

Accepted Manuscript

Energy saving factors affecting analysis on district heating system with distributed variable frequency speed pumps

Xianjie Sheng, Lin Duanmu

PII: S1359-4311(17)32614-5

DOI: <http://dx.doi.org/10.1016/j.applthermaleng.2017.04.079>

Reference: ATE 10228

To appear in: *Applied Thermal Engineering*

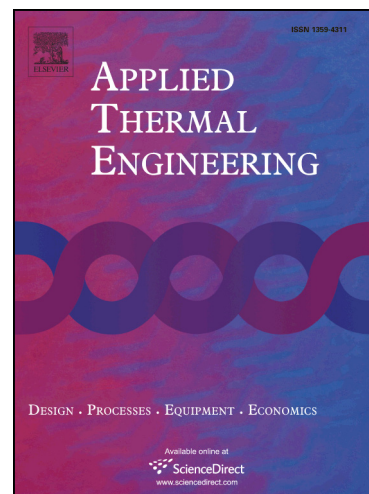
Received Date: 10 July 2016

Revised Date: 27 February 2017

Accepted Date: 18 April 2017

Please cite this article as: X. Sheng, L. Duanmu, Energy saving factors affecting analysis on district heating system with distributed variable frequency speed pumps, *Applied Thermal Engineering* (2017), doi: <http://dx.doi.org/10.1016/j.applthermaleng.2017.04.079>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



Energy saving factors affecting analysis on district heating system with distributed variable frequency speed pumps

Xianjie Sheng*, Lin Duanmu

School of Civil Engineering Faculty of Infrastructure Engineering, Dalian University of Technology,

Liaoning, China

Corresponding author*: Xianjie Sheng. E-mail address: shengxianjie@yeah.net. Tel: +8615041120978.

Abstract: The distributed variable-frequency speed pump (DVFSP) district heating system is not only to set circulating pump in the heat source, but also to set booster pumps in the heating pipeline network. All pumps adopt frequency conversion control. Compared with the traditional centralized power heat supply system, the distributed variable-frequency speed pump district heating system has more advantages in solving the hydraulic imbalances and improving the energy-saving rate of the heating system. In China the application of distributed variable speed pumps in the district heating (DH) network has been considered as a technology improvement that has a potential of saving energy, compared to the conventional central circulating pump (CCCP) DH system. In order to analyze the factors affecting energy-saving rates and pipe network balance mathematical analytical method is used in this paper. In the conclusion, how to further improve the energy saving rate will be put forward together with the improvements for hydraulic stability balance as a reference of optimized engineering design.

Keywords: District heating, Distributed variable-frequency speed pumps, Energy-saving, factors affecting.

1 Introduction

Download English Version:

<https://daneshyari.com/en/article/4991128>

Download Persian Version:

<https://daneshyari.com/article/4991128>

[Daneshyari.com](https://daneshyari.com)