

Empowering Power Plants Innovative Steam Solutions



Power Generation

Leverage Yarway's range of Level Measurements, Valves, Steam Traps and Services to reduce operating costs, improve your plant efficiency and upgrade system reliability.





Focused productivity investments are needed to meet generation targets and control operating costs.

How will you continue to meet your targets in the face of such dramatic change?

As a power producer, you're facing dynamic times. You're now cycling your plant more often to meet load balancing requirements, optimize fuel costs, and accommodate renewables on the grid. These operating conditions create increased thermal and mechanical stresses on your equipment and can push them to failure.

Yet to meet your commitments, you need to drive higher plant availability while being challenged to do more with constrained resources and a diminishing workforce.

Conditions are now more difficult than ever for you to achieve your generation and financial targets. But what if there was an expert partner you could turn to, that could help you navigate these challenging times?

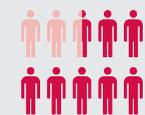
60-80% of all power plant failures are related to cycling operations.
- "Make Your Plant Ready for Cycling Operations" Power Magazine, August, 2011



A typical 400MW plant loses \$1.175M each year due to unplanned outages.
- "Quantifying the Cost of Unplanned Outages" Energy-Tech, August, 2012



In the US alone, 25% of electric utility workers will be ready to retire within 5 years.
- Transforming the Nation's Electricity System QER Task Force, January, 2017



Meet load demands faster and more reliably with the help of a trusted expert

To remain competitive and meet both your generation and financial targets, you need to adapt. Emerson's power industry experts can show you how optimizing final control solutions, such as control valves, critical isolation valves, pressure relief valves, regulators, actuators, steam traps and instrumentation can reduce your operating costs and enhance plant generating efficiency.



Optimize your plant for cycling operations

- Improve the speed, quality and accuracy of steam system
- Design in flexibility to improve ramp rates and boost unit responsiveness
- Increase plant efficiency with precise measurement and control solutions

Emerson's Yarway™ Blowdown Valves can ensure high quality steam production with very little maintenance



Improve plant availability while reducing operating costs

- Implement solutions that perform longer in increased cycling conditions
- Minimize downtime with solutions that are engineered for rapid maintenance
- Monitor valve performance to predict and proactively address potential failures

Emerson's Yarway Welbond repairable valve can reduce maintenance trouble and reduce operating cost

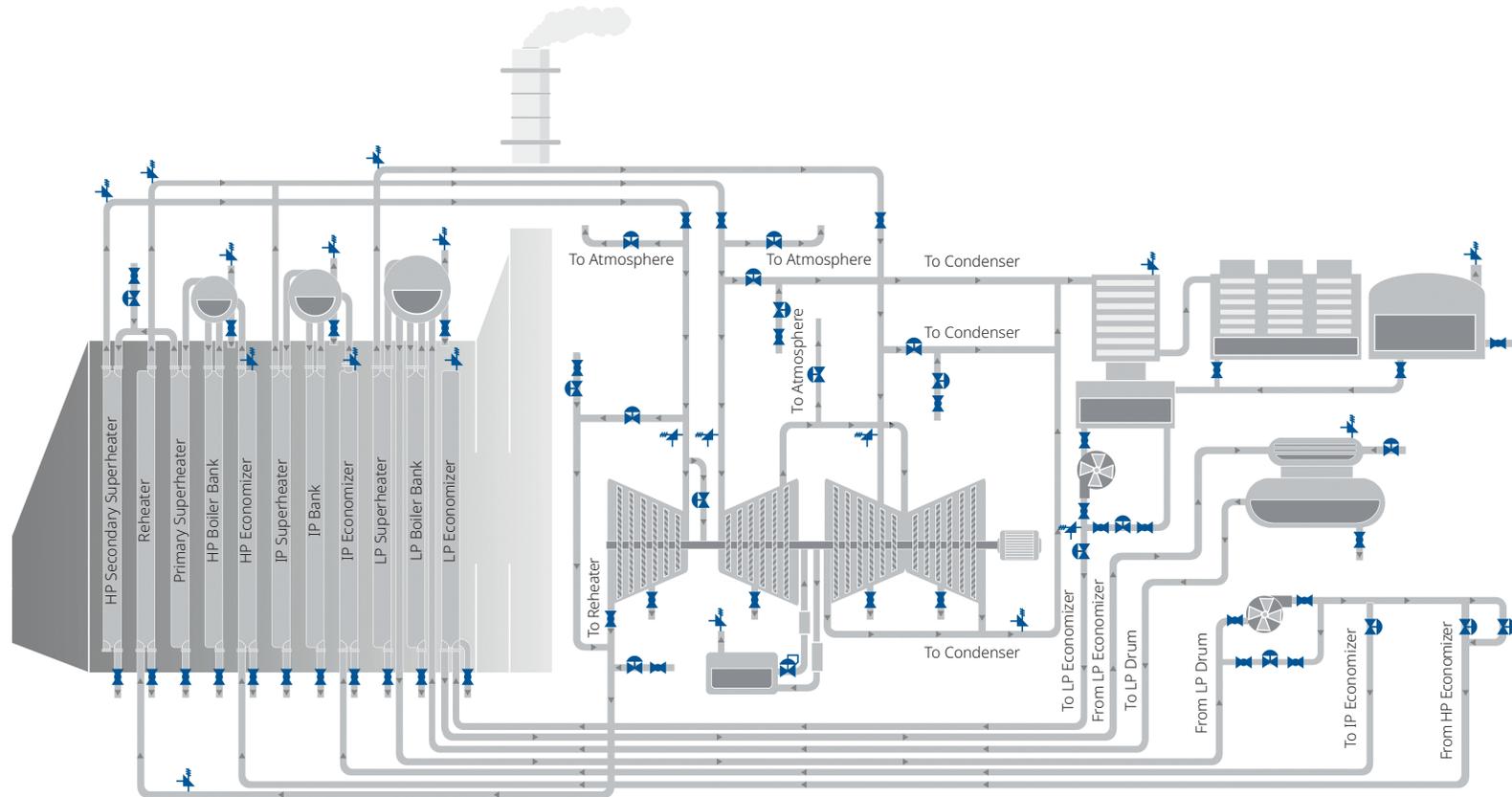


Harness the expertise and resources of a Main Valve Partner™

- Leverage Emerson's smart technologies to unburden your workforce
- Engineer efficiency into your plant with the help of Emerson's power experts
- Reach new heights of performance with genuine OEM training and support

Having a remote monitoring systems coupled with Yarway range of products minimizes human effort maximizing savings

Power Plant Solutions



Boiler/HRSG

- Protect the boiler from Scales by efficient blowdown
- Extend equipment life with accurate drum level control
- Reliably drain and vent the system with maintenance free isolation
- Prevent the Steam leakage with high efficient traps

Steam Turbine

- Improve plant flexibility with reliable isolation of your steam turbine
- Prevent the Steam leakage with high efficient traps

Balance of Plant

- Achieve smooth transition from startup to full load
- Improve plant flexibility with reliable isolation of your steam turbine
- Prevent the Steam leakage with high efficient traps



Boiler / Heat Recovery Steam Generator Solutions

- Direct and remote water level indicators provide high reliable and cost-effective steam drum level monitoring.
- Blowdown valves provide reliable and longer lasting service in high velocity and erosive applications.
- High pressure globe valves designed to provide maximum service life with minimum maintenance
- Wide range of high efficient steam traps prevent valuable steam leakage

Steam Turbine Solutions

- High pressure steam isolation valves provides maximum service life with reduced maintenance
- Wide range of steam traps designed specifically to cater the requirements of power industry

Balance of Plant Solutions

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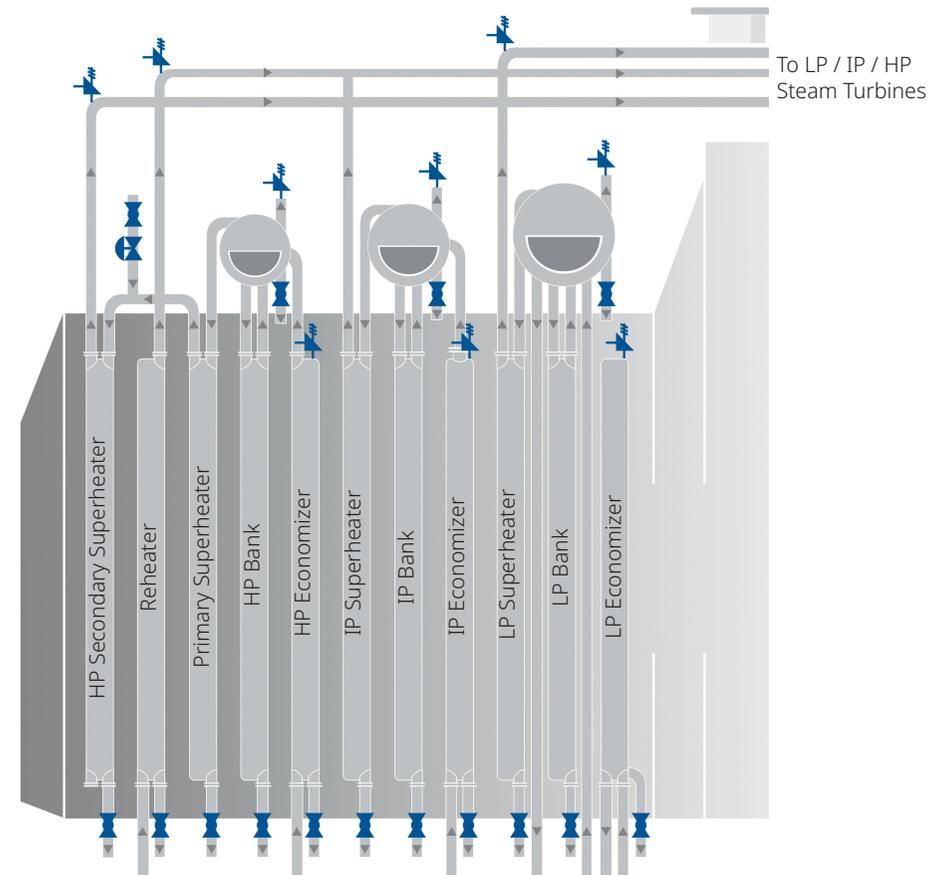
Boiler / Heat Recovery Steam Generator Solutions

With reliable and efficient solutions from Yarway™, you can run your Heat Recovery Steam Generator (HRSG) at optimal efficiency while managing steam output to the turbine with precise control.

Designed to operate with certainty in even the most challenging applications, you can rely on solutions from Emerson to help your HRSG perform in increased cycling operations, for longer.

What's your opportunity?

- Accurately control drum levels
- Generate clean steam with high efficient blowdown valves
- Enhance thermal efficiency
- Reduce heat loss with zero leakage drain and vent valves
- Protect critical assets with industry proven Steam Traps



Don't let your challenges boil over. Talk to an Emerson expert today.

Let one of Emerson's final control experts help you optimize your HRSG performance. With extensive experience in the power industry, our experts can walk through your operations and take on any engineering challenge you need to solve.

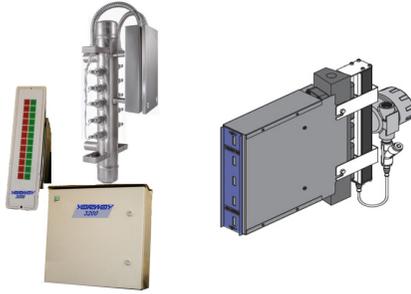


Services offered...

- Product and system training
- In-line vent and drain repair support
- Parts management
- Remote Monitoring of equipments
- Steam Trap Management support

Featured Heat Recovery Steam Generator Solutions

Yarway™ Liquid Level Indication Model: 4595 / 3200



Direct and remote water level indicators provide high reliable and cost-effective steam drum level monitoring.

Features:

- Individual port assemblies can be replaced in minutes with gauge in place
- Durable materials ensure longer life
- Glasses moulded and tempered to high specifications
- High quality mica sheets to protect glass from erosion of water, seam and alkalis
- Specially molded flexible graphite gasket between mica and body ensures tight seal
- Choice of low, medium and high-pressure designs

Yarway Boiler Trim Valves Models: 5800 / 3400 / 3900 / 6900 / Tandem



Continuous and intermitted blowdown valves provide reliable and longer lasting service in high velocity and erosive applications.

Features:

- In-line with ANSI/ASME B31.1-1986 Para 122.1.4, 122.1.7.c
- Single piece body eliminating leak points
- Rapid In-line Repair
- Robust Construction
- Vacuum Brazed seating and 10 variable orifices for Blowdown/Throttling
- High flow rate and minimal DP ensure longer life
- Available in Manual/Motorized/Pneumatic Actuated

Yarway Boiler Trim Valves Model: Welbond 5600



High pressure globe valve designed to provide maximum service life with minimum maintenance.

Features:

- In-line with ANSI/ASME B31.1-1986 Para 122.1.4, 122.1.7.c
- Single piece body eliminating leak points
- Rapid in-line repair
- Line seating ensures better seal, reduces sealing thrust and does not require lapping after repairing
- Vacuum brazed seating to withstand high differential pressure
- Generous port sizes ensuring high flow capacity and minimal DP
- Available in Manual/Motorized/Pneumatic Actuated

Yarway Steam Traps



Wide range of steam traps designed specifically to cater the requirements of power industry.

Features:

- Wide range of mechanical traps for process application
- High pressure and high efficient thermostatic steam traps an excellent choice against bimetallic technology for up to 600#
- Dual orifice thermostatic steam trap model to cater very high-capacity application
- High pressure steam traps 310 bar rugged, in-line repairable with several capacity ratings. Designed to fail open.



For more information, visit [Emerson.com/FinalControl](https://www.emerson.com/FinalControl)

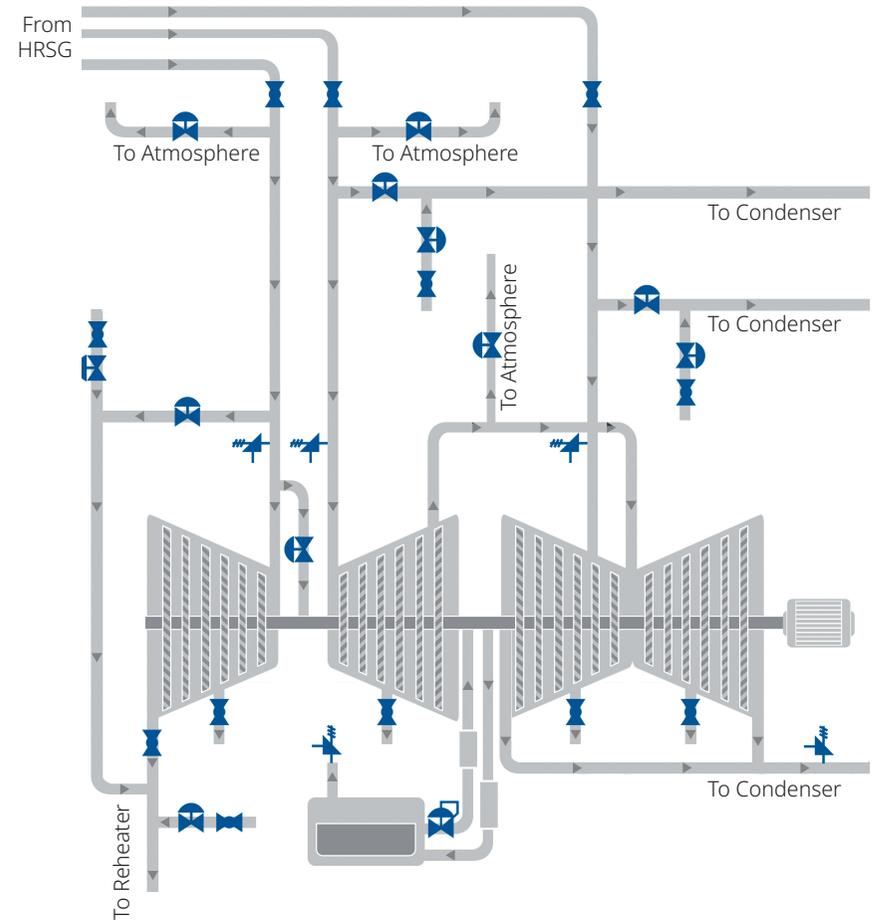
Steam Turbine Solutions

Steam turbines represent one of the most substantial investments for a power plant, but as they age, more precise and reliable control technology is critical to maintain performance. Emerson's final control products and services help ensure the continued reliability, responsiveness, efficiency and protection of these critical plant assets.

What's your opportunity?



- Reliably isolate the turbine during startup, shutdown and plant upset conditions
- Reduce heat loss with zero leakage isolation
- Protect critical assets with industry proven steam traps



Operate your steam turbine with confidence

Improper control, monitoring and protection of your turbine could prove catastrophic to your operations. Talk to an Emerson expert about the final control products and services that will help ensure your turbine runs efficiently with ultimate reliability.



Services offered...

- Product and system training
- Emergency technical and on-site support
- In-line vent and drain repair support
- Parts management
- Digital valve monitoring and analysis

Featured Heat Recovery Steam Generator Solutions

Yarway™ Boiler Trim Valves Model: Welbond 5600



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Balance of Plant Solutions

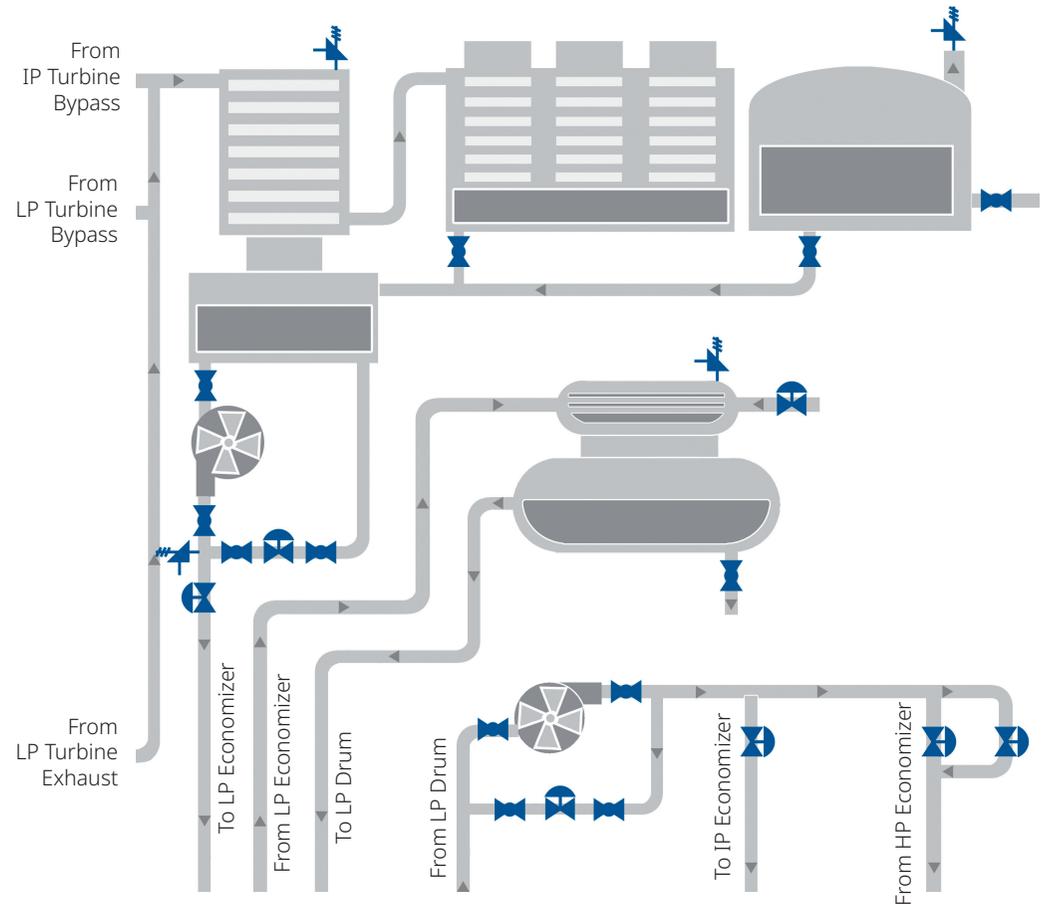
Maintaining your plant while ensuring it operates at peak efficiency requires attending to more than your heat recovery steam generators and turbines.

Emerson's valves, steam traps and instrumentation can improve the efficiency and safety of your Balance of Plant processes, helping you reduce forced outages and derates as well as improve overall plant heat rate.



What's your opportunity?

- Meet regulations with reliable emission control
- Optimize water intake, treatment and circulation
- Protect critical assets with industry proven Steam Traps
- Reduce heat loss with zero leakage drain and vent valves



Capture efficiency gains by selectively upgrading your Balance of Plant assets

If you're looking for performance improvements in your Balance of Plant processes, get in touch with an Emerson expert who can review your operations and suggest enhancements that will most cost effectively increase process efficiencies.



Services offered...

- Product and system training
- Emergency technical and on-site support
- In-line vent and drain repair support
- Parts management
- In-line isolation valve maintenance
- Startup, shutdown, turnaround and outage support

Featured Balance of Plant Solutions

Yarway™ ARC Pump Protection Valves Models: 9100, 9200, 5300



Protect your centrifugal pumps against thermal damage and destruction with reliable, self-contained and low maintenance automatic recirculation control valves.

Features:

- Robust design ensures long life
- Integral check valve to prevent back flow
- Multistage pressure let-down to prevent cavitation
- Flow conditioner to help reduce the effect of cavitation

Yarway Boiler Trim Valves Model: Welbond 5600



High pressure globe valve designed to provide maximum service life with minimum maintenance.

Features:

- In-line with ANSI/ASME B31.1-1986 Para 122.1.4, 122.1.7.c
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Continuous support in the face of changing market and operating conditions



Emerson leads the way with industry-defining end-to-end digital service experiences, helping you achieve superior outcomes through our maintenance, reliability and performance offerings. The tools we've developed support the digital transformation of the power industry, providing the confidence to extract the maximum value from your service and technology investments. Our teams partner with you across the globe to help you maintain safe operation, improve reliability and optimize plant performance.

With presence across entire Asia Pacific supported by our trusted partners, local experts are available to work with you to understand your unique challenges and help you find a solution. Our broad portfolio of service offerings allows us to tailor our support to align with your specific business goals.

Emerson local experts are never far away. Get in touch today to arrange a site walk and see the value Emerson can bring to your operations.

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