

## Shasta Powerplant Central Valley Project

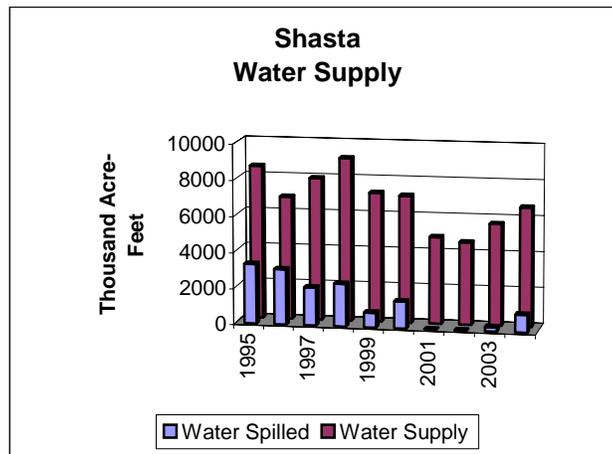
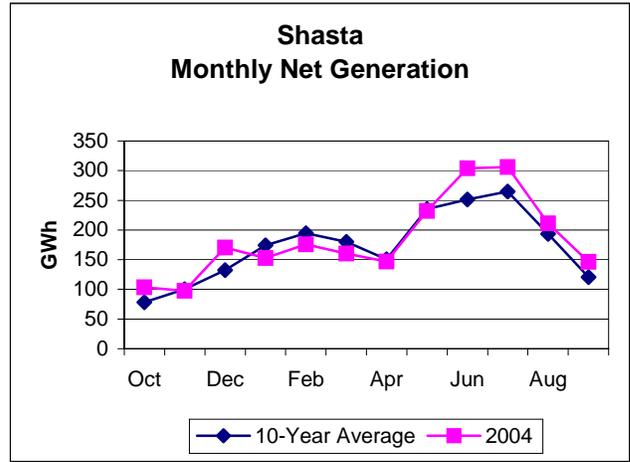
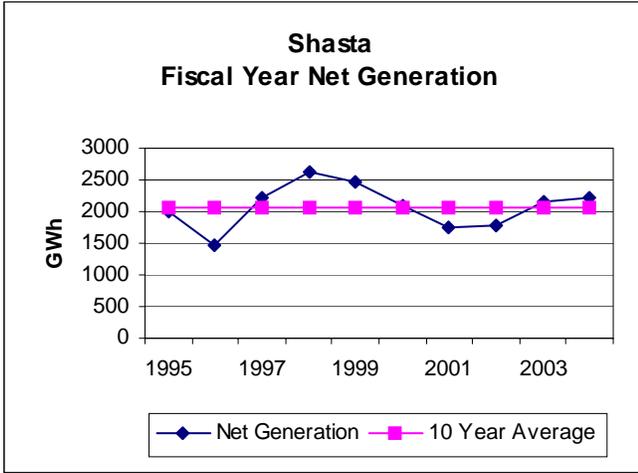
### Ancillary Services

<b>Shasta Ancillary Services</b>	
Spinning Reserve	Yes
Non-Spinning Reserve	Yes
Replacement Reserve	Yes
Regulation/Load Following	Yes
Black Start	Yes
Voltage Support	Yes

### Generators

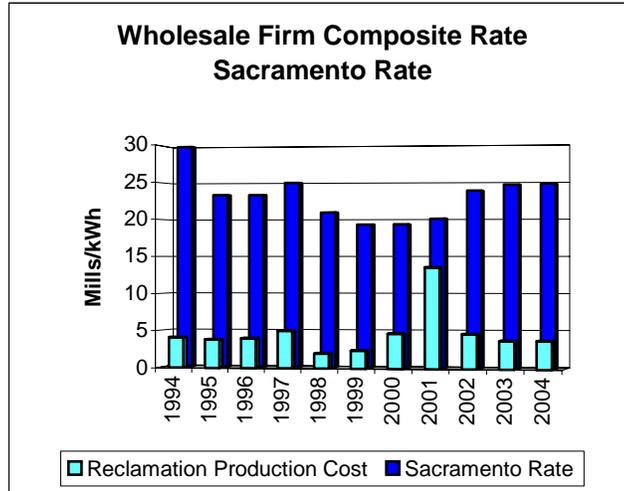
<b>Shasta Generators</b>			
Existing Number and Capacity			
Unit#	Original Capacity (kW)	Capacity Increased (kW)	Present Capacity (kW)
1	75,000	50,000	125,000
2	75,000	50,000	125,000
3	75,000	50,000	125,000
4	75,000	67,000	142,000
5	75,000	67,000	142,000
S1	2,000	0	2,000
S2	2,000	0	2,000
<b>7 Units</b>	<b>379,000</b>	<b>264,000</b>	<b>663,000</b>

**Generation**

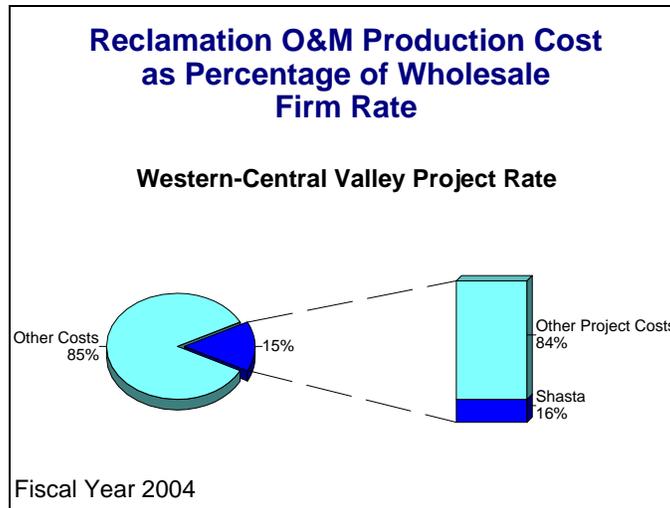


**Prime Laboratory Benchmarks**

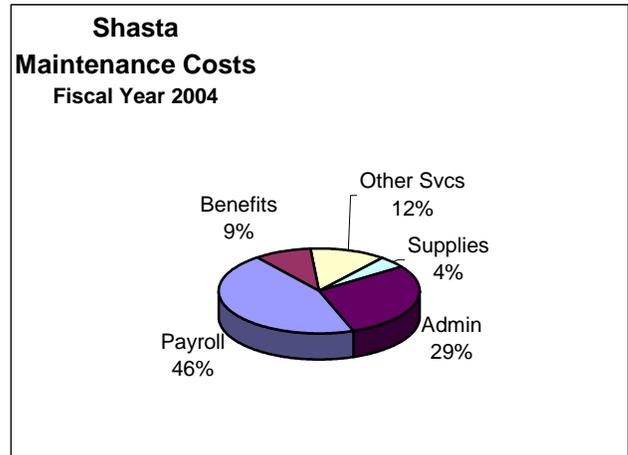
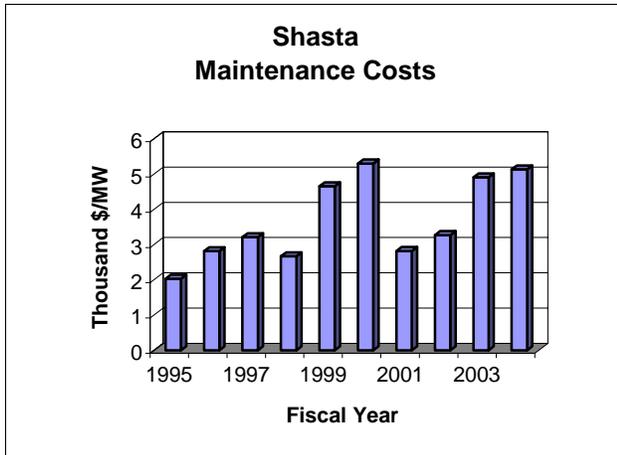
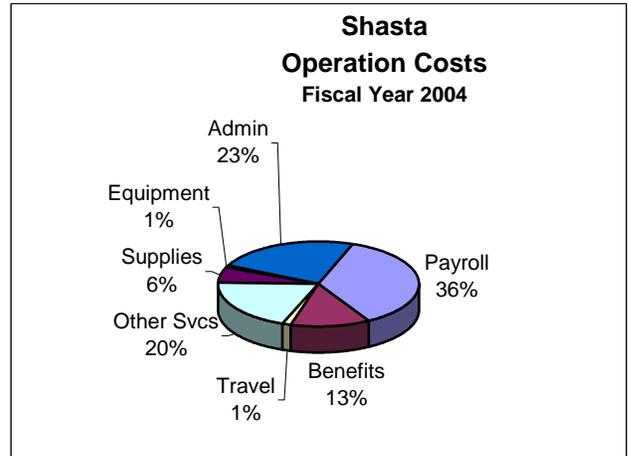
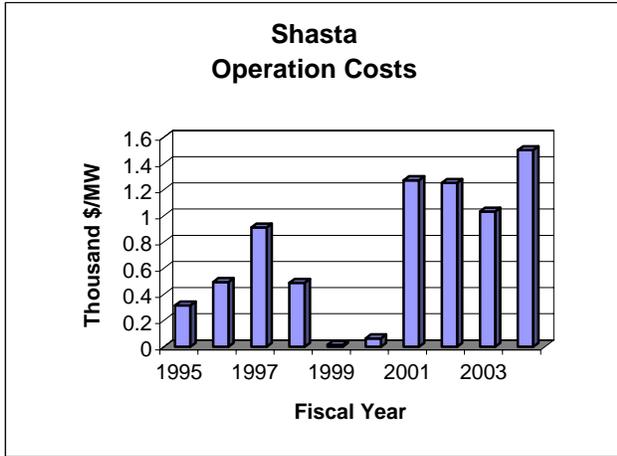
**Benchmark 1  
Wholesale Firm Rate**



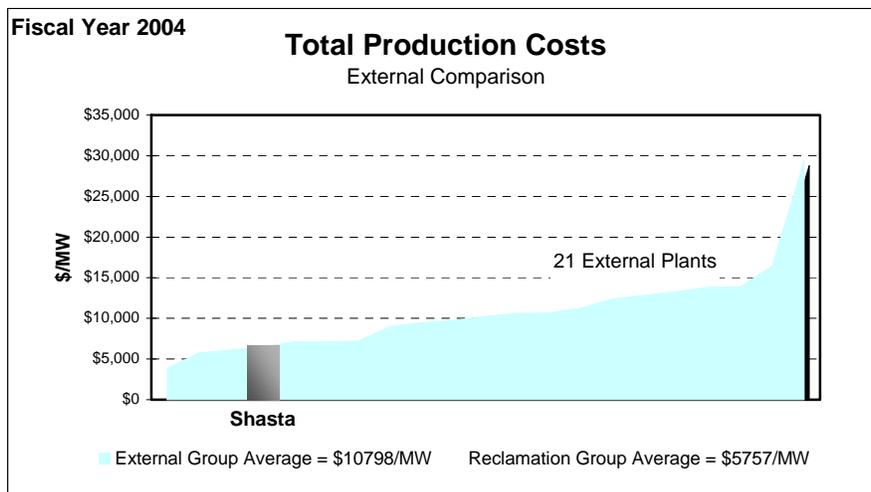
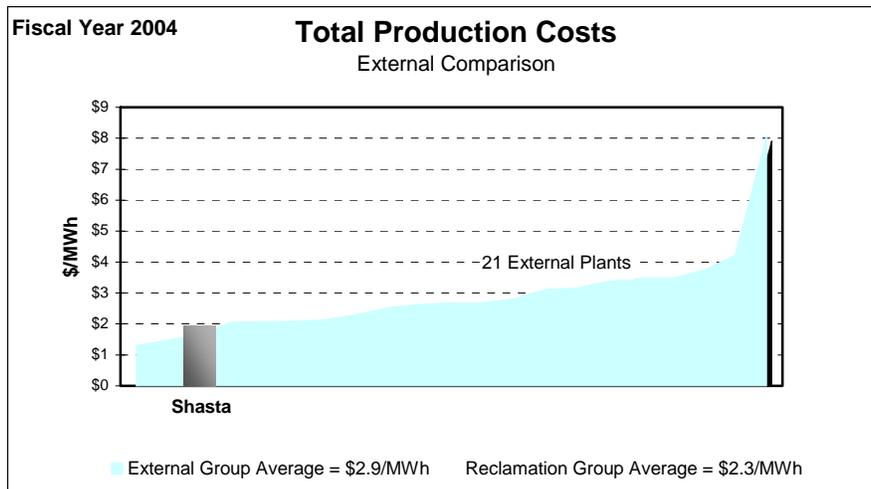
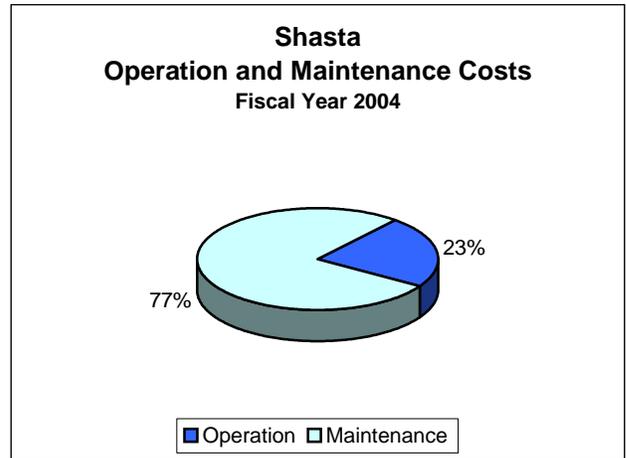
**Benchmark 2  
Reclamation's Production Cost as Percentage of Wholesale Firm Rate**



Benchmark 3  
Production Cost

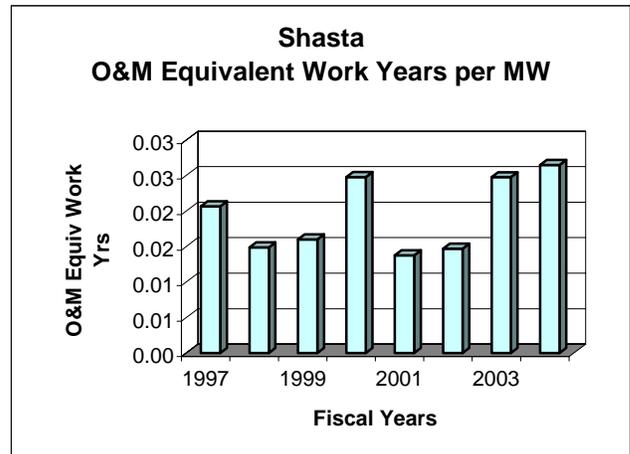
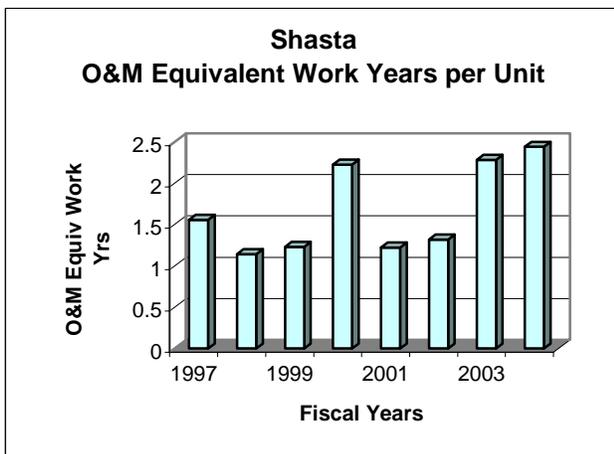
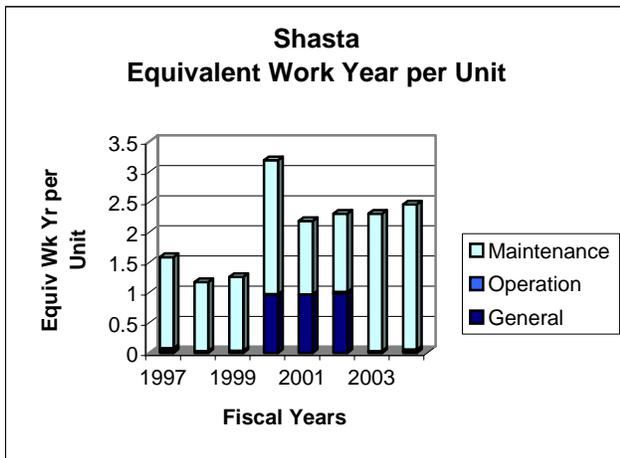


**Benchmark 3  
Production Cost**

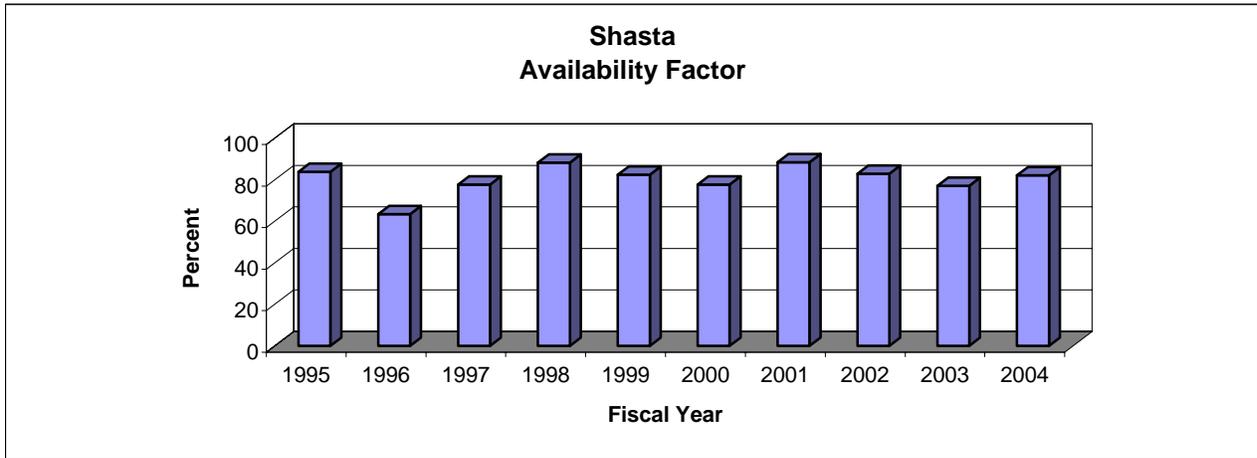


Benchmark 4  
Workforce Deployment

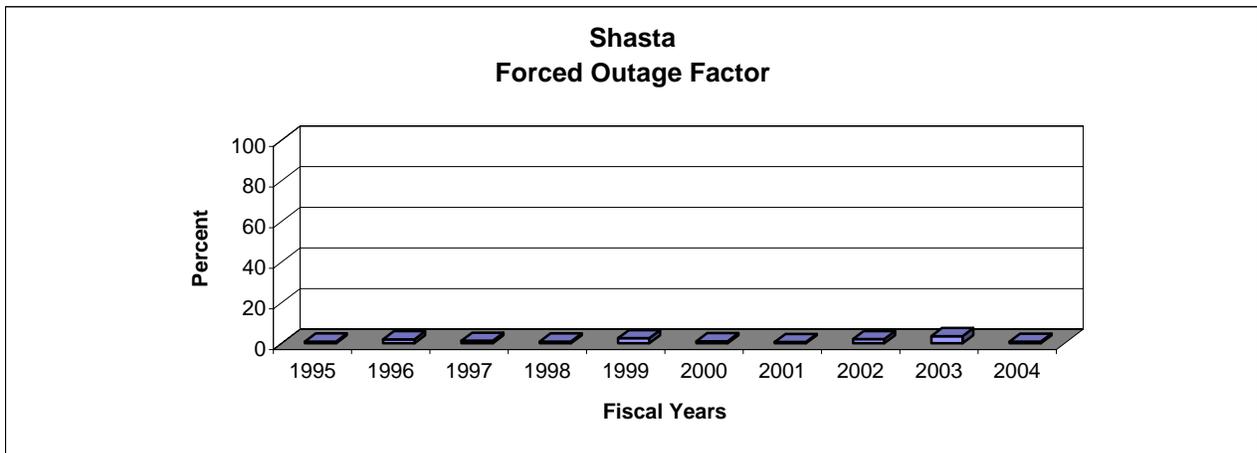
Shasta 2004 Equivalent Work Year Levels						
	Equiv Work Year Charged to Powerplant	Leave Additive	Denver and Washington Equiv Work Year Additive	Total Equiv Work Year Allocated to Powerplant	Total Equiv Work Year per Generating Unit	Total Equiv Work Year per Megawatt
General	0.00	0.00	0.12	0.12	0.02	0.00
Operation	0.23	0.03	0.00	0.26	0.04	0.00
Maintenance	15.07	1.77	0.00	16.84	2.41	0.03
Total Staffing	15.30	1.80	0.12	17.22	2.46	0.03



**Benchmark 5  
Availability Factor**



**Benchmark 6  
Forced Outage Factor**

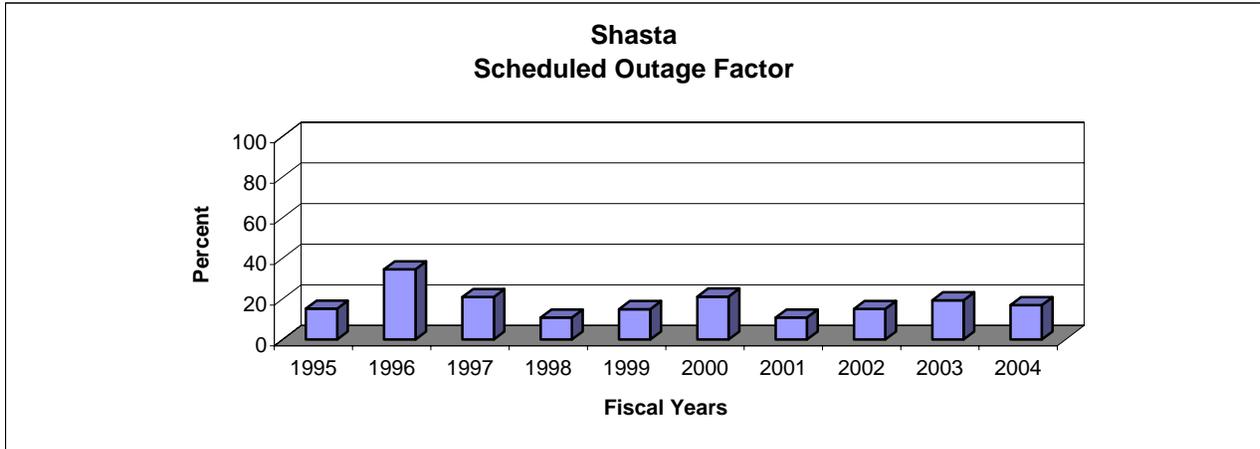


FY-94 – Unit 2 thrust bearing had water in it

FY-99 – Unit 5 rewind - generator failed due to faulty contractor installation

FY-03 – Unit 5 had in-service failure of a generator field winding that resulted in an outage from November 2002 – January 2003. The failure was due to faulty contract work during the rewind and was repaired under warranty by the contractor.

**Benchmark 7  
Scheduled Outage Factor**



FY-96 and FY-97 - Units out for temperature control device

FY-97 and FY-98 - Unit 4 rewind

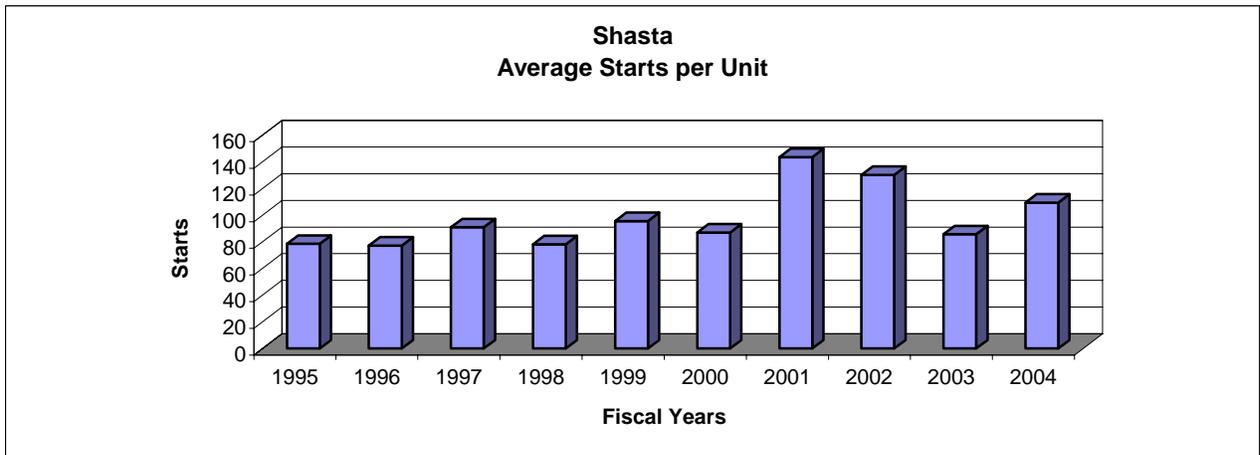
FY-99 - Unit 5 rewind

FY-99 to FY02 - Transformer re-gasketing

FY-00 - Unit 3 rewind

FY-03 - Unit 4 turbine runner replacement

**Starts**



<b>Benchmark Data Comparison</b>					
<b>Fiscal Year 2004</b>	<b>Shasta Powerplant</b>	<b>Reclamation Average 500+ MW Group</b>	<b>Total Reclamation Average</b>	<b>Industry Average</b>	<b>Best Performers</b>
<b>Wholesale Firm Rate Mills/kWh</b>	24.6	Not Applicable	*21.06	Not Available	Not Available
<b>Production Cost as Percentage of Wholesale Firm Rate</b>	2.4%	Not Applicable	13.5%	Not Applicable	Not Applicable
<b>O&amp;M Cost \$/MWh</b>	1.94	1.74	2.77	2.91	1.23
<b>O&amp;M Costs \$/MW</b>	6,635.23	4,684.69	7,316.97	10,798.44	2,951.22
<b>O&amp;M Equip Work Year per MW</b>	0.03	0.02	0.04	Not Available	0.000
<b>Availability Factor</b>	82.3	86.13	86.9	**89.2	99.97
<b>Forced Outage Factor</b>	0.8	0.75	0.7	**1.9	0.00
<b>Scheduled Outage Factor</b>	16.9	13.12	12.4	**8.9	0.02

\*Weighted by Net Generation

Forced Outage Factor increased due to warranty repairs on unit 4, and Scheduled Outage Factor up due to unit 4 turbine replacement.