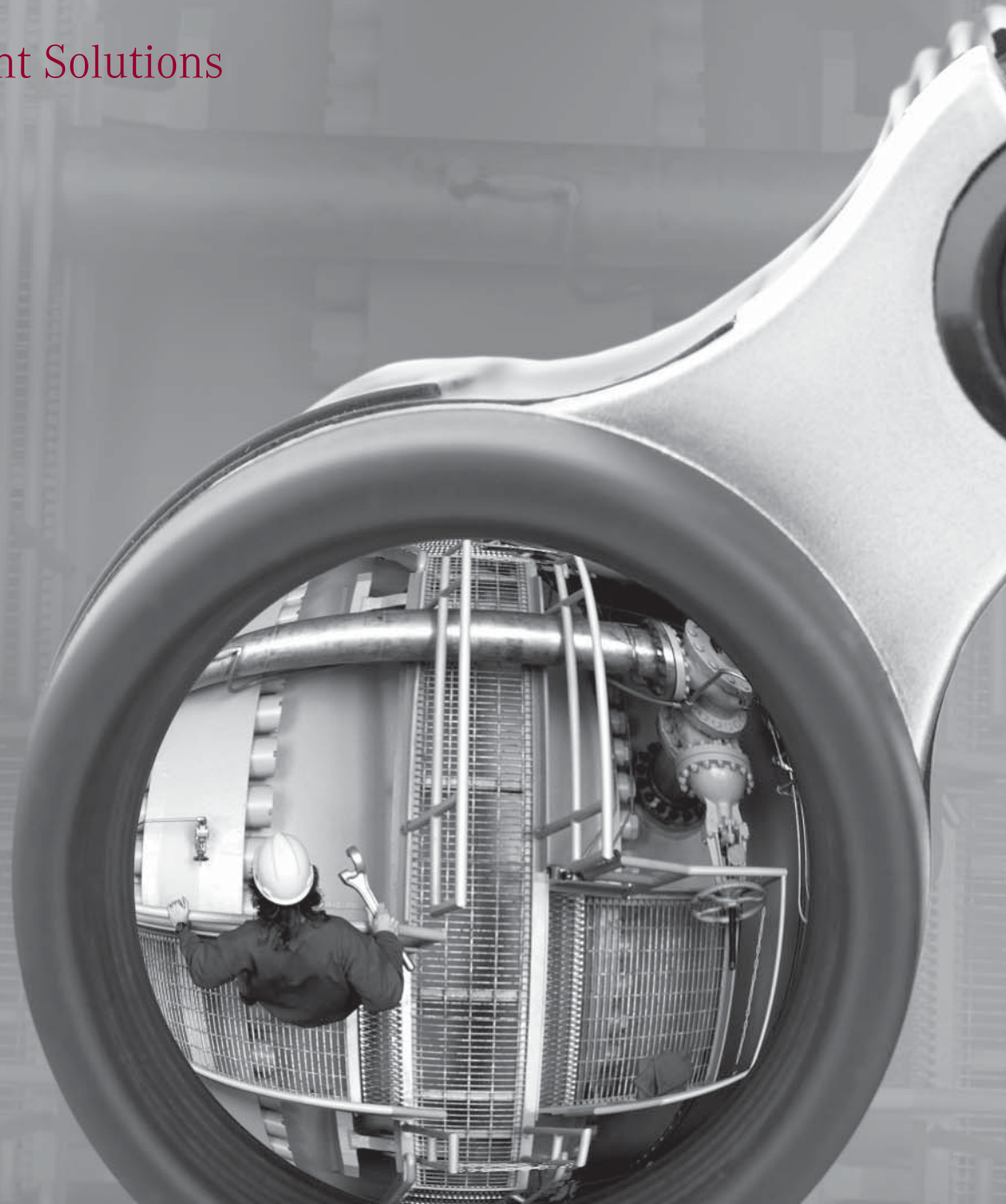


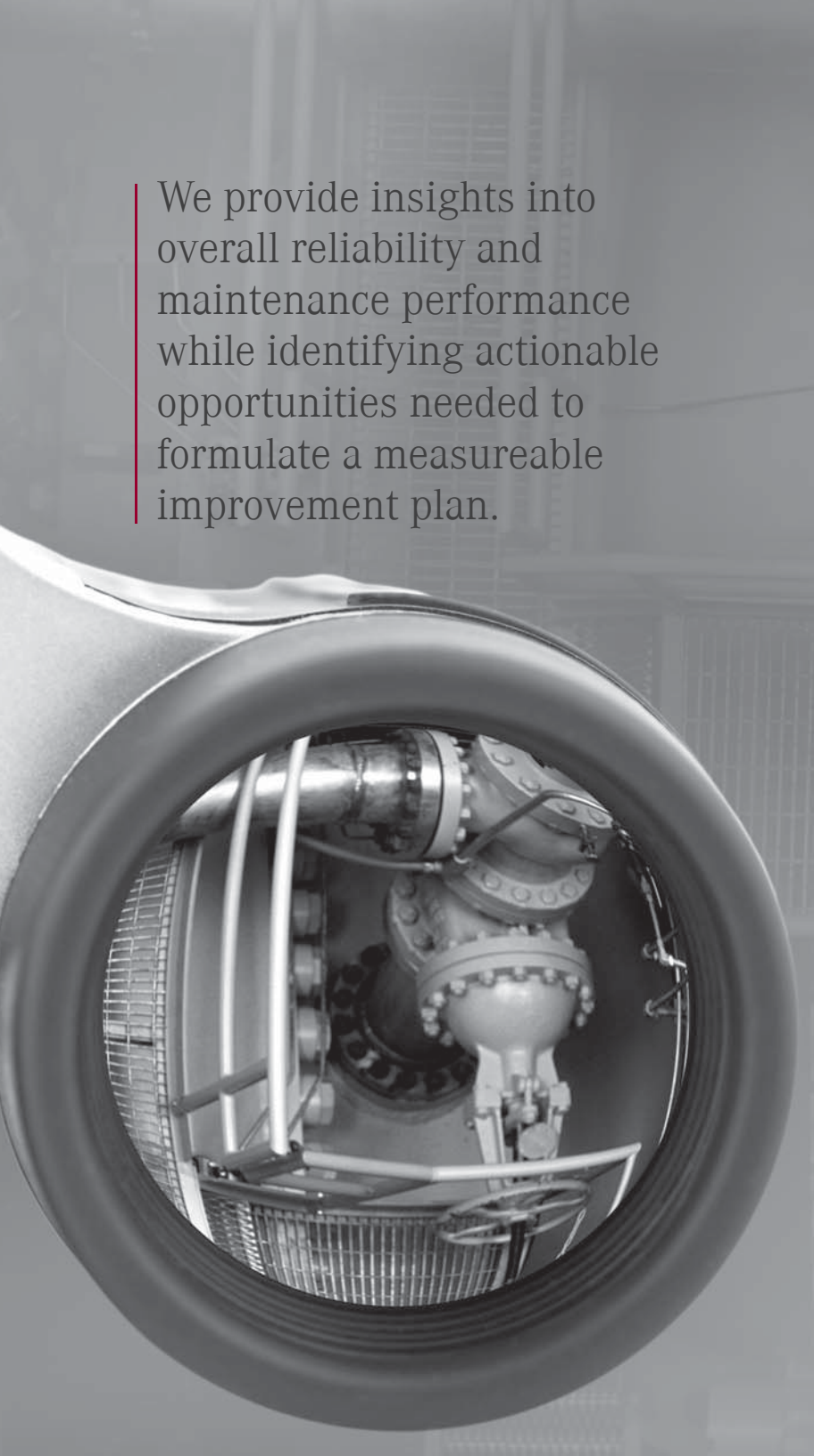
RAM Study

Performance Improvement Solutions



M³ — Measure. Manage. Maximize.®





We provide insights into overall reliability and maintenance performance while identifying actionable opportunities needed to formulate a measureable improvement plan.

RAM Study

Solomon developed the *International Study of Plant Reliability and Maintenance Effectiveness (RAM Study)* in partnership with industry leaders to identify and quantify areas for improved reliability and maintenance performance. This study provides the most comprehensive set of reliability and maintenance performance benchmarks in the industry. Over 1,000 plants with more than 8,000 process units have participated in the *RAM Study*.

Why Participate

If your plant mechanical availability is not well above 96%, you have valuable untapped margin. If your maintenance cost as a percent of plant replacement value is not well below 2%, you are spending too much. To enjoy the benefits of sustainable improvement, these two indicators must be in balance. The *RAM Study* benchmarks these and other key performance indicators (KPIs), and highlights where there is imbalance.

To ensure you are getting the most out of your assets, Solomon's reliability indices compare your performance to top-quartile performers and reveals where you can increase capacity without costly capital investment. To ensure you are getting the most out of your resources, Solomon's maintenance indices compare your performance to top-quartile performers to show where you can reduce costly expenses without sacrificing performance.

The average amount of margin gain through improved reliability combined with the maintenance cost reduction opportunities identified through Solomon's proprietary gap analysis is millions of dollars for the best performers. Imagine what the opportunities are for your plant!

The Differentiator

Solomon Indices and KPIs

Solomon offers a holistic approach to reliability and maintenance improvement. We know that huge margin benefits can be achieved by improving equipment reliability. We also know that significant cost benefits can be realized by optimizing maintenance spending. That is why our measures are designed to be incorporated into your internal metrics to help you set realistic improvement targets. We provide both site and process unit benchmarks and have added numerous SMRP¹ metrics and EFNMS² indicators along with our standard indices:

Maintenance Effectiveness Index

Mechanical Availability

Downtime - Scheduled and Unscheduled

Direct Routine Maintenance Labor

Indirect Routine Maintenance Labor

Routine Maintenance Material

Direct Turnaround Maintenance Labor

Indirect Turnaround Maintenance Labor

Turnaround Maintenance Material

Turnaround Frequency and Duration

Staffing Ratios

Labor Rates

Planning Rate

Schedule Compliance

¹ SMRP - Society for Maintenance and Reliability Professionals

² EFNMS - European Federation of National Maintenance Societies

The Process

Our goal is to simplify the data collection process while providing your team with an effective tool for improving plant performance:

- Step 1 We offer training seminars both in-person and web-based for personnel responsible for data collection and entry.
- Step 2 Your team collects the required data according to the definitions provided and enters it into your confidential web-based data input site with built-in data validation checks.
- Step 3 We thoroughly validate the data and confirm the accuracy of your input before calculating your results.
- Step 4 We provide your results and offer in-person presentations and workshops designed to ensure you maximize the benefits of participation.

The Result

RAM Study results provide your team with a wealth of insights regarding your plant's reliability and maintenance performance and points to likely causal factors. Total industry and peer group averages provide realistic targets for performance improvement and monitoring. Reliability can be maximized with a corresponding maintenance cost optimization, thereby providing the best return on your investment in physical plant assets.

Reliability and Maintenance Balance

Reliability
(Cannot cost cut your way to improved reliability)

Maintenance
(Maintenance costs are driven by reliability...or lack thereof)



Best performers achieve high reliability at low cost!
Poor performers have high cost with low reliability!

About Solomon Associates |

Having provided benchmarking and performance improvement consulting services since 1980, Solomon has become “the” Performance Improvement Company for the process industry. We help clients realize the full technical and financial potential of their existing assets and new capital projects.

As an experienced company that values confidentiality and long-term relationships, we strive to develop and hone the most creative and effective strategies to maximize client performance through our Comparative Performance Analyses™ (CPA™) studies and consulting services. Our team of experts has on average 25 years of industry expertise in numerous fields. At Solomon, our goal is to become your trusted advisor and improve each operation we analyze.

Today, companies in more than 70 countries rely on our benchmarking, performance improvement programs, and unique methodologies to keep their businesses competitive.

Contact

Al Poling

Project Manager, RAM Study

Phone: +1.972.739.1731

Fax: +1.972.233.1804

Email: Al.Poling@SolomonOnline.com

Two Galleria Tower
13455 Noel Road, Suite 1500
Dallas, TX 75240
www.SolomonOnline.com