

ASSIGNMENT 4

CHE 5480

DUE: Before Spring Break. Send through e-mail. Include the simulation file and a narrative explaining what was done and how.

Exercise 1: Set up an Amine treating unit for capturing CO₂ from Flue gas.

Exercise 2: Set up a simulation of an LNG process. Suggest changes to improve it.

Debora: APCI- Optimize the gas composition, Temperature, pressures and loads

Quang: DMR- Optimize the gas composition

Aravinda and Andy: Linde and Conoco Phillips- Optimize temperatures and loads. Any other choice of fluids?

Discuss flexibility of the designs to load and change of gas composition.

Exercise 3:

Use the attached Gas plant simulation (with optimization) as starting basis to:

- All (Together) Discuss heat integration options of the basic case (that is changing the heat recovery scheme provided). Using pinch analysis is OK.

- Andy: Investigate adding additional pumparounds, changing trays that are used and using the alternative heat recovery proposed.

Graduate Students: explore how good other options are- Use the new heat recovery scheme and pumparounds location suggestions coming from Andy's work (if provided in time).

Debora: OHR+CRR

Quang: GAS separation + LNG production (Use DMR as developed before)

Aravinda: RSVE