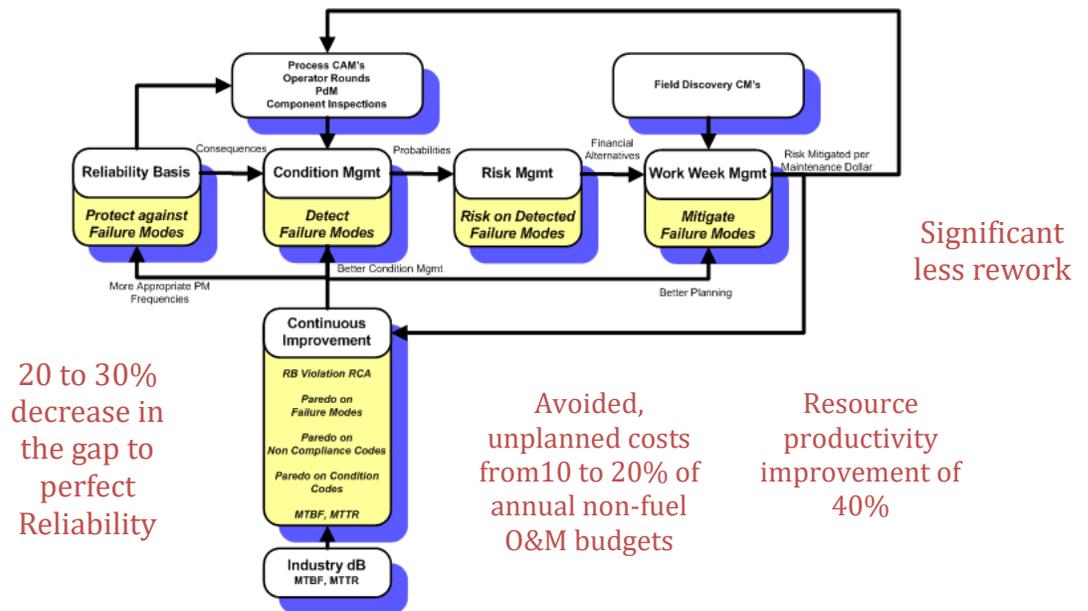


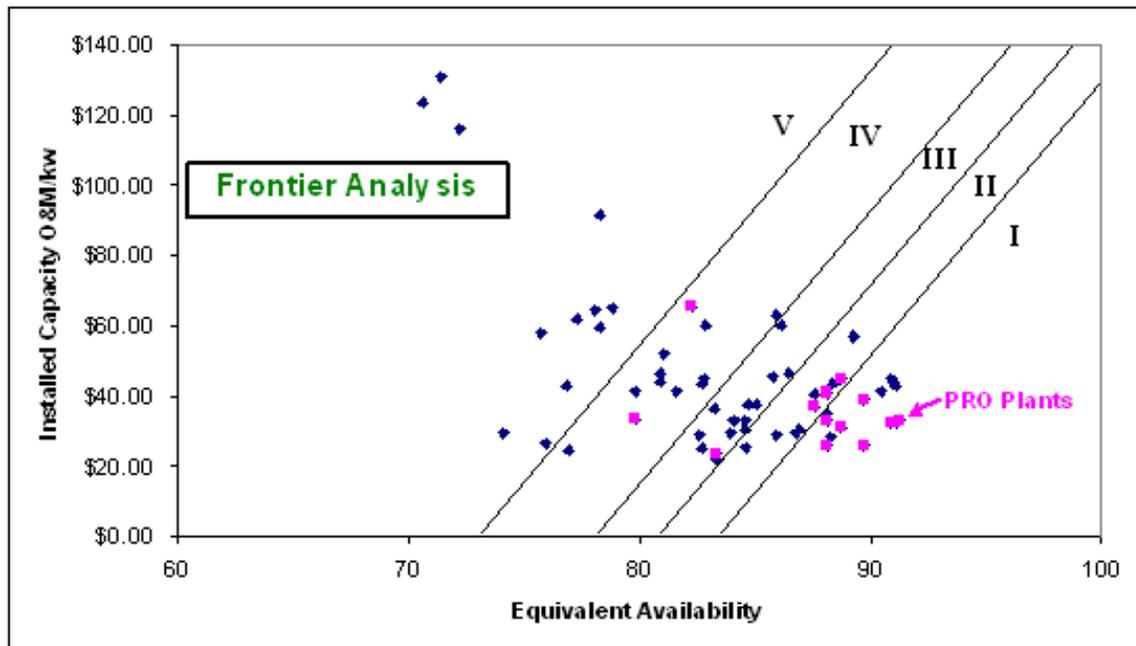
Value Proposition

PRO Processes

The Reliability Basis is the foundation process of the integrated Plant Reliability Optimization (PRO) processes. These processes have been adopted and applied across the fleets major utilities across the country. The return on the investment into these processes has varied across these fleets, all were positive, but varied on the level of leadership sponsorship that was given.



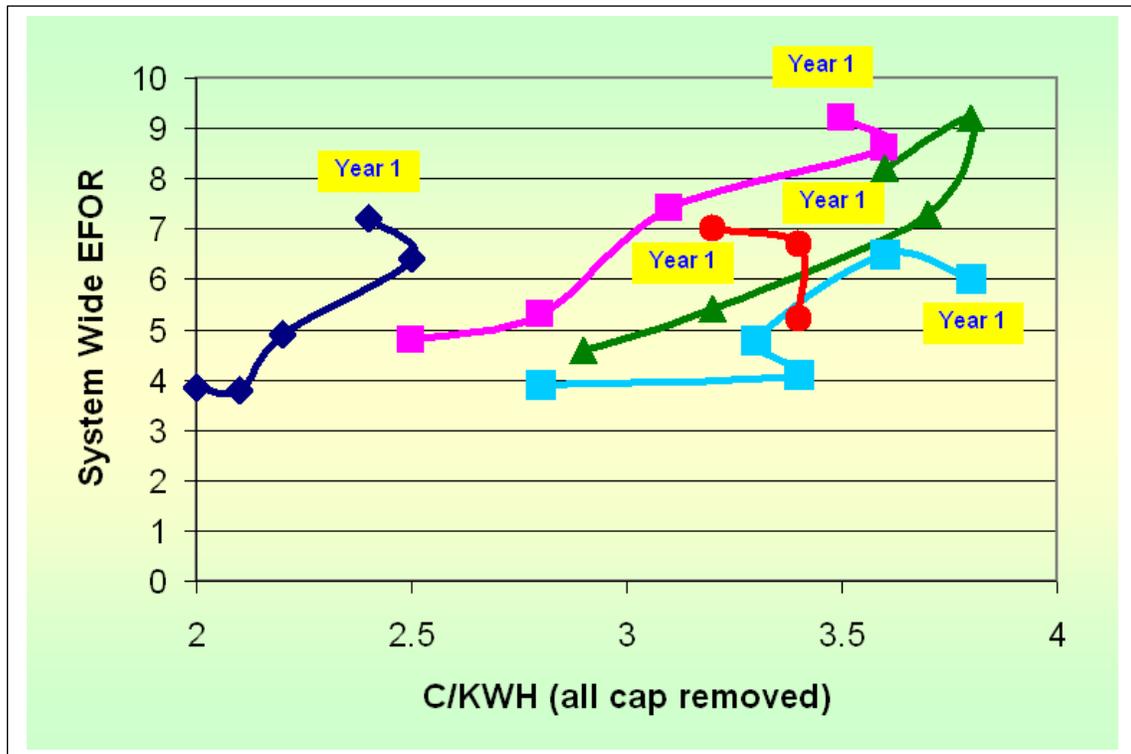
The next figure is an Industry Assessment slide on fossil power plants of approximately 500 MWe. Those plants using the PRO processes and having built a strong reliability basis dominate the top quintile of plant performance



These top quintile plants have certain attributes that drive excellence in performance. These are:

- Recently re-engineered Reliability Basis
- Strong Condition Management Process with System Owners on High Risk Critical Equipment. Integrated Boiler Program
- Critical Equipment has life cycle management with active budgeting
- Schedule out 4 to 13 weeks ahead on routine maintenance
- Strong, disciplined outage management process
- Evident, strong, disciplined plant daily, weekly, and monthly rhythm
- Actively measure PM Compliance, Schedule Compliance, Sponsored Work, among other key performance indicators

Taking a fleet perspective for five of these companies running fossil fleets, it took four to five years to achieve such excellence however they were receiving benefit right away.



CEO of one utility attributed the success of his fossil fleet (10 plants) to the PRO processes, with:

- 30% improvement in EFOR
- 7% increase in Equivalent Availability
- 25% cost reduction in O&M

Senior Production Officer of another generating company (>18plants) publicly attributed their fleet success to PRO processes, with:

- <1% Peak Season EFOR
- 50% decrease in Annual EFOR
- 20% decrease in O&M costs

Vice President of yet another attributed their success in PRO led to a 12% rise in Equivalent Availability while reducing costs.

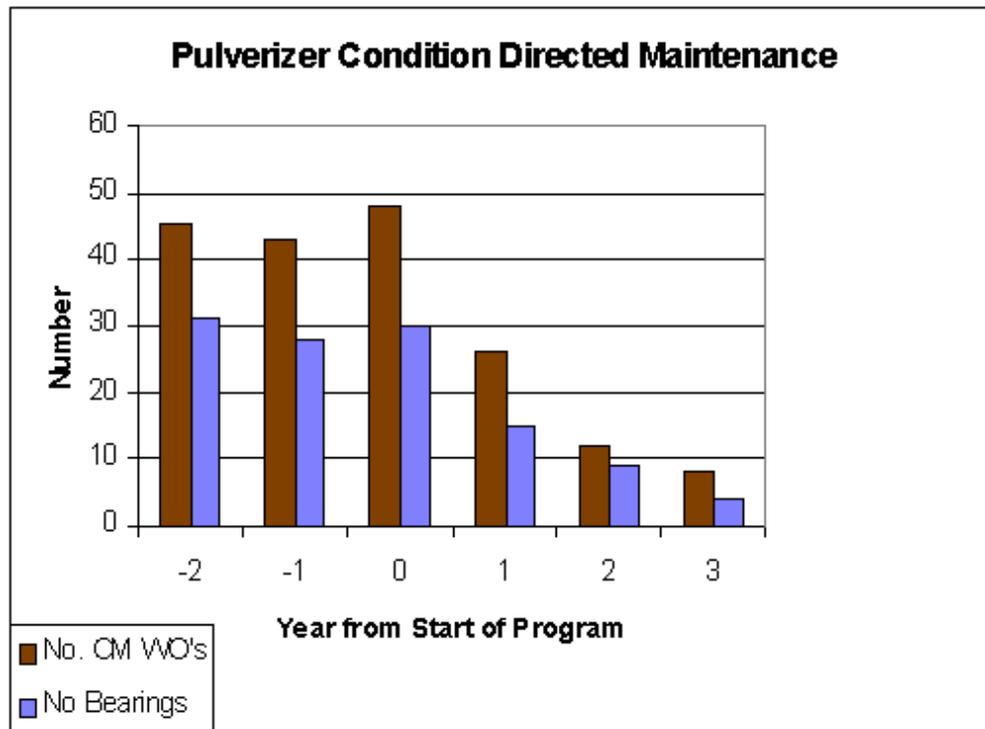
President of a nuclear utility also attributed the asset management processes to an increase of 10% across the nuclear fleet.

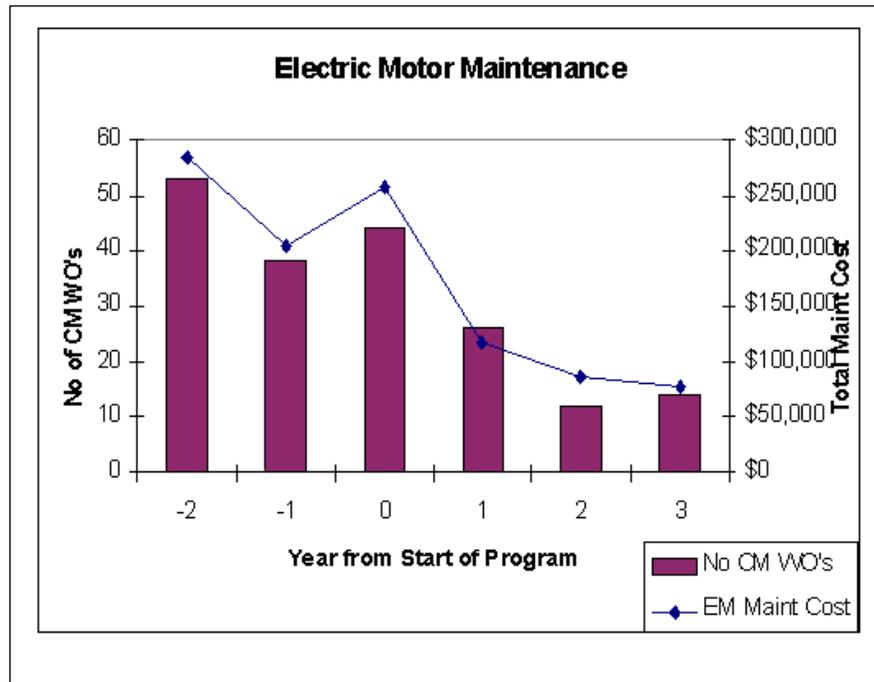
The Senior VP of Generation at a Midwest utility attributes his PRO processes for improving his fleet's EAF by 4% while reducing costs.

The Senior VP of Generation at an eastern utility also measured his PRO processes to deliver:

- Increase in EAF of 4%
- Reduction of CM's by 40%
- EFOR Reduction of 33%

One of the benefits of the PRO Processes and the Reliability Basis optimizing the Condition Management process is a reduction of failure event across the critical equipment. Below are some figures showing the decrease in failure events by a better care regime created by the Reliability Basis and carried out by good condition management.

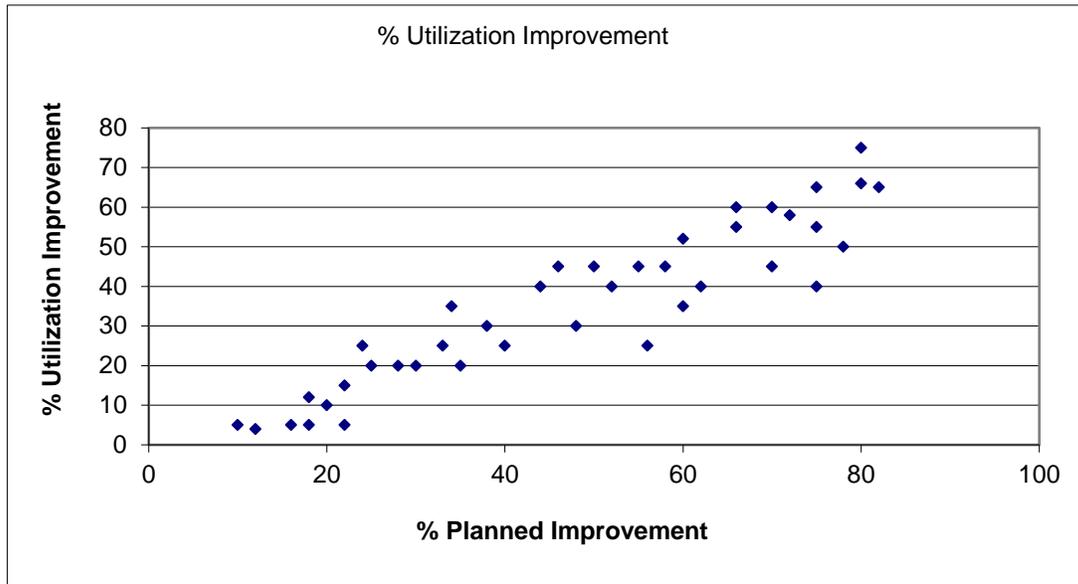




Another measure of success is the industry accepted “CBA” Cost Benefit Analysis associated with the Condition Based Maintenance Program. Below are savings calculated by the AEP CBM program over 3 years.

Plant	Analyses	O&M Impact	System Reliability Cost	Total Savings
<u>Plant 1</u>	51	\$2,429,167	\$11,951,013	\$14,380,180
<u>Plant 2</u>	175	\$4,975,683	\$18,443,315	\$23,418,998
<u>Plant 3</u>	4	\$56,800	\$800	\$57,600
<u>Plant 4</u>	7	-\$6,623	\$1,334,457	\$1,327,834
<u>Plant 5</u>	1	\$0	\$0	\$0
<u>Plant 6</u>	42	\$1,471,403	\$2,617,864	\$4,089,267
<u>Plant 7</u>	1	\$3,820	\$48,720	\$52,540
<u>Plant 8</u>	7	\$270,121	\$666,960	\$937,081
<u>Plant 9</u>	27	\$1,089,066	\$4,733,316	\$5,822,382
<u>Plant 10</u>	0	\$0	\$0	\$0
<u>Plant 11</u>	6	\$219,240	\$1,438,650	\$1,657,890
<u>Plant 12</u>	1	\$850	\$240,559	\$241,409
<u>Plant 13</u>	0	\$0	\$0	\$0
<u>Plant 14</u>	1	\$22,118	\$135,109	\$157,227
<u>Plant 15</u>	0	\$0	\$0	\$0
Grand Total	323	\$10,531,645	\$41,610,763	\$52,142,408

Another benefit of the integrated processes of PRO is the improvement of resource utilization. The figure below shows the results of a study performed to identify the utilization improvement associated with implementing disciplined Work Week Management. It shows that a 40% increase in planning effectiveness results in 30% more work accomplished.



The same Work Week Management processes assure high PM Compliance, Schedule Compliance, while a strong Reliability Basis drives down the emergent work by eliminating functional failures.

