

ONE WAY TO DIMINISH THE UNITARY COST OF THE STEAM GENERATED IN THE 420 t/h STEAM BOILER

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ABSTRACT

A major problem for all rotary Ljungstrom type pre-heaters is to optimize the number of rotation of the heat wheel. Due to the many sources of boiler inefficiency, the temperature of flue gas changes, it is necessary to control the number of rotation of heat wheel. This paper presents an apparatus permitting to evaluate the maintaining time necessary for the metallic matrix of the heat wheel to absorb maximum exergy from the flue-gas, which promote the diminution of the unitary cost of the steam generated in the 420 t/h steam boiler.

REFERENCES

- [1] BEJAN, A., TSATSARONIS, G., MORAN, M., *Thermal Design & Optimization*, John Wiley & Sons, New York, 1996.
- [2] CIUCESCU, E.P., *A Calculation Method to Determine the Number of Rotation of the Heat Wheel at Rotary Ljungstrom Type Preheater*, Proceedings of MOCM9, pp.45-48, ISSN 1224-7480, University of Bacau, Romania.
- [3] CIUCESCU, E.P., *The Combining Analysis of the 1st and 2nd Low of the Thermodynamic in to the Run of the Steam Boilers*, International Summer School on "Computational and Experimental Simulation of Combustion and Multi-phase Flows in Advanced Energy Systems", University of Sakarya, Kirkpinar, Turkey, 12-17 July, 2004.
- [4] IONIȚĂ, I.C., *Generatoare de abur*, vol.1, Universitatea din Galați, 1990.
- [5] IONIȚĂ, I.C., *Exergetical Cost-to-Quality Analysis of an Autonomous Apartment Heating*, The 16th International Conference on Efficiency, Cost Optimization, Simulation and Environmental Impact of Energy Systems, June 30-July 2, Copenhagen, Denmark, pp.649-656, ISBN 87-7475-297-9.
- [6] KOTAS, I.J., *The exergy method of thermal plant analysis*, Butter Worths, London, 1985.
- [7] PANAIT, T., *Exergoeconomia sistemelor energetice*, Editura Fudației Universitare "Dunărea de Jos" din Galați, 2003.