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Crude Distillation Process Simulation Using Unisim Design Simulator

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Abstract : The paper deals with the simulation of the crude distillation process using the Unisim Design simulator. The necessity of simulating this process is argued both by considerations related to the design of the crude distillation column, but also by considerations related to the design of advanced control systems. In order to use the Unisim Design simulator to simulate the crude distillation process, the identification of the simulators used in Romania and an analysis of the PRO/II, HYSYS, and Aspen HYSYS simulators were carried out. Analysis of the simulators for the crude distillation process has allowed the authors to elaborate the conclusions of the success of the crude modelling. A first aspect developed by the authors is the implementation of specific problems of petroleum liquid-vapors equilibrium using Unisim Design simulator. The second major element of the article is the development of the methodology and the elaboration of the simulation program for the crude distillation process, using Unisim Design resources. The obtained results validate the proposed methodology and will allow dynamic simulation of the process.

Keywords : crude oil, distillation, simulation, Unisim Design, simulators
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