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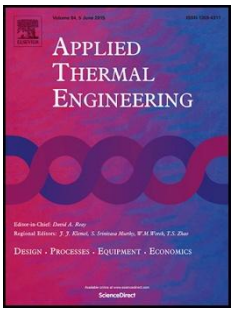

Title: Modelling for condensate throttling and its application on the flexible load control of power plants

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Modelling for Condensate Throttling and its Application on the Flexible Load Control of Power Plants

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Highlights

- Static and dynamic models for condensate throttling are set up.
- Maintain time for condensate throttling are calculated.
- Improved coordinated control coupled with condensate throttling is raised.
- The strategy can finally recover the deaerator level to its normal value.
- Simulation results reveal that the control time is shorten by 20s.

Abstract:

Most power associations have made stringent requirements on the load change speed and range of thermal power plants. However, it has become more and more difficult to improve their load change capabilities just through coordinated control system because of boiler's large delay. Condensate throttling is one of the few efficient methods which can be used to rapidly activate stored energy enough for unit load support. We first set up its static and dynamic model. Then we design an improved load control strategy by combining traditional coordinated control with condensate throttling control. This strategy can also recover the balance of deaerator level to prepare for the next load-change use. Finally, simulation results reveal that our strategy has much better performance than traditional coordinated control.

Keywords:

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