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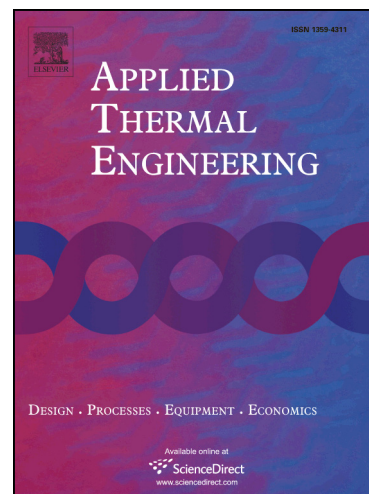
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Abstract: The distributed variable-frequency speed pump (DVFSP) district heating system is not only to set circulating pump in the heat source, but also to set booster pumps in the heating pipeline network. All pumps adopt frequency conversion control. 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

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