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Dynamic Simulation of Flooded Condensers

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Highlights

- How to set up a dynamic simulation of a flooded condenser is demonstrated.
- Performance of a flooded-condenser is compared with cooling-water manipulation.
- Effective pressure control is achieved for throughput and temperature disturbances.

Abstract

Pressure is controlled in most distillation columns by manipulating condenser heat removal, which can be achieved in a variety of ways. The most direct method is to manipulate the flowrate of the coolant. However if the coolant is cooling water, maintaining a high and constant flowrate is sometimes required to prevent fouling and corrosion. A commonly used alternative is to partially flood the condenser with liquid by placing a control valve beneath the condenser. Changing the liquid level changes the heat-transfer area, which changes the condenser duty. The flowrate of cooling water is fixed

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