

## CHAPTER 5

### CONCLUSION

Glycerine loss is happened and make a problem because of the lack of proper control system and a good vapor-liquid separation .In Colgate Palmolive (Thailand) Co.,Ltd.,the evaporator has been modified for increasing the rate capacity so that the design of the vapor-liquid separator should be modified too, the separator was still the same size ,therefore the new larger entrainment separator is need to be added for decreasing the vapor velocity and separating the mist or liquid .

The control system is very important to the evaporator because of the fluctuation of the interaction effect between the control parameter such as concentration , temperature ,vacuum and the level of the evaporator . If the temperature or vacuum is not met the specification ,it cause the concentration of the crude glycerine output to be low (less than 80 % glycerol) . If the level is too high ,the vacuum control system may be failed because the reflex of the level control that use the pressure difference between the solution and void at the top of the separator .

In this thesis , an improved evaporator can significantly reduce the glycerine loss because of the proper vapor-liquid separator and the good control system .So, the way to control the glycerine loss is to maintain the control system and observe the unusual things that cause the problem and remove them before making a serious problem.

Finally, the evaporator that be modified is only the first step to get rid of the glycerine loss problem but the second should be improved is to take care about the energy that used directly to the heat exchanger of the evaporator .