AUTOFLAME
Combustion Management Systems

Southern Africa Case Study: Glenmor Products, East London.

The Boilerhouse

GLENMOR PRODUCTS (PTY) LTD.

When the existing 3 ton steam boiler at **Glenmor Products**, East London was condemned over the Christmas shutdown, the Factory Manager, **Andrew Röth** had to make some quick decisions. With plant expansion in mind, a second-hand 5.4 ton Alen Ygnis boiler fitted with a two stage Weishaupt burner was sourced. *Premature failure* of his original boiler was attributed to thermal shock imposed by stage firing of the burner. This poor form of setpoint control caused regular jumps between firing rates and excessive on/off cycles. Each time the burner starts up, cold air is blown through the boiler during the purge cycle, cooling down what you are trying to heat up, followed by the intense heat of high fire.

Gary Spence of Boiler and Burner, the main contractor, during a meeting with Andrew, was contacted by **Grant Renecle**, Managing Director of ***Combustion Technology***. He had the perfect solution - **'The *Autoflame* Combustion Management System'**. With a microprocessor at the heart of the system controlling direct drive fuel and air actuators, the system achieves locked on, near stoichiometric control to the pressure setpoint. The ***Autoflame*** System is marketed on it's fuel saving ability, this was however of secondary importance to Andrew, whose primary concern was to decrease the thermal shock to the boiler and increase its lifespan.

Installation

Andrew had to have the factory up and running as soon as possible so the existing 2 stage Weishaupt burner was commissioned to give them steam. Two months after receiving the order ***Combustion Technology*** delivered and installed the ***Autoflame Mk6 Evolution.*** The mechanical two stage controls, cams and linkages were removed from the burner and replaced with individual direct drive servomotors for the air damper, oil valve and combustion head. ***Autoflame*** UV Flame sensor and steam pressure transducers were also installed. **The complete package was commissioned for optimum combustion, achieving excess air levels as low as 10% at high fire and a 4:1 turndown ratio.**

continued overleaf.....

RIELLO BURNERS
COMBUSTION TECHNOLOGY SOUTHERN AFRICA

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Southern Africa Case Study continued.

GLENMOR PRODUCTS (PTY) LTD.

The burner now modulates to setpoint, varying the heat input to meet the steam demand from the boiler.

An increased turndown has been achieved and on/off cycles reduced to a minimum to meet Andrew's primary requirements.

A secondary benefit is the reduction in fuel consumption for the same steam output; preliminary figures show between a ***15% to 20% saving in fuel consumed.***

The ***Autoflame*** installation is being paid for in monthly instalments based on projected savings of 15%.

Not only is the ***Autoflame*** paying for itself in fuel savings, but ***Glenmor*** have also made an additional financial saving from day 1.

Job commissioned: 13th May 2002

New ***Autoflame*** panel

<u>Site Overview:</u>

Existing Equipment
Boiler: Alen Ygnis 12,000 lb/h Steam output, (5.4 tons)
Burner: Weishaupt RMS 50/2 A ZM, 490 kg/hr, progressive two stage.

Combustion measured prior to the installation:
Oxygen: high Fire 6.5%, low fire(40% of high fire): 4.8%

Equipment Installed:
Autoflame Mk6 Evolution Micro Modulation Controller
Autoflame Large servomotor coupled to the air damper
Autoflame Small servomotor coupled to the oil valve
Autoflame Small servomotor driving the combustion head
Autoflame UV sensor
Autoflame steam pressure sensor.

Combustion measured after the installation:
Oxygen: high fire 2.1%, low fire (25% of high fire): 4.7%


Oil Servo


Air Servo


Head Servo


UV Sensor

Although there has been a small increase in combustion performance, the main savings are attributed to the improved control when installing *'Autoflame'*.

Performance analysis after 2 months indicates fuel *savings of nearly 20%*