

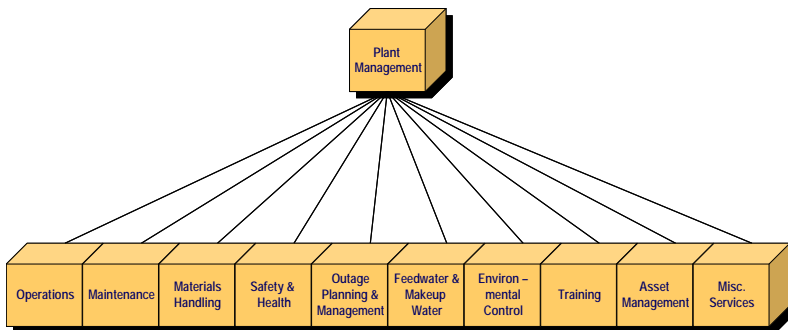
# UMS Group Fossil Generation Services

UMS Group's services to Fossil Generation Fleets and Plants are built on a deep foundational understanding of the technology and operational challenges involved, but provided within the context of business and regulatory realities. We recognize that it is often "what you don't know you don't know" that stands in the way of breakthrough performance improvements. And so we serve as a lens into the global experiences of other fossil generation fleet and plant owners who are wrestling with similar issues and priorities but applying widely varying perspectives. In recent years such issues have comprised aging infrastructure, turnover in the experienced plant workforce, tight limitations on capital and maintenance budgets and ever-increasing stakeholder reliability and availability standards. Our facilitation of the International Generation Benchmarking Consortium is one path for clients to access such global best practices across a wide range and evolving list of industry issues.



## Fleet and Plant Assessment Methodology

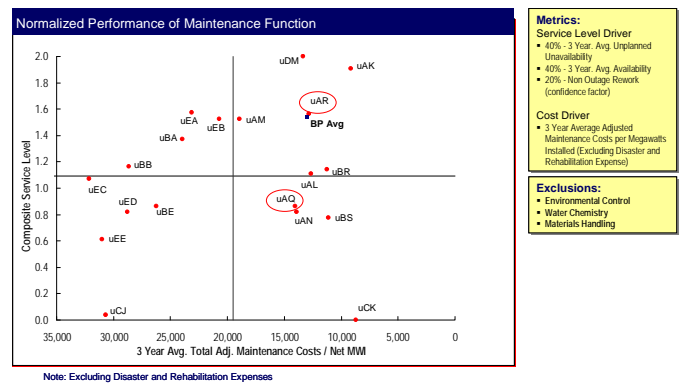
UMS Group views the operation and maintenance of a fossil plant as a portfolio of processes that are ultimately managed by the Plant Manager. Each process has a plant level process owner and can be measured in terms of: the unit cost of work performed, total workload and resultant service quality produced within that process. In our assessment of plant performance (and rolling up each component to the fleet level), we apply analytic and statistical methodologies to the recorded data readily available at the plant and fleet levels. Because we are focused on providing actionable information for the Plant Manager and his or her team, we normalize the cost and process data to remove the effects of variables that are not within his or her control.



The evaluation process is not purely analytical and data-driven. UMS Group has found that a singular focus on plant and fleet costs can over time result in declining performance from a deteriorating asset base. As a result, we use a two-dimensional Productivity/Cost and Service Level matrix to measure what is achieved for the cost over the course of the operating history (i.e., trends are an important element).

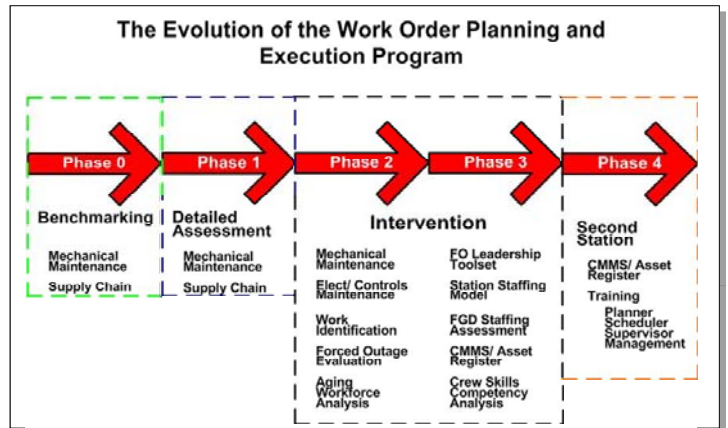
UMS Group knows that consistently high Service Levels (i.e. Availability, Forced Outage Rates and Capacity Factors) achieved at low operating and maintenance costs can only be achieved through the application of specific practices and processes and the encouragement of a performance culture - all reflective of leadership at the Plant and Fleet levels.

**Each UMS Group engagement therefore involves in-depth plant and process management practices discovery using a proven and proprietary structured and stage-gated interview methodology. As a result, we capture valid practices-to-performance linkages. These linkages are instructive, both in terms of identifying best global practices and for advising weaker performers on which of their practices are contributors and therefore candidates for improvement or transformation.**



## Process and Practices Interventions

At the end of the day, the purpose of assessing plant and fleet performance in a rigorous fashion (e.g., normalizing data to eliminate uncontrollable factors and correlating practices to performance) is to lay the foundation for Breakthrough Performance Improvement ©. UMS Group fields a team of senior consultants in our Fossil Generation engagements who have “been there and done that” in implementing change - often in difficult cultural, political and labor environments. As emerging value capture opportunities are identified in each client engagement, UMS prepares a recommended transformation roadmap focused on those processes and practices that are furthest from best global processes/practices and which offer the fastest and greatest return on invested change and improvement resources.



**UMS develops business driven recommendations and change roadmaps for Fossil Generation Plant and Fleet change and improvement. UMS Group Breakthrough Performance Improvement © has consistently resulted in short term ROI's of 10 to 1 or greater on client investments in UMS fees.**

Each specific intervention involves a number of planning and execution elements that are crystallized in Client-UMS collaborative sessions. These typically include:

- Broad communication of assessment findings at the plant level and fleet-wide
- Rigorous Business Case development for each change initiative
- Design of process/practices pilots including intelligent application to plants and organizations most receptive to change
- Identification of key metrics and results measurements
- A reporting and corrective action regimen
- Rigorous and honest management of the pilots, embedment of lessons learned and corrective measures
- Disciplined roll-out of the pilot-proven practices and processes to the rest of the fleet

## Sustainability

Many executives believe that for change to be sustainable it must be owned by change agents within the workforce and supported by leading front line supervisors. This implies grass roots dissatisfaction with the status quo at the plant level. UMS brings powerful tools and data which are designed to harness worker pride and ambition toward this end. In particular, our **BART\*** tool provides each plant with dynamic access to performance results and best practices to cultivate employee interest and support emerging grass roots ownership for performance results.

## Results Achieved

UMS Group's Fossil Generation Services have helped our clients capture value in terms of all relevant measures of performance. A commitment to excellence and accountability drives UMS Group as well as our clients to apply transformative processes with follow up measurement and reporting and a Continuous Improvement focused Operating System / Model.

	t = 0	t = 100 days	t = 1 year	t = 2 year	t = 3 year
Staffing	370	322	296	267	230
Total Capital & O&M	\$85M	\$68M	\$61M	\$50M	\$45M
Forced Outage Rate	7.1%	7.1%	4.5%	3.4%	< 3.4%
Equiv Availability Factor	82%	84%	85%	87%	89%
Maintenance WO Backlog	1,018	778	631	519	~100

Initiatives Complete in First 100 Days	Additional Initiatives Completed in the First Year
<ul style="list-style-type: none"> <li>• Process Driven Organization Structure Implemented</li> <li>• Best Practice Assessment Completed</li> <li>• Field Staffing Reduced To Best Practice</li> <li>• Best Practice Processes Installation Begun</li> <li>• Formal Cultural Change Program Initiated</li> <li>• Preferred Vendor Support Relationships Established</li> </ul>	<ul style="list-style-type: none"> <li>• Leadership Visioning &amp; Pledge, Redefinition Of Supervisory Role, Share The Gain/Share The Pain</li> <li>• Asset Management Organizational Structure Refined</li> <li>• All Major Processes Redesigned</li> <li>• 75% Of Labor Pool Cost Offset By External Revenues</li> <li>• Performance management system designed and implemented</li> </ul>

**\*To Learn More . . .**

If you would like more information on UMS Group's Fossil Generation Services or would like to discuss any ideas outlined in this overview, please contact:

Mike Scholtens, Senior Vice President  
[mscholtens@umsgroup.com](mailto:mscholtens@umsgroup.com)  
 +1 253-241-1705

UMS Group Inc.  
 5 Sylvan Way – Suite 120  
 Parsippany, NJ 07054  
 Phone +1 973-335-3555  
 Fax +1 973-335-7738  
 Email: [info@umsgroup.com](mailto:info@umsgroup.com)  
[www.umsgroup.com](http://www.umsgroup.com)

