

### Dynamic simulation of a cryogenic distillation process

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Cryogenic air separation unit operates at extremely low temperatures of about 100K and consumes an enormous amount of electrical energy. Optimal operation and control of processes, planning and scheduling for air separation columns, optimizing the design of the system have suggested by means of reducing energy consumption and improving efficiency. In this study, we execute dynamic simulations of cryogenic air separation unit when an oxygen production increases or decreases during steady-state operations. At first, the steady-state simulations and sensitivity analyses are performed at several guaranteed operation cases in a real plant, based on them; a dynamic simulation model is developed. It is used in the selection of important parameters for system control and the suggestion of optimal operation guidelines.