

# Emerson's Powerhouse Energy Surveys – A First Step in Reducing Power and Utility Costs and Emissions

*Engineering survey of power and utility units, instrumentation and controls, and operational practices identifies opportunities to improve performance and lower costs*

Industrial power and utility operations are among the biggest users of fuel, and greatest generators of emissions. With escalating fuel costs and challenging environmental regulations, it is important that these facilities operate at their best. Efficiency must be maximized across the entire operation, waste and low-cost fuels need to be leveraged to the highest degree possible, and the electric tie-line must be managed, all while being responsive to changing demands for steam and other utilities.

Emerson Process Management is well established in the Industrial Energy arena, delivering an extensive range of advanced instrumentation, control, and automation technologies. Building on this knowledge and experience, Emerson now offers Powerhouse Energy Surveys to review existing operations and, based on the findings of the survey, make recommendations as to how power and utility performance could be improved.

"Our energy experts will survey a client's powerhouse, interview the site operating team, review current performance data, and test key operating units to determine where improvements can be made," said

Chip Rennie, Director of Global Industrial Energy, Emerson Process Management. "Then, using the current performance data and information that has been assembled, we will build a business case that shows how improvements can deliver better operation and financial return."

Surveys typically take about four days at the powerhouse site. The effort begins with a review of existing documentation and meetings with management and operations personnel. These discussions are used to understand the current operating state, the particular constraints and business situation in place, the existing instrumentation and controls status, and any ideas for potential improvement.

The site effort continues with Emerson energy experts completing walk-downs and field reviews of the power and utility processes. This effort is undertaken to review the condition of the mechanical equipment, instrumentation, and end control devices currently in place. The objective is to determine the suitability of the processes and their control devices for operating under highly automated and optimized control scenarios.

Special attention is given to the type and location of the process instruments in place and the condition of devices such as dampers, actuators and valves that

manipulate the processes. During the field review, a visual inspection of the processes while in operation helps provide an understanding of existing operating techniques.

Emerson also reviews current process data and uses it to compare present operation with potential future operation based on what is typically being achieved in the industry. This review takes into account any operating constraints that are inherent to the site. In some cases, unit testing is conducted with operations personnel to further identify constraints. For example, a boiler may be load-tested with a particular low-cost fuel to determine the maximum capability for its use.

From the field review and any testing results, Emerson prepares recommendations regarding equipment and operating methods. These may include relatively small items such as changing the location of existing instrumentation, installing of additional instrumentation, modifying valves, adjusting fuel feed equipment and air systems, or changing damper arrangement. In some cases more significant modifications are suggested such as piping changes, burner modifications, or air system upgrades.

By comparing the information collected from current power and utility operations to industry benchmarks and best practices, Emerson



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# Powerhouse Energy Surveys

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estimates the financial benefit that can potentially be captured from operating the processes in a more highly automated and optimized manner. This benefit is compared against the estimated cost for achieving improved operation through upgrading the instrumentation and control systems and completing any necessary process mechanical changes.

Upon completion of the survey, Emerson issues a report summarizing the information gathered, the recommendations, and the budgetary costs for any recommended improvement projects. The report lays out an optimization plan that can be used by the site as a basis to achieve improvements in power and utility operations in the immediate future.

Emerson's Powerhouse Energy Surveys provide a proven route to improving the operating results in your power and utility area. For more information about the Emerson Industrial Energy team, please visit [www.EmersonProcess.com/IndustrialEnergy](http://www.EmersonProcess.com/IndustrialEnergy)

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