HEART EXCHANGER

PROCESS DESCRIPTION:

The objective in training a student on this system is to explore the control system tied up to non-linear process behavior.
In the temperature & pressure control module, temperature controller regulates the pressure of steam entering the heat exchanger. The steam pressure on shell side is non-linear function of temperature on shell side into heat exchanger.

HEAT EXCHANGER PROCESS DESCRIPTION:

The non-linearity in the relation between steam pressure on shell side and shell side temperature comes into the existence because the temperature of the liquid out rises. It sends a remote signal to the pressure controller who in the turn shall reduce the steam flow to the exchanger and gradually the temperature of cold liquid out will decrease.

SIGNIFICANT OPERATING VARIABLES:

There are two controllers acting as a master and slave and controlling two significant operating variables viz. temperature of cold liquid outlet and pressure of the steam. The temperature controller regulates the pressure of the steam entering the heat exchanger.