

March 26, 2010
2nd Annual Central Valley Chemical Safety Day
Tulare International Agri-Center

Basics of Refrigeration Workshop

Challenge to all Operators-Old and New

(Short list of things you need to be able to know and do. Courtesy of Russ Ramos)

- #1: **You should be able to draw a sketch of your HPR** and accurately locate and describe all the piping connections. This includes being able to locate the King Valve on the sketch and all the valves immediately upstream and downstream of it.
- #2: You should be able to tell me “**how close to perfect**” you can operate your system in regards to head pressure and non-condensables. In other words how close can you get your actual system head pressure to the pressure that corresponds to your actual system condensing temperature.
- #3: **You should be able to draw your entire system** (in a block flow diagram format) and represent every compressor, condenser, metering device, and evaporator (with vessels and pressure regulators if present) on the main system flow. In other words draw the correct flow of liquid refrigerant from the HPR (or CPR) through every device out to every evaporator and bring the vapor back to the condensers through every device on the main system piping. You should be able to draw and explain this system to all of the top management and engineers in your organization, with no notes, explaining all the pressures and temperatures, the condition and relative speed of flow of the refrigerant in every component. (Initially you don't need to draw the “auxiliary” systems like defrost piping, purgers, oil pots, emergency diffusion systems, liquid transfer systems, etc. But when you know where they tie into the main system piping, and you can draw them too...WOW!
- #4: **You must be able to explain all these things in great detail.** (My philosophy is this...if you can't explain it, then you don't know it well enough yet. Keep practicing).
- #5: You need to have the attitude that **Learning Is Fun.**

If you can accomplish this grasshopper, then you will be in a very elite group of operators.