Ancillary Services

Trinity
Ancillary Services

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

Generators

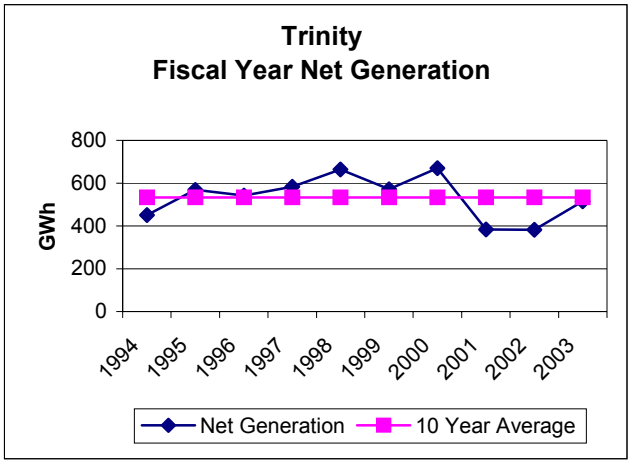
Trinity Generators

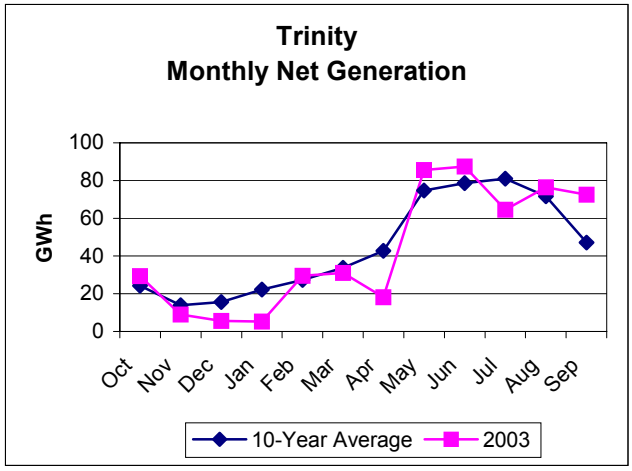
Existing Number and Capacity

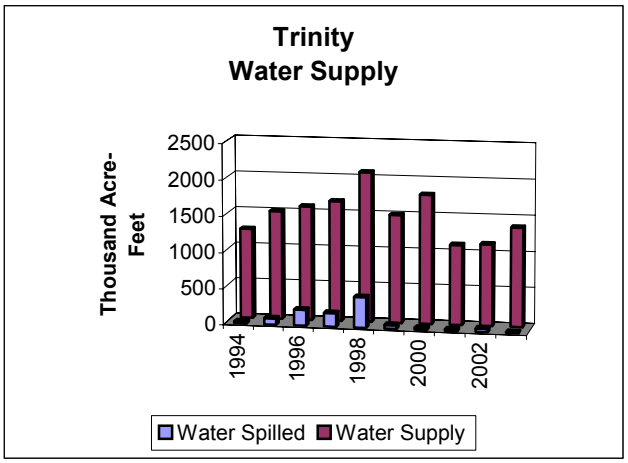
Unit #	Original Capacity (kW)	Capacity Increased (kW)	Present Capacity (kW)
1	50,000	20,000	70,000
2	50,000	20,000	70,000
2 Units	100,000	40,000	140,000

The maximum operational capacity is
restricted by transformers to 130,000 kW

Generation

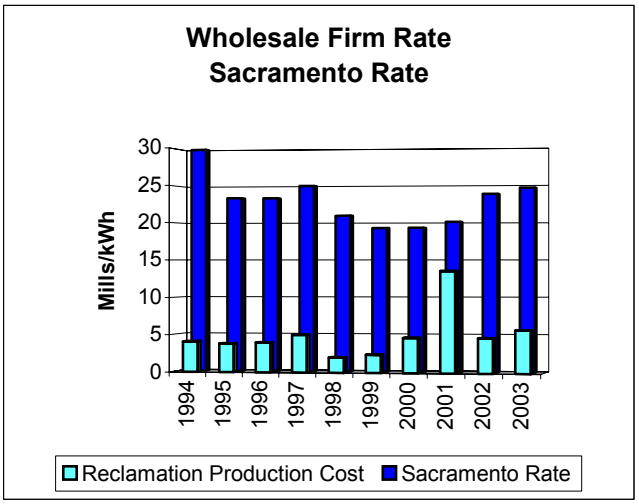

Trinity
Fiscal Year Net Generation
GWh
800
600
400
200
0
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
Net Generation
10 Year Average


Trinity
Monthly Net Generation
GWh
100
80
60
40
20
0
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
10-Year Average
2003

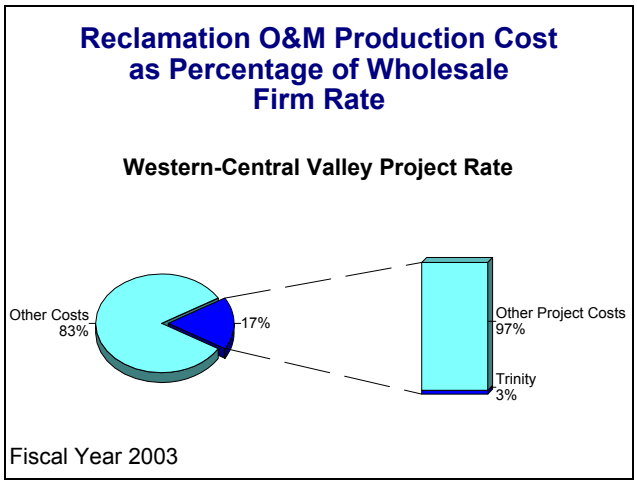

Trinity
Water Supply
Thousand Acre-Feet
2500
2000
1500
1000
500
0
1994
1996
1998
2000
2002
Water Spilled
Water Supply

Prime Laboratory Benchmarks

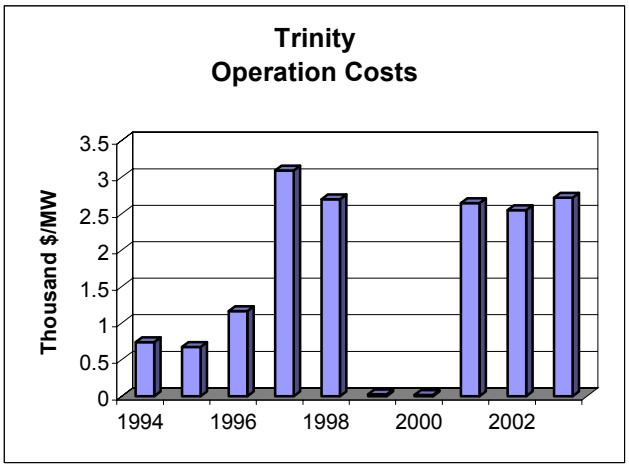
Benchmark 1
Wholesale Firm Rate

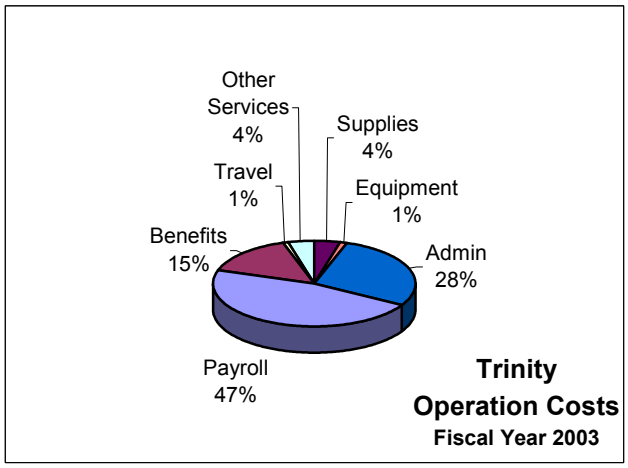


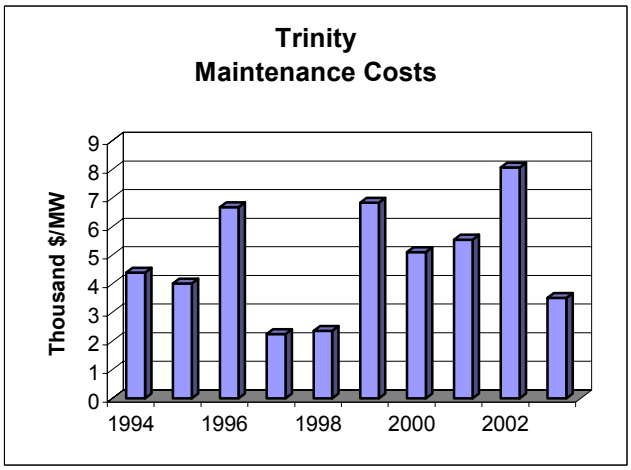
Benchmark 2
Reclamation's Production Cost as Percentage of Wholesale Firm Rate

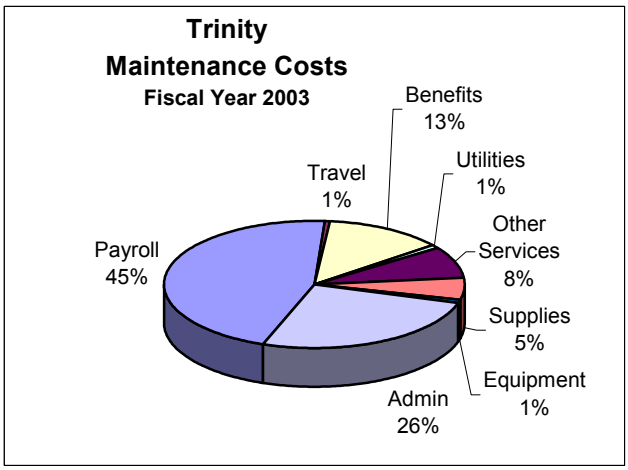


Benchmark 3
Production Cost

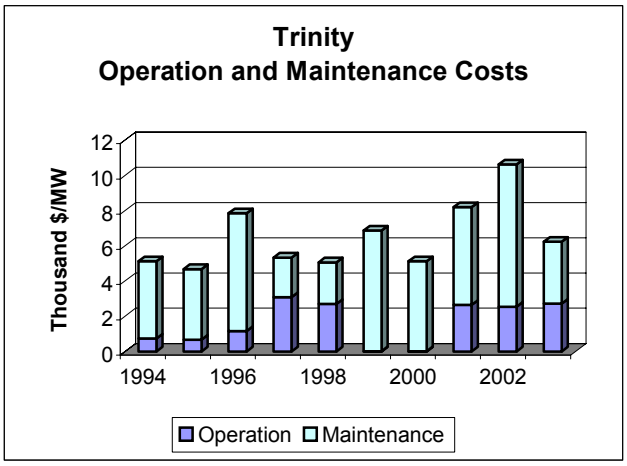


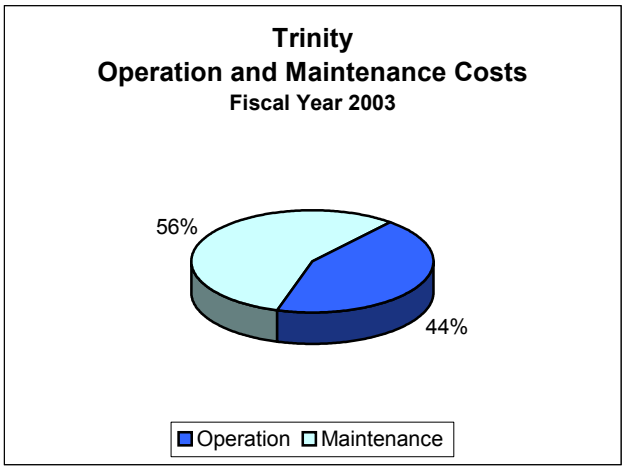


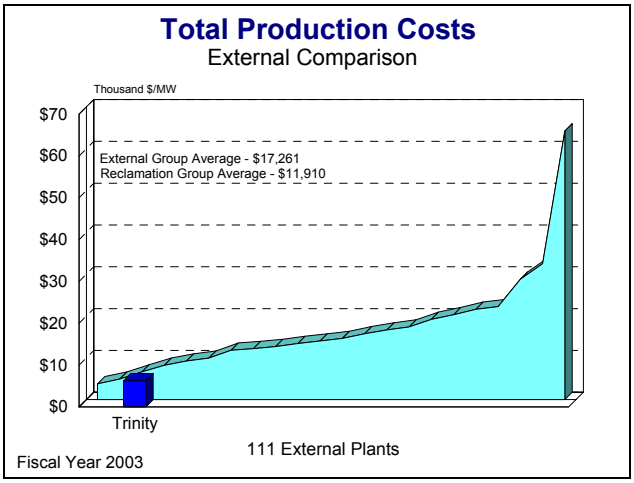


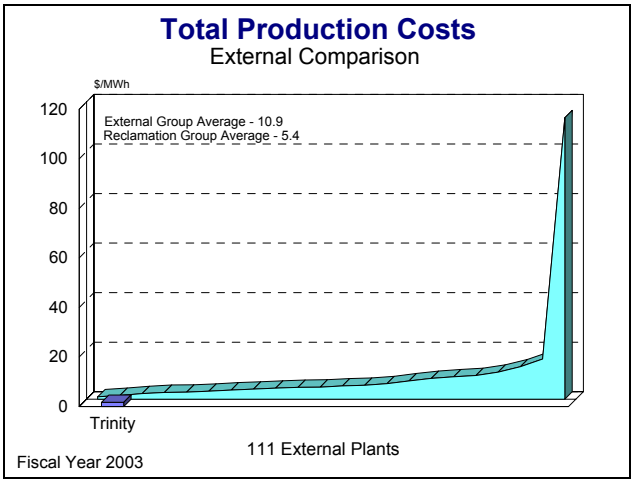


Benchmark 3
Production Cost





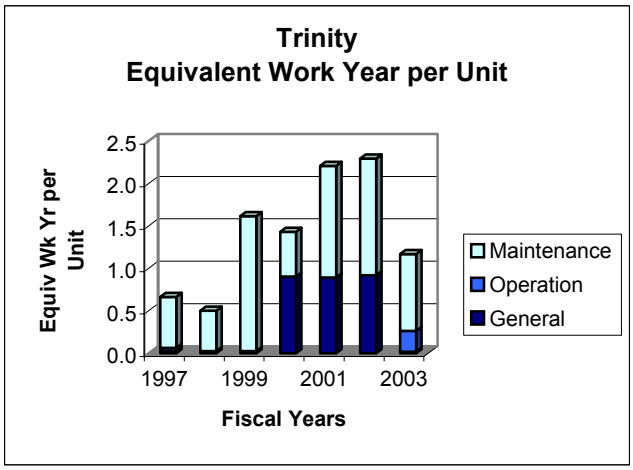


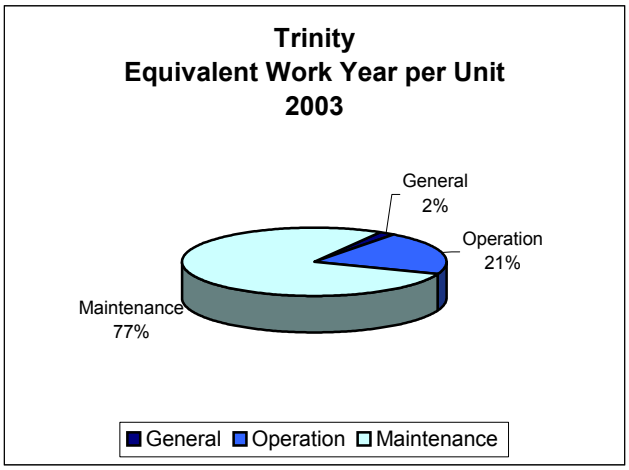


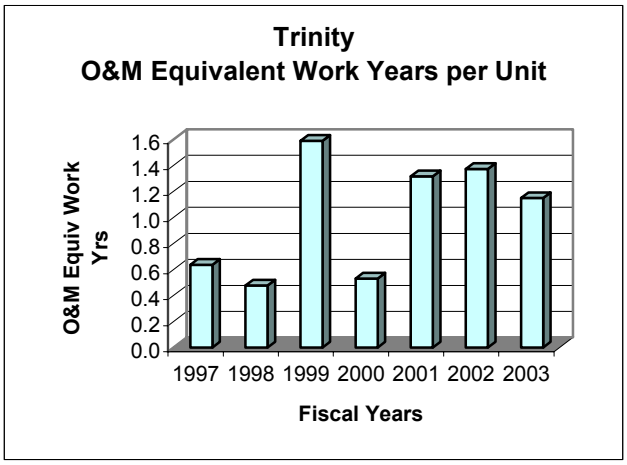
Benchmark 4
Workforce Deployment

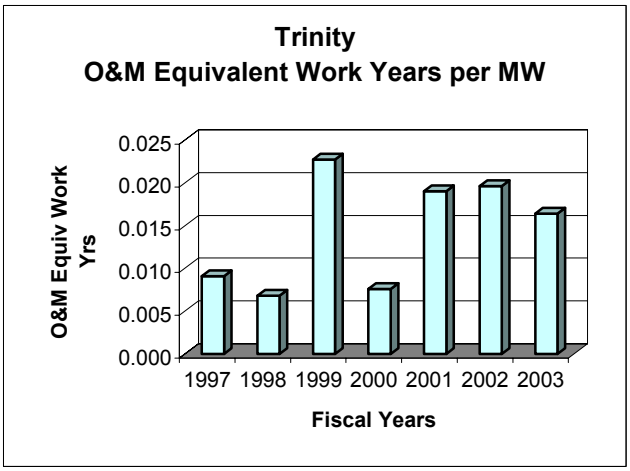
Trinity
2003 Equivalent
Work Year Levels

	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	0	0.04	0.04	0.02	0.00
Operation	0.43	0.05	0	0.48	0.24	0.003
Maintenance	1.62	0.19	0	1.81	0.91	0.01
Total Staffing	2.06	0.24	0.04	2.34	1.17	0.02

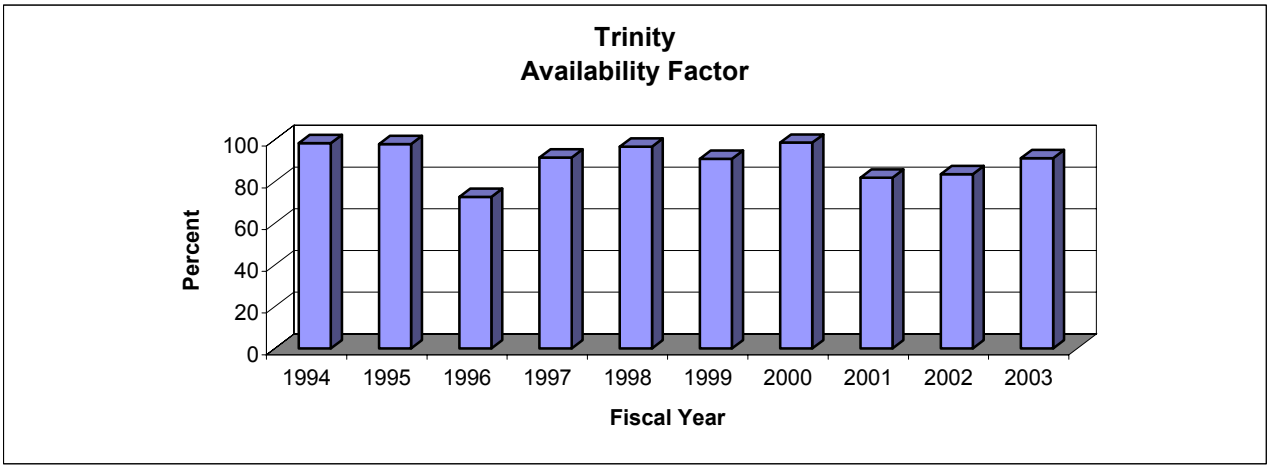




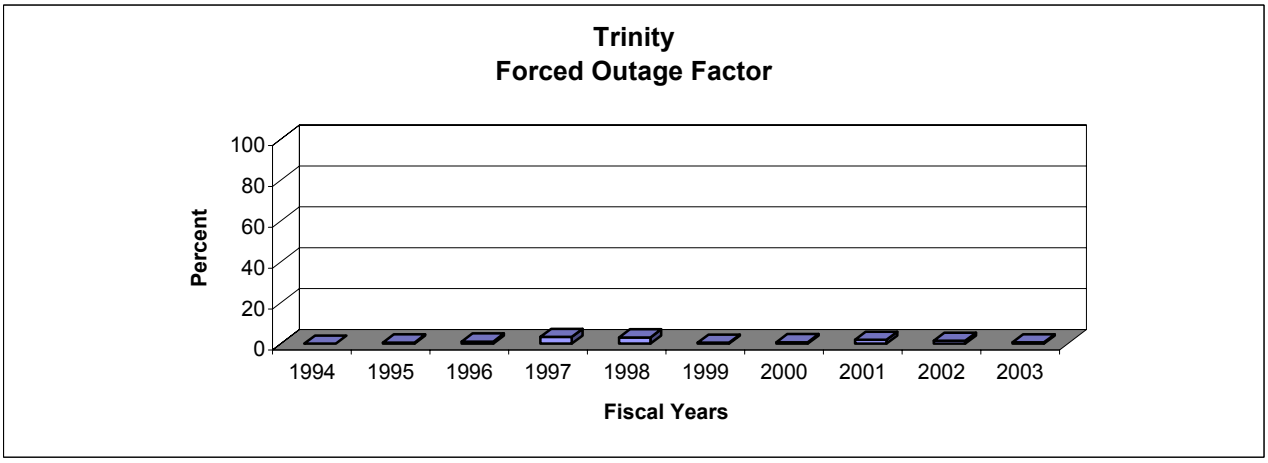




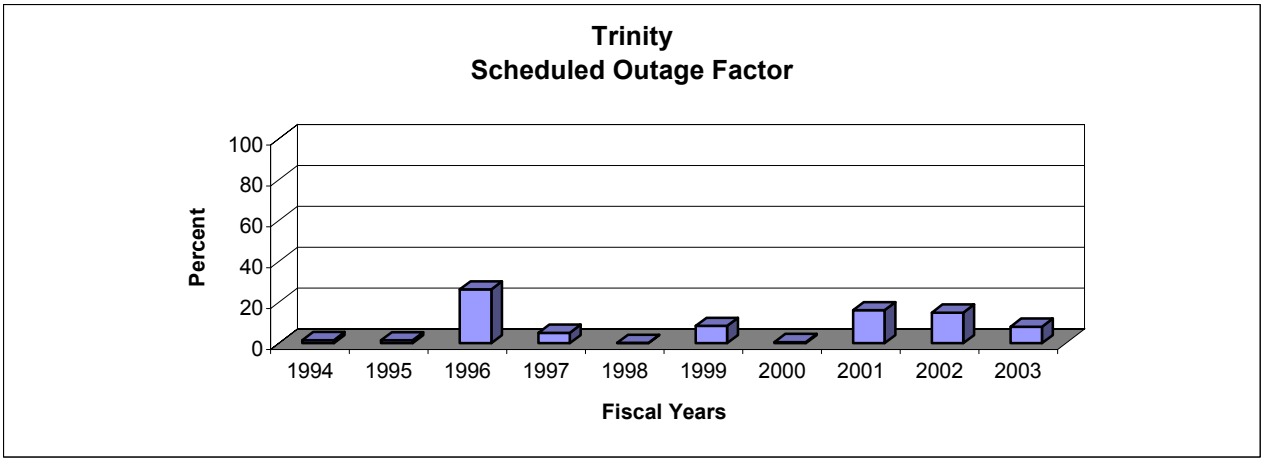
Benchmark 5
Availability Factor



Benchmark 6
Forced Outage Factor

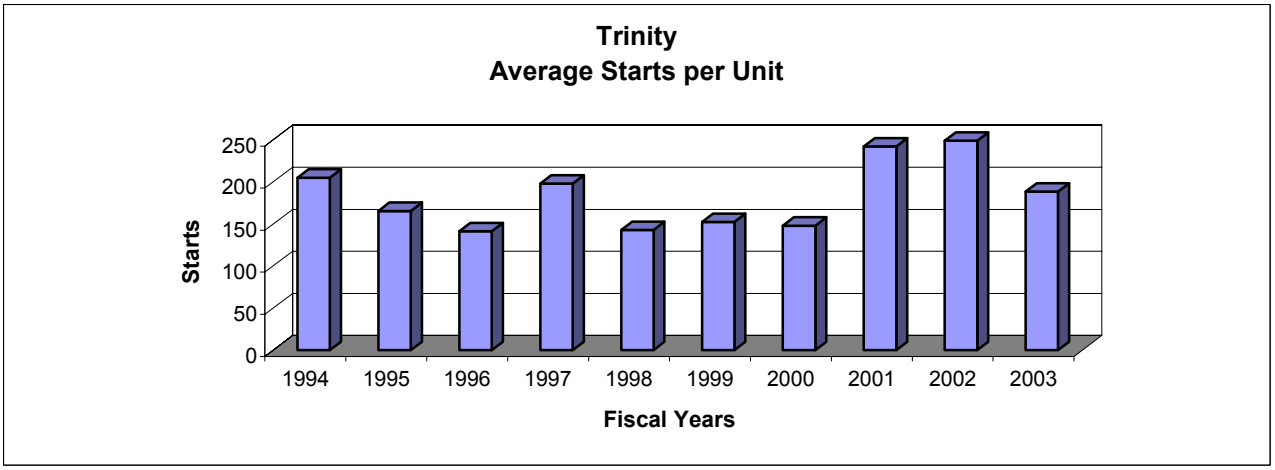


Benchmark 7
Scheduled Outage Factor



FY-96 – Extended maintenance
FY-01 – Extensive welding for cavitation repair
FY-02 – Replacement of all main unit circuit breakers

Starts



Benchmark Data Comparison

Fiscal Year 2003	Trinity Powerplant	Reclamation Average 100-500 MW Group	Total Reclamation Average	Industry Average	Best Performers
Wholesale Firm Rate Mills/kWh	24.6	Not Applicable	*23.1	Not Available	Not Available
Production Cost as Percentage of Wholesale Firm Rate	0.5%	Not Applicable	12.0%	Not Applicable	Not Applicable
O&M Cost $/MWh	1.7	4.5	2.7	10.9	1.1
O&M Costs $/MW	6,233	10,924	7,315	17,261	3,108
O&M Equiv Work Year per MW	0.02	0.1	0.04	Not Available	0.01
Availability Factor	91.3	87.6	83.6	**88.9	99.1
Forced Outage Factor	0.6	0.8	1.5	**2.4	0.0
Scheduled Outage Factor	8.1	11.7	14.9	**8.7	0.0

*Weighted by Net Generation
**2002 NERC Average