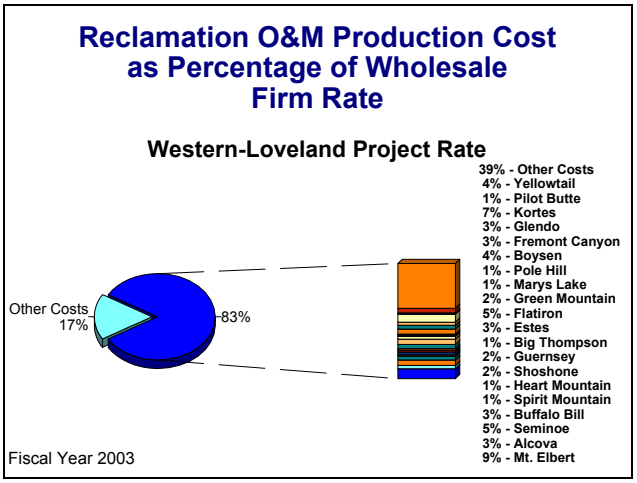


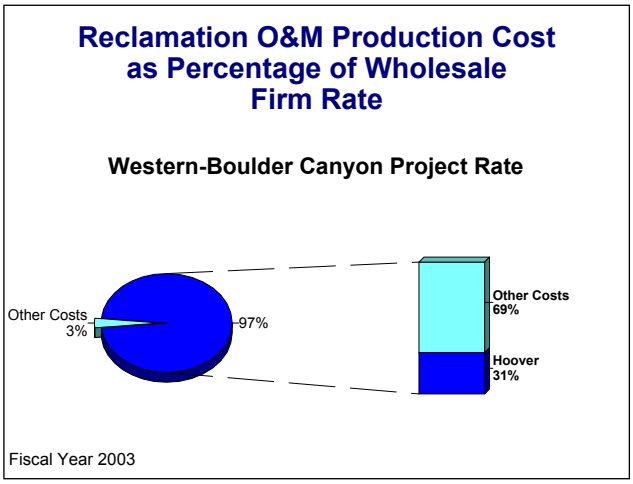


Benchmark 2
Reclamation's Production Cost as Percentage of Wholesale Firm Rate









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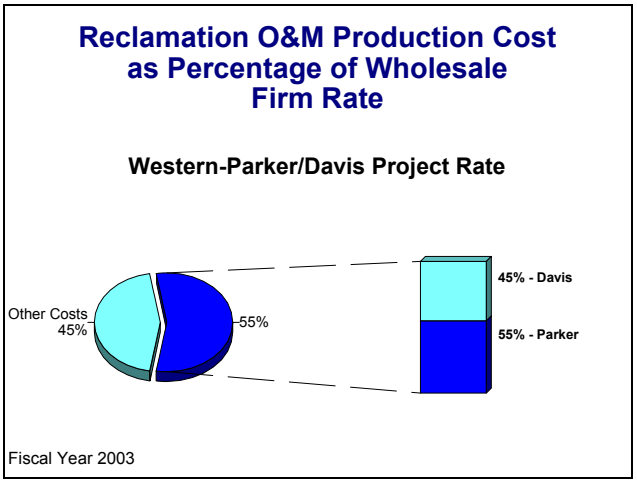
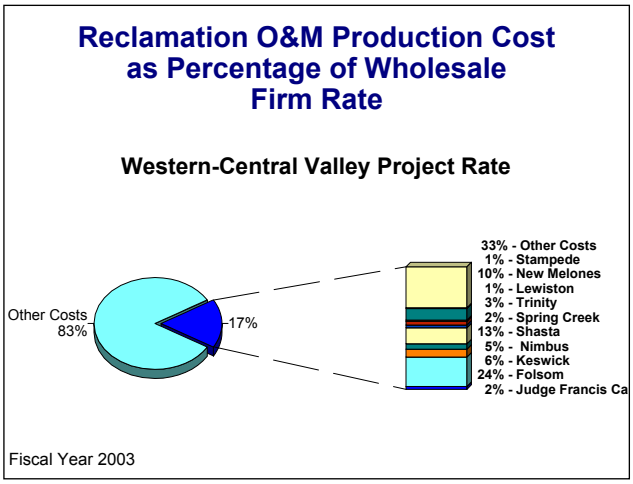
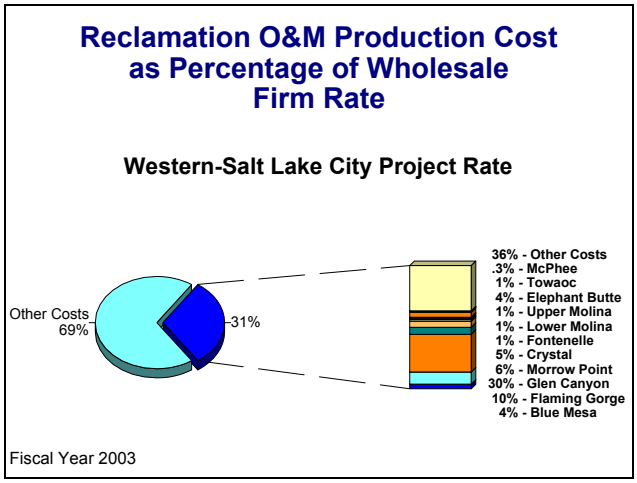
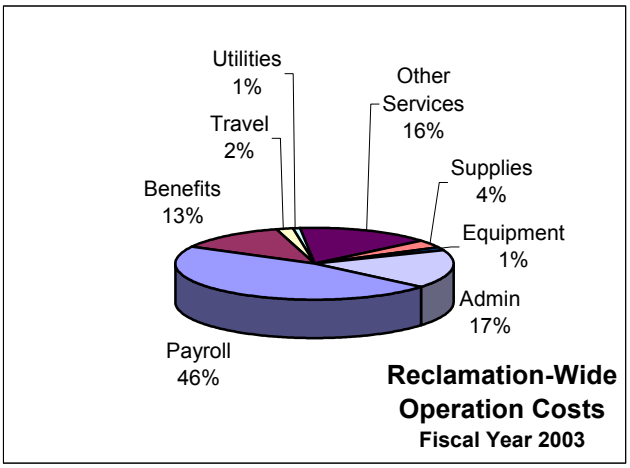
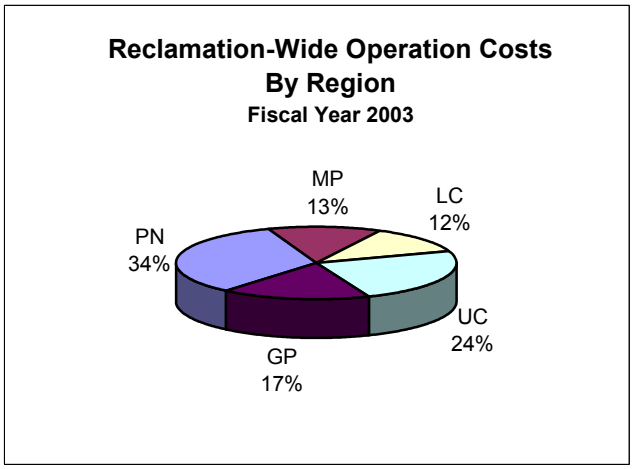


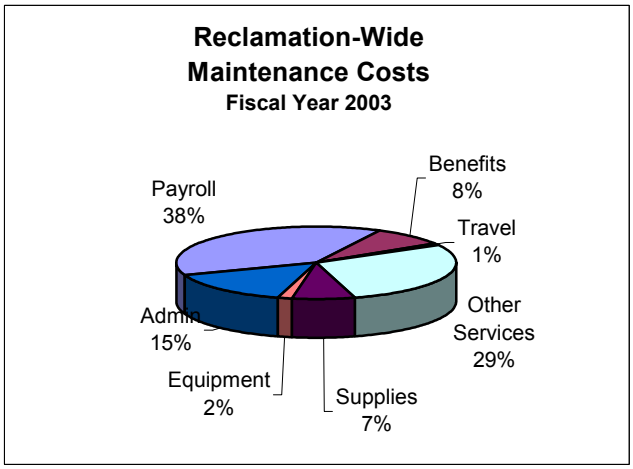


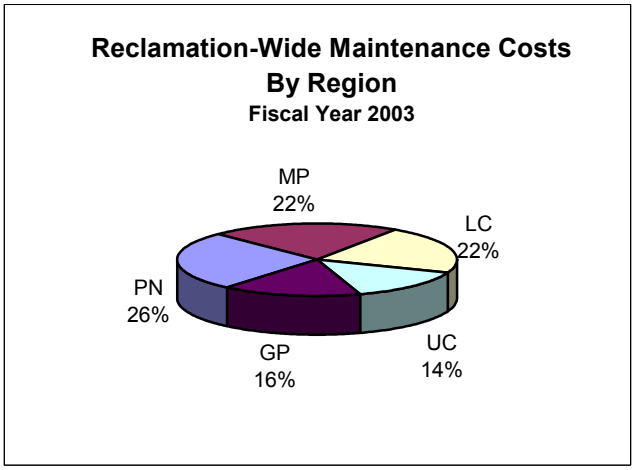


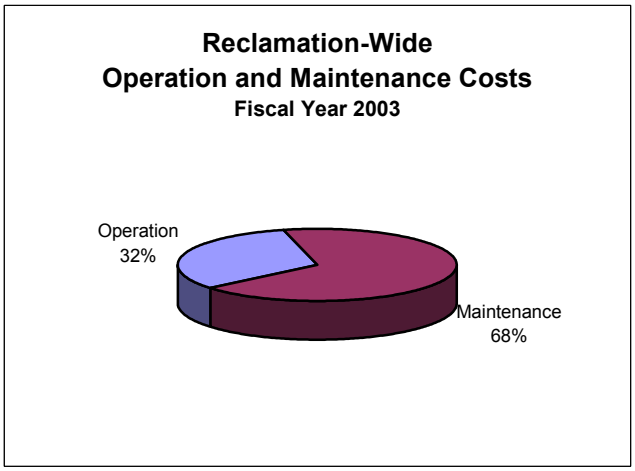
Benchmark 3
Production Cost

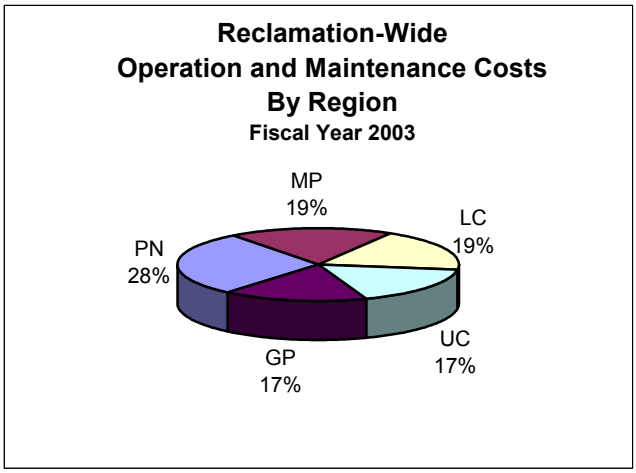






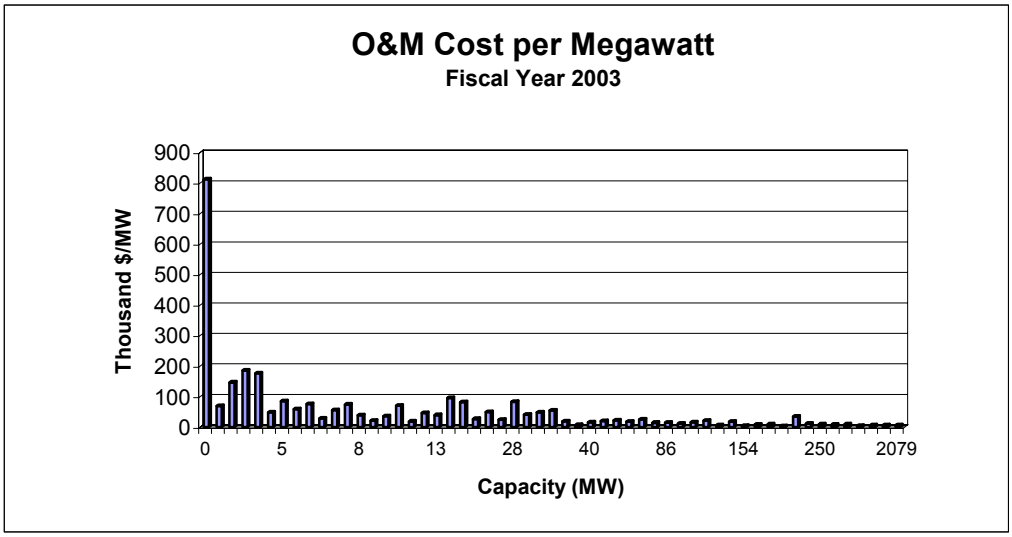






Benchmark 3
Production Cost

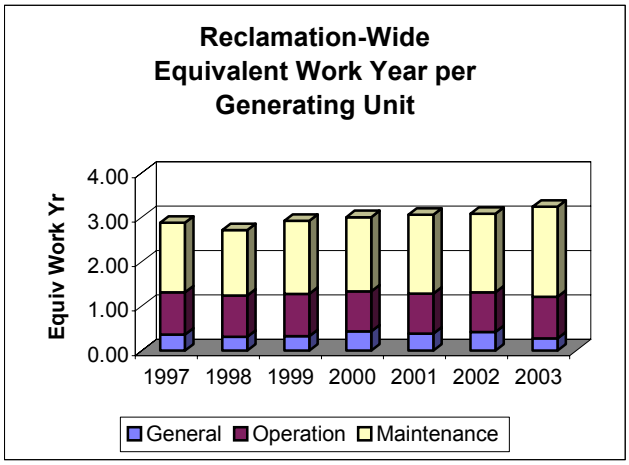
A plot of O&M cost per kilowatt-hour by plant capacity is shown below.

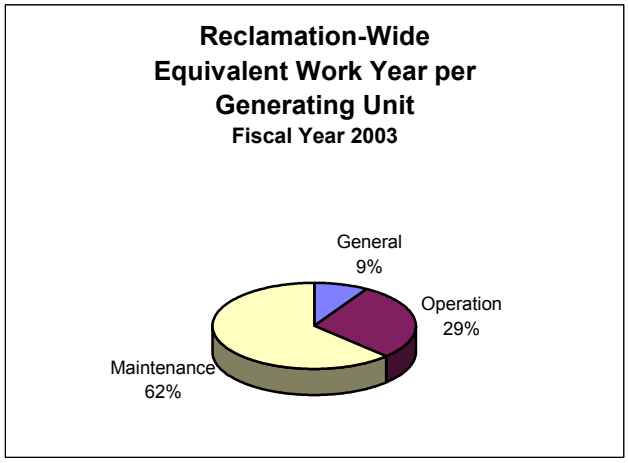


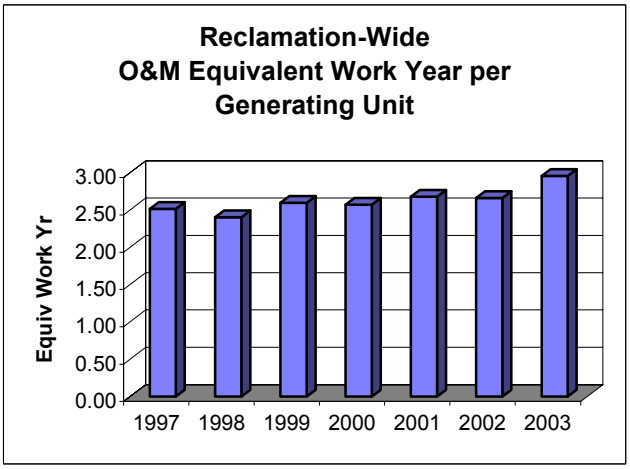
Benchmark 4
Workforce Deployment

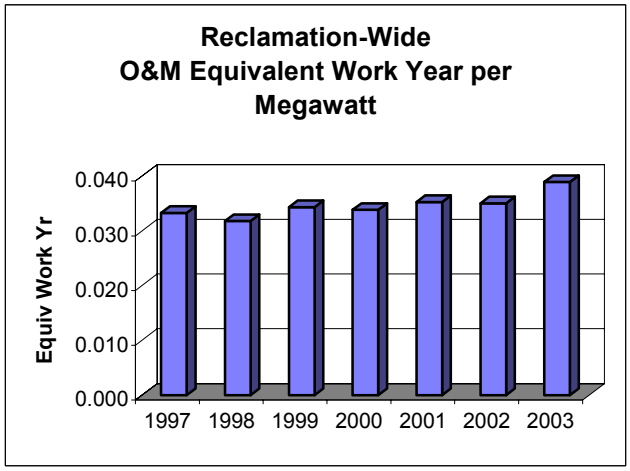
Reclamation-Wide 2003 Equivalent Work Year Levels

	Plant Total Equiv	DO Additive	Total Allocated to Plant	Total per Unit	Total per Megawatt
General	49.5	4.2	53.7	0.3	0.00
Operation	181.1	0.0	181.1	0.9	0.01
Maintenance	392.4	0.0	392.4	2.0	0.03
Total Equiv Work Yr	623.0	4.2	627.2	3.2	0.04

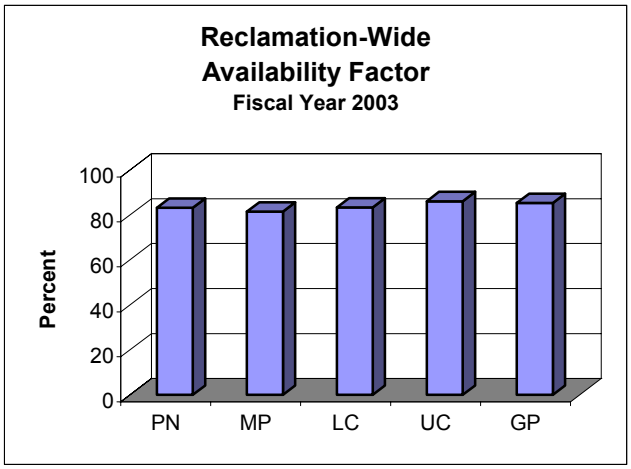




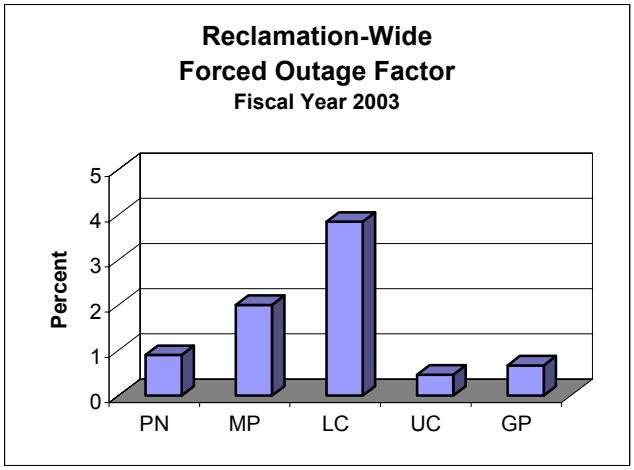




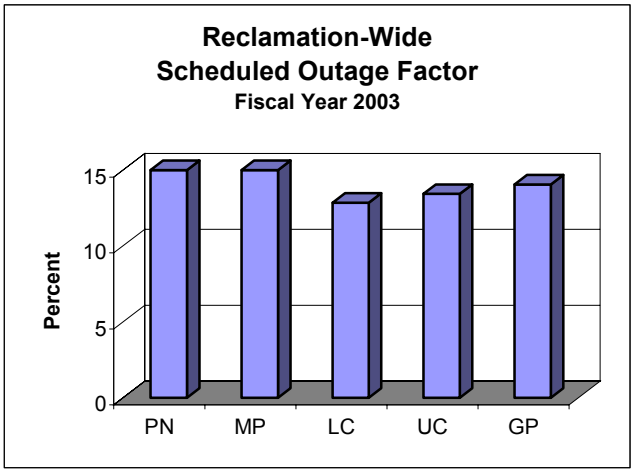
Benchmark 5
Availability Factor



Benchmark 6
Forced Outage Factor



Benchmark 7
Scheduled Outage Factor



Reclamation-Wide Power Performance