

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

Northern Interindustry Company  
«The Alternative» Ltd  
For the attention of  
Project Engineer  
A.E. Ivut

**About the results of operation**

In 2015 during overhaul repair of of БК3-420-140 HFM boiler unit No.3 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 nominal load by burning gas fuel.

Tests results showed that flue gas temperature in nominal mode is below normative value and doesn't exceed 124 °C at the nominal mode (this mode normative is 144°C).

At the present moment boiler operation proves the high efficiency of heating elements produced by “Northern Interindustry Company “The Alternative” Ltd.

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.3)**

No.	Parameter	Dimension	Before repair		After repair with the installation of CMKA <sup>®</sup> heat exchange elements into RAH	
			September 24, 2014		November 10, 2015	
1.	Type of RAH – ПБП-54					
2.	Steam capacity	tons/hour	419		420	
3.	Type of fuel		gas		gas	
	Fuel consumption	m <sup>3</sup> /h	32480		32220	
	Calorie content of fuel	kcal/m <sup>3</sup>	8210		8164	
4.	Air leakage into furnace	%	0		0	
	Coefficient of excess air at furnace outlet		1.036		1.032	
	Coefficient of excess air before RAH		1.036	1.036	1.043	1.038
	Coefficient of excess air after RAH		1.127	1.100	1.225	1.127
5.	Gas temperature at RAH inlet	°C	317	332	332	347
	Air temperature at RAH inlet	°C	40	39	36	36
	Gas temperature at RAH outlet (flue gas)	°C	159.8	159	123.6	123.3
	Air temperature at RAH outlet	°C	245	236	284	274
6.	RAH resistance by gas	mm of water column	35		60	
	RAH resistance by air	mm of water column	60		95	
7.	Temperature of flue gases	°C	159		124	
	Heat loss with flue gases	%	5.53		4.35	
	Boiler gross efficiency	%	93.97		95.15	

Maintenance and Test Engineer

M.V.Bodanin