









Controls Upgrade (Intelligen™) and Tune-Up for Regenerative Combustion System



B017199, B017200, B017751

Application: Steel Reheat Furnace

Bloom provided a combustion system tune-up and controls upgrade on a reheat furnace that provided a **safer operation, better fuel rates, less scale loss and greater productivity** through the furnace.

Purpose/Drivers	Scope	Achievements
<ul style="list-style-type: none">  Scale Loss  Fuel rate  Productivity 	<p>Controls Upgrade incorporating Intelligen™ scheme</p> <ul style="list-style-type: none"> ● New Controls ● Ancillary Equipment: <ul style="list-style-type: none"> * Upgraded cycle valves * VFDs for air and exhaust fans * Pilot components * Upgraded flame safety 	<p>+ Improved Operational Safety</p> <div style="margin-top: 10px;"> <p>Fuel Rate 33% Decrease</p>  </div> <div style="margin-top: 10px;"> <p>Scale Loss 36% Less</p>  </div> <div style="margin-top: 10px;"> <p>Production Increase 35% Increase</p>  </div>
<p>Key Points:</p> <p>1) Minimal cost and downtime, were possible because of the limited scope of hardware modification and because of the ability to complete the programming ahead of time.</p> <p>2) The cost was about a third as compared to a complete replacement of all combustion equipment (not including installation and extended downtime).</p>	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>Sample Bar BEFORE</p> </div> <div style="text-align: center;">  <p>Sample Bar AFTER</p> </div> </div>	

A North American steel producer has steel reheat furnace that processes 20 tons per hour of steel bars (rounds). The furnace OEM installed five pairs of Bloom 1150 regenerative burners, and had provided the combustion controls. Combustion control, however, were not executed very well. The customer was particularly concerned with scale loss and fuel rate, and had considered a complete rebuild of the furnace. Bloom performed a study on the existing equipment, diagnosed the problem, and developed a solution to provide a combustion system tune-up and retrofit of the controls system, which included some ancillary equipment in order to bring the combustion system into proper performance. Bloom made guarantees on fuel rate, scale loss and a production increase which they easily met during performance testing.

Keywords: Regenerative, retrofit, guarantee, Intelligen, steel reheat

Bloom Engineering Company, Inc.
www.bloomeng.com