



Distillation Control Systems



Course Objectives

1. Define material balance and list the typical variables.
2. Define energy balance and list the typical variables.
3. Describe material balance control loops.
4. Describe typical energy balance control loops.
5. Describe differences in control system configurations in distillation columns.
6. Define the following terms: steady state operation, process upset, product loss, direct composition measurements, indirect composition measurements, and process lag.
7. Describe the difference in steady state operation and process upset.
8. Describe how product specifications are maintained in a distillation column.
9. Describe how a change in feed composition can cause a process upset.
10. Describe how an increase in bottom pressure causes a change in a column control system.
11. Describe how the following conditions affect the composition of a distillation system's overhead and bottoms product: increase in bottom temperature, decrease in bottom temperature, and change in reflux.



Key Terms (Define the following)

material balance - _____

process lag - _____

steady state - _____



Questions

1. _____ occur when process variations fall outside the process control limits.
2. The result of off-specification products is referred to as _____.
3. The heat input to the column being approximately equal to the heat removed from the column is called _____.