

**“BASHKIR GENERATING COMPANY” LLC**  
**Sterlitamak power plant**  
**(Novo-Sterlitamak power plant)**

Northern Interindustry Company  
«The Alternative» Ltd  
For the attention of  
Head of Technical Project  
V.V. Gladkikh

**About the results of operation**

In 2014 during overhaul repair of of БК3-420-140 HFM boiler unit No.2 heating elements of regenerative air heater were replaced by heating elements produced by “Northern Interindustry Company “The Alternative” Ltd.

During operation after the replacement of heating elements, maintenance and test engineers evaluated boiler condition after repair and defined technical and economical indexes. Tests were carried out with different loads by burning gas fuel.

Tests results showed that flue gas temperature in the whole range of loads is below normative value and doesn't exceed 122 °C at the nominal mode (this mode normative is 148°C).

At the present moment boiler operation proves the high efficiency of heating elements installed.

Enclosure: list of main parameters of boiler functioning.

Best regards,  
Chief engineer  
Sterlitamak power plant

A.T.Kotkov

**List of main parameters of boiler functioning (БК3-420-140НГМ No.2)**

No.	Parameter	Dimension	Before repair June, 2014	After repair with the installation of CMKA <sup>®</sup> heat exchange elements into RAH December, 2014
1.	Type of RAH – ПБП-54			
2.	Steam capacity	tons/hour	420	420
3.	Type of fuel		gas	gas
	Fuel consumption	m <sup>3</sup> /h	33500	31180
	Calorie content of fuel	kcal/m <sup>3</sup>	8176	8178
4.	Air leakage into furnace	%	1	0
	Coefficient of excess air at furnace outlet		1.040	1.031
	Coefficient of excess air before RAH		1.049	1.050
	Coefficient of excess air after RAH		1.198	1.105
5.	Gas temperature at RAH inlet	°C	370	330
	Air temperature at RAH inlet	°C	44	41
	Gas temperature at RAH outlet (flue gas)	°C	161	122
	Air temperature at RAH outlet	°C	260	279
6.	RAH resistance by gas	mm of water column	55	70
	RAH resistance by air	mm of water column	80	90
7.	Temperature of flue gases	°C	161	122
	Heat loss with flue gases	%	5.93	3.86
	Boiler gross efficiency	%	93.57	95.64

Maintenance and Test Engineer

M.V.Bodanin