

Scheduling of Naphtha Transporting, Unloading, Storing and Feeding for Naphtha Cracking Center

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This work addresses a scheduling problem of a feeding system for Naphtha Cracking Center (NCC). The system consists of multiple suppliers, multiple berths, multiple storage tanks, and one mixing tank. Naphtha is supplied to furnaces of NCC through several steps; transporting naphtha by vessel, unloading naphtha in berths, storing naphtha in tanks and feeding naphtha into furnaces. Optimizing the scheduling of transporting naphtha by vessel is the key issue in this problem because the transporting step spends the most expenses among all steps. In this step, the arrival times of vessels and the amount of naphtha transported by these vessels are considered as key variables. The scheduling problem is formulated as mixed-integer linear programming (MILP) model. This model is applied to an example, which consists of 5 suppliers, 3 types of vessels, 3 berths, 5 storage tanks, and 1 mixing tank.