



DELTA V STANDARD BOILER SOLUTION

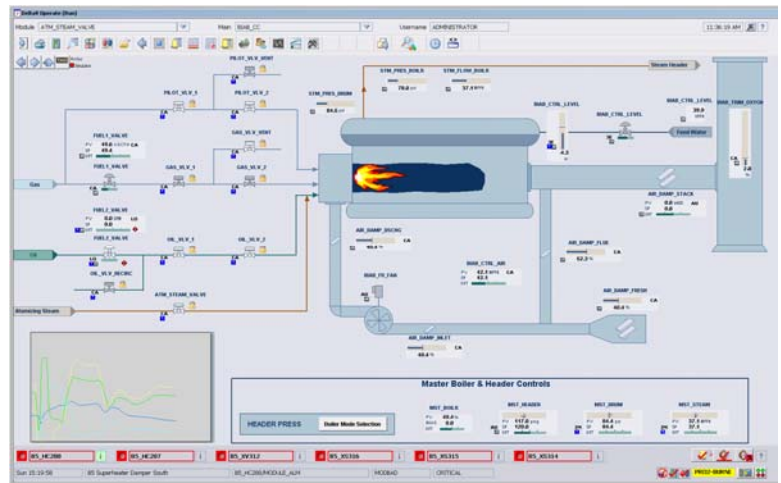
Trim Fuel Costs and Simplify Operation

Better control for reduced cost and improved operation

Reliable, efficient boiler control is essential for profitable plant operation. Keeping a steam production process in balance poses a constant challenge. Steam loads change as production demands fluctuate. Fuel variations add to the complexity and equipment malfunctions can result in costly process upsets. The Emerson Standard Boiler Solution can:

- Increase reliability and operator confidence
- Save fuel and reduce upsets
- Standardized, field-proven controls reduce errors and increase productivity
- Operate closer to design capabilities
- Reduces startup and engineering costs

The boiler solution provides controls for managing combustion, feedwater and drum level, stack oxygen, and steam header pressure. Precise, automatic control helps maintain steam header pressure in order to enhance plant efficiency, reduce upsets, and minimize cost.



What is controlled?

Emerson provides pre-engineered controls for gas or oil-fired boilers. I/O can be either classic or use Foundation FieldBus. The Standard Boiler Solution includes:

- Steam header pressure control with failure protection
- Boiler master for loading individual boilers
- 3-element drum level control with failure protection
- 1-element drum level control
- Combustion control using parallel metering with cross-limits
- O₂ trim based on fuel use/type with Dynamic Excess Air correction

- Simulation for testing
- Fuel, water, and steam totals
- Conditional Alarming
- Electronic documentation

How can controls improve the boiler process?

Improvements are often needed to reduce cost of fuel, stabilize upsets in operation, or to comply with NFPA. This solution helps boilers perform more closely to design specifications and demand requirements, shift after shift.

How is engineering cost reduced?

Because its pre-configured and well documented, less time is spent in implementing the controls. Reduced time for design, configuration, testing, check-out, and commissioning is required. Emerson has proven this on more than 100 boilers.

How flexible can control be?

Flexibility is included to ensure that the control solution fits specific boiler process requirements. Options include:

- Burner management solution
- Automatic warm-up control
- Standby mode
- CO and NO_x Control
- Waste fuel Btu compensation

The solution can be customized for use with hydrogen, waste fuels, and to be a furnace or thermal oxidizer.

How does it save fuel?

The simple answer is with improved efficiency. Boilers with mechanical jackshaft or less

functional controls have an air to fuel relationship that errs on the conservative side.

Excessive air causes heat to be wasted up the stack. Using metered air and fuel flows with Dynamic Excess Oxygen Correction allows for aggressive and safe air and fuel mixtures that save fuel. For each 2% reduction in flue gas oxygen, a savings of approximately 1% fuel is achieved. On a 100 kpph steam producing boiler at \$6/therm, \$63K per year could be saved with natural gas.

How will it reduce upsets and improve reliability?

Adding state of the art controls will help the boiler operate at optimum conditions. For example, tuning of header pressure and drum level loops adapts for changing conditions. In addition, controls are designed with failure protection logic. If an analog input goes bad, the loop will go to manual mode and alarm the operator. On critical loops such as header pressure, the controls will automatically switch to backup control and alert the operator to the condition.

Can it support information needs?

Changes in operation and alarms are automatically logged. Data is available real time for other applications using integration technologies to support accounting and compliance requirements.

What's the operator interface?

Included are graphic displays for steam header overview and a detailed boiler display (with trends and controls for operating the unit in a clear and logical way).

What about support?

Few operations have resources or expertise to design, implement, startup, tune, and maintain a complex boiler system on their own. Emerson experts are available to assist with any stage of a boiler control project. Our industry experts can help you design, justify and implement improved boiler control that will show immediate results on your company's bottom line. Please call us to find out how.

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