# Alcova Powerplant Kendrick Project

## **Ancillary Services**

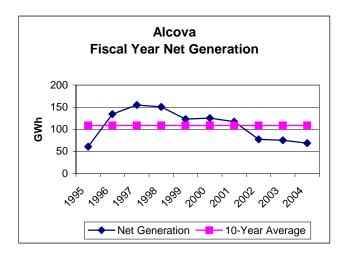
Alcova Ancillary Services				
Spinning Reserve	Yes			
Non-Spinning Reserve	Yes			
Replacement Reserve	Yes			
Regulation/Load Following	Yes			
Black Start	No			
Voltage Support	Yes			

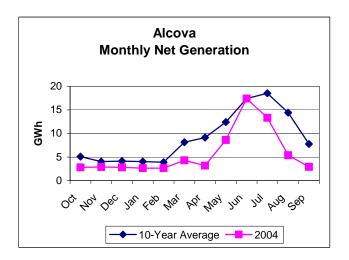
#### Generators

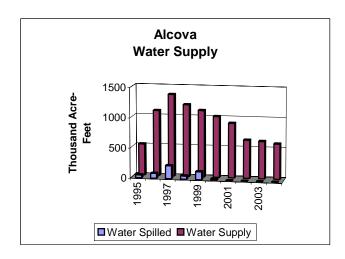
Alcova Generators Existing Number and Capacity				
Unit #	Unit # Original Capacity   Capacity   Increased (kW)		Present Capacity (kW)	
1	18,000	2,700	20,700	
2	18,000	2,700	20,700	
2 Units	36,000	5,400	41,400	

Units 1 and 2 were rewound in FY-2002 and FY-2001, respectively, for a 1.0 power factor which increased the rating per unit to 20,700 kW.

### Generation

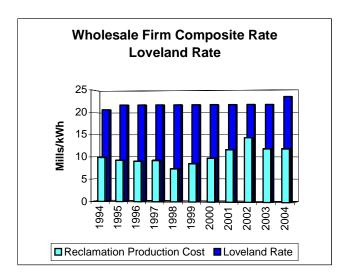




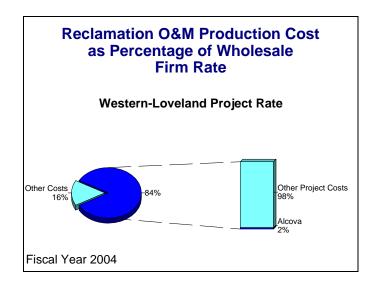


### **Prime Laboratory Benchmarks**

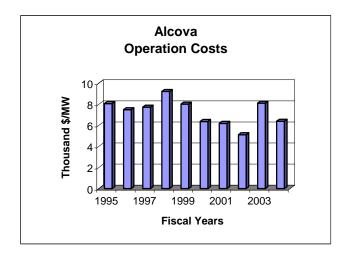
### Benchmark 1 Wholesale Firm Rate

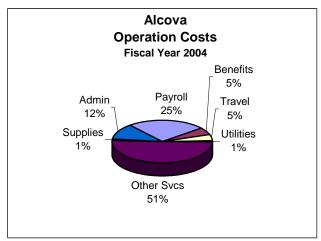


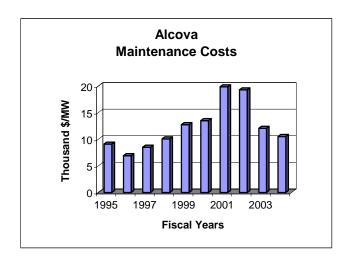
Benchmark 2
Reclamation's Production Costs as Percentage of Wholesale Firm Rate

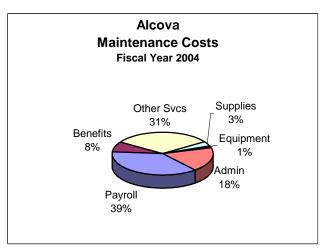


# **Benchmark 3 Production Costs**



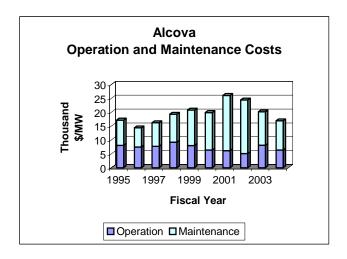


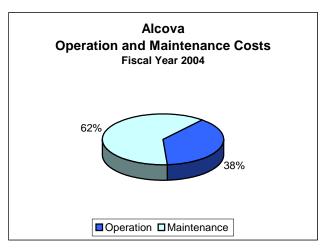


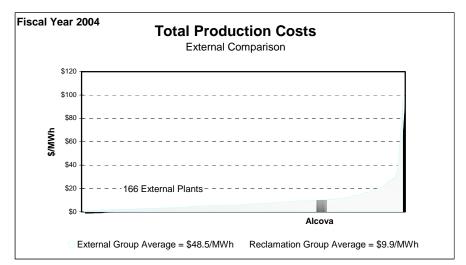


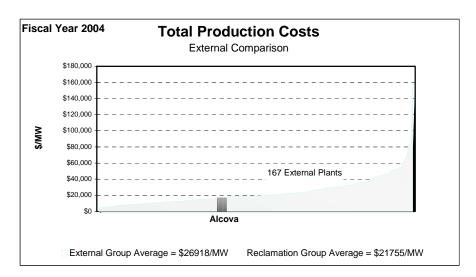
Overhaul of generator turbines in conjunction with rewind of Unit 2 in FY-2001 and Unit 1 in FY-2002.

# **Benchmark 3 Production Costs**



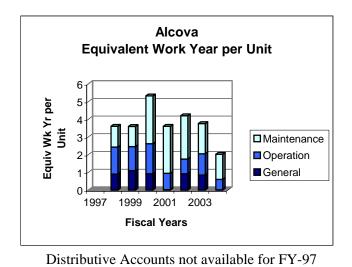


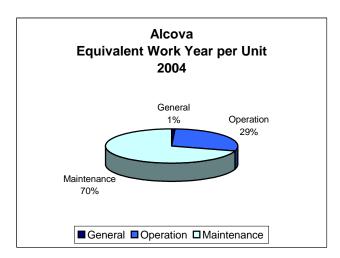


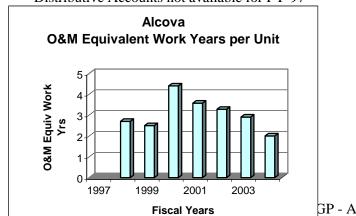


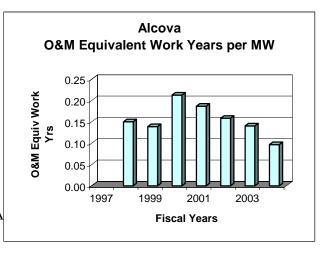
`Benchmark 4 Workforce Deployment

Alcova FY-2004 Equivalent Work Year Staffing Levels						
	Equivalent Work Year Staffing Charged to Powerplant	Leave Additive	Denver and Washington Equivalent Work Year Staffing Additive	Total Equivalent Work Year Staffing Allocated to Powerplant	Total Equivalent Work Year Staffing per Generating Unit	Total Equivalent Work Year Staffing per Megawatt
General	0.00	0.00	0.03	0.03	0.02	0.00
Operation	1.05	0.12	0.00	1.17	0.58	0.03
Maintenance	2.54	0.29	0.00	2.84	1.42	0.07
Total Staffing	3.59	0.41	0.03	4.04	2.02	0.10

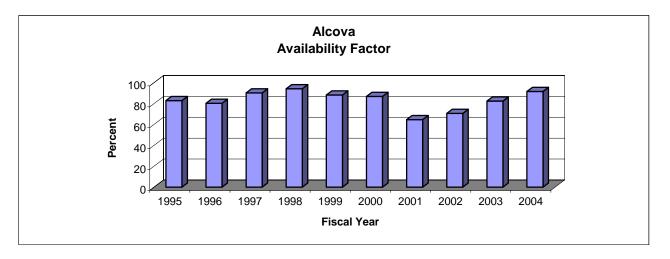








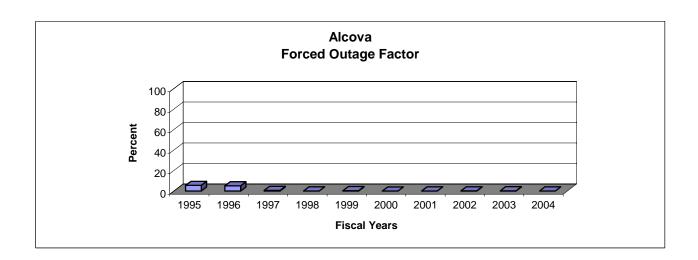
### Benchmark 5 Plant Availability Factor



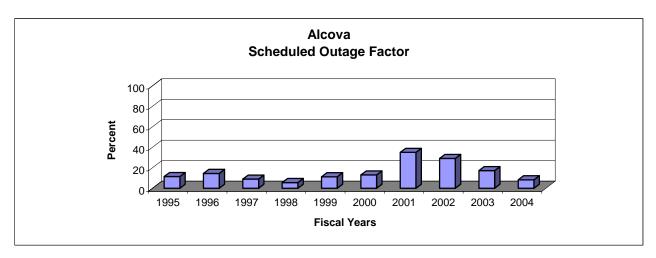
FY-2001 - Extended outage on Unit 2 for rewind and overhaul.

FY-2002 - Extended outage on Unit 1 for rewind and overhaul.

Benchmark 6 Plant Forced Outage Factor



### Benchmark 7 Plant Scheduled Outage Factor



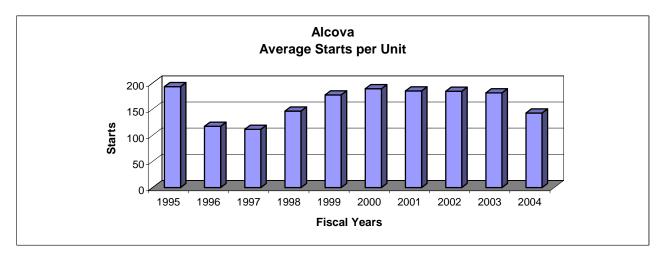
FY-1996 - Units 1 and 2 transformers replaced

FY-2001 - Extended outage on Unit 2 for rewind and overhaul.

FY-2002 - Extended outage on Unit 1 for rewind and overhaul.

FY-2003 - Unit 2 scheduled outage extended to rebuild governor after the annual inspection.

#### **Unit Starts**



Benchmark Data Comparison						
Fiscal Year 2004	Alcova Powerplant	Reclamation Average 30-100 MW Group	Total Reclamation Average	Industry Average	Best Performers	
Wholesale Firm Rate (Mills/kWh)	21.7?	Not Applicable	*21.06	Not Applicable	Not Applicable	
Production Costs as Percentage of Wholesale Firm Rate	1.94%	Not Applicable	13.5 <mark>?</mark> %	Not Applicable	Not Applicable	
O&M Costs (\$/MWh)	10.16	7.90	2.77	48.48	1.23	
O&M Costs (\$/MW)	16,926.95	19,931.46	7,316.97	26,917.84	2,951.22	
O&M Equivalent Work Year (Staffing per MW)	0.10	0.11	0.04	Not Available	0.00 <del>00</del>	
Availability Factor (%)	91.72	88.1?	86.9 <mark>?</mark>	**89.2 <mark>?</mark>	99.97	
Forced Outage Factor (%)	0.08	0.3?	0.7?	**1.9 <mark>?</mark>	0.00	
Scheduled Outage Factor (%)	8.21	11.5 <mark>?</mark>	12.4 <mark>?</mark>	**8.9 <mark>?</mark>	0.02	

<sup>\*</sup>Weighted by Net Generation \*\*2003 NERC Average

Alcova Powerplant 30-100 MW