Katherine Allen

CME220 – Aspen Workshop 4

Part 1

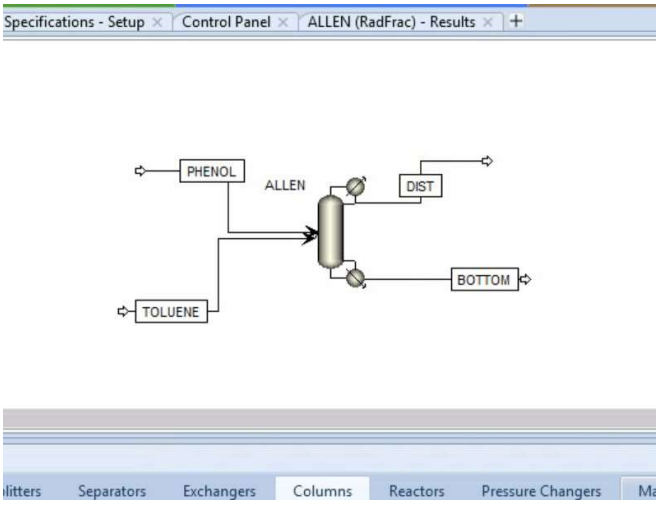

Figure 1: Flow Chart

1. Is heat being added to or removed from the condenser?

   Heat is being removed (-1681792.92 cal/sec)

2. Is heat being added to or removed from the reboiler?

   Heat is being added (2228807.39 cal/sec)

Component Fraction	Dist	Bottom
Phenol	0.000218254	0.999781746
Toluene	0.026134615	0.973865385
MCH	0.972555862	0.027444138

3. Which product stream contains MCH?

   The dist. stream contains MCH.

4. Does the same information you obtained for your table above can be seen in the mole fractions section?

   No, they do not all match up.

5. What happens to the tray temperature as you move up the column?

   As you move up the temperature decreases.

6. What happens to the pressure as you move up the column?

The pressure gets lower

7. What is the purity of MCH overhead; does it match what's in the table?

   Purity of MCH is 97.%, it does match what is in the table.

Part 2

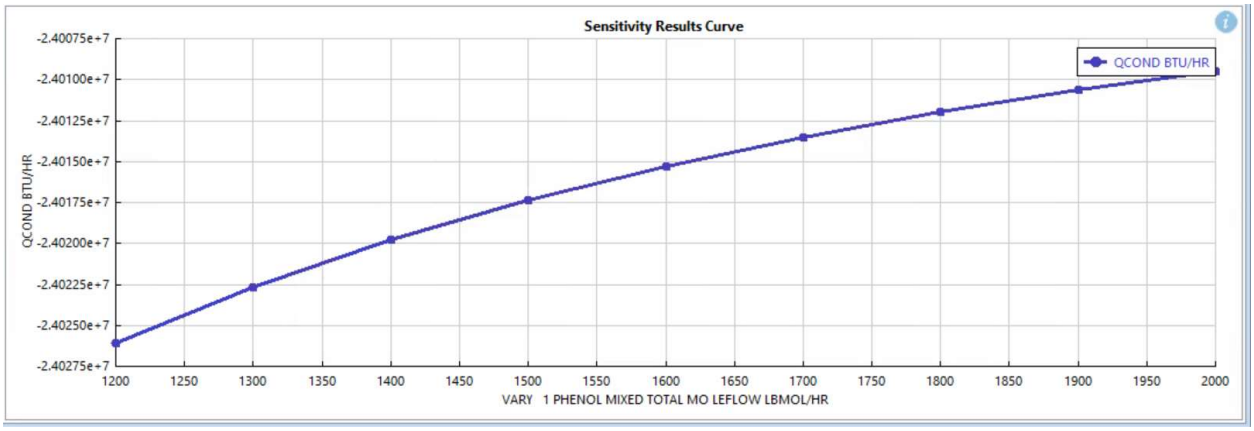

Figure 2: Q Condenser

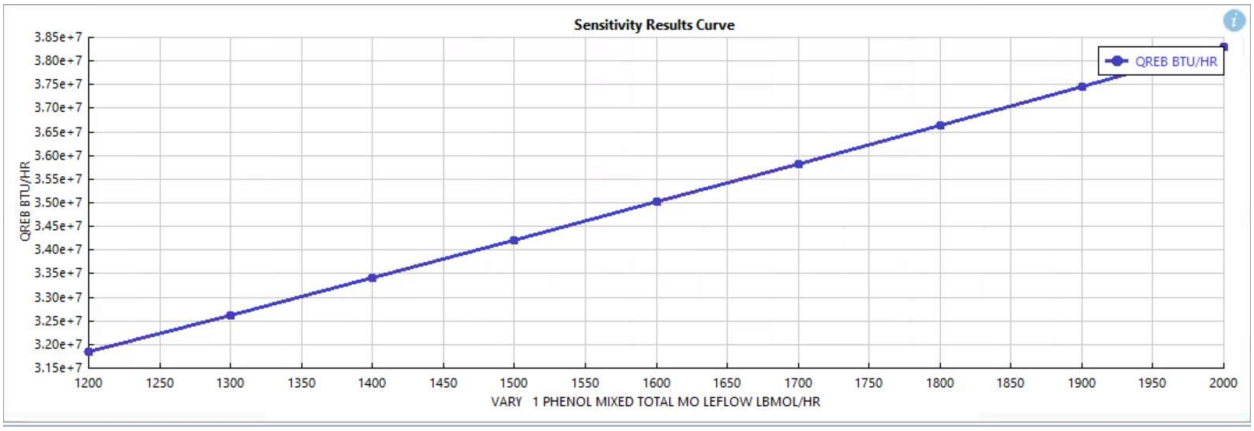

Figure 3: Q Reboiler

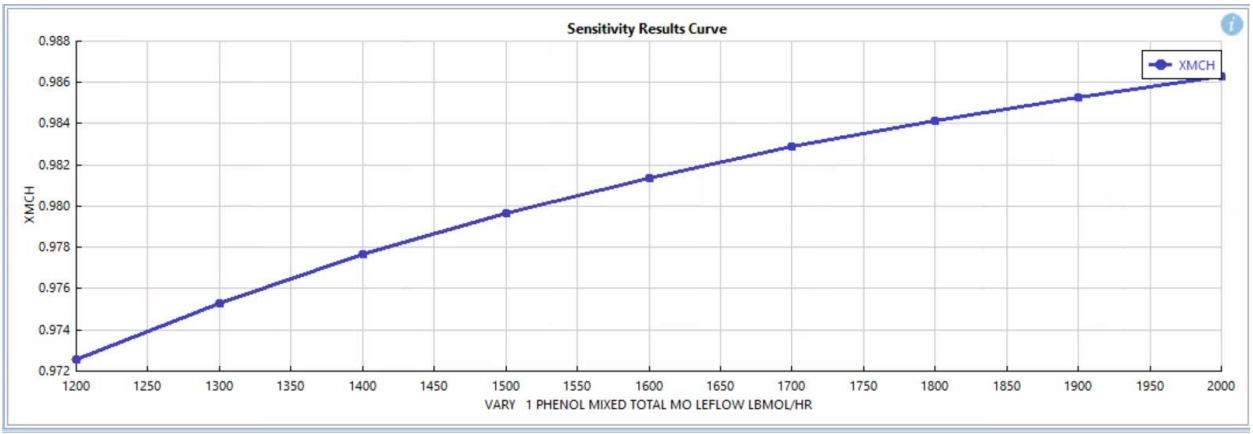

Figure 4: MCH Purity Curve

8. What are the trends of purity and heat duties with increasing phenol flowrate?

The purity increases with increasing phenol flow rate but the energy required also increases.