

**«KAZAN CHP-PLANT-1»
BRANCH OF «GENERATING COMPANY» OJSC
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March 02, 2015

«Northern Interindustry Company
«The Alternative» Ltd
For the attention of Chief Engineer
V.I. Mankovsky

About the results of operation

Dear Vladimir Igorevich,

Kazanskaya CHP-plant-1 has been applying CMKA® heat exchange elements at regenerative air heater PBII-54 (boiler unit No.11) since 2014 year.

As result of its installation was the increasing of efficiency index of boiler unit TГM-84 «Б» by 1.28% that is very significant in conditions of market and electric power industry enterprises functioning.

We thank you for design and production effective types of heat exchange elements and hope for further cooperation.

Enclosure:

1. List of the main technical and economical indexes of boiler unit.

Chief Engineer

E.V. Gilyazeev

**List of the main indexes of boiler unit
ТГМ-84Б (No.11)**

No	Parameter	Dimension	Data	
			Before repair April 01, 2013	After repair with the installation of CMKA® heat exchange elements into RAH May 31, 2013
1	Type of RAH		PBII-54	PBII-54
2	Steam production	tons/hour	364	359
3	Type of fuel	gas/mazut	gas	gas
	Fuel consumption	kg ³ /s, m ³ /s	28200	27200
	Calorie content of fuel		8027	8163
4	Air inleakage into furnace	%	5.5	5.0
	Excess air coefficient at furnace outlet	-	1.11/1.11	1.08/1.08
	Excess air coefficient before air heater	-	1.19/1.4	1.18/1.21
	Excess air coefficient behind air heater	-	1.27/1.43	1.22/1.27
5	Gas temperature at air heater inlet	°C	276/264	311/309
	Air temperature at air heater inlet	°C	9/6	10/12
	Gas temperature at air heater outlet	°C	143/148	130/128
	Air temperature at air heater outlet	°C	236/236	283/278
6	Air heater resistance by gas	mm of w.c.	127	184
	Air heater resistance by air	mm of w.c.	-	-
7	Temperature of flue gases	°C	145/150	132/130
	Heat loss with flue gases, q ₂	%	7.38	6.1
	Boiler gross efficiency	%	92.20	93.48

Chief Engineer of «Kazan CHP-plant-1»

E.V. Gilyazeev