

Temperature Control For Chemical Processing

These temperature control units, (TCU's) were built for a Chemical company, located in Canada, that manufactures dyes for the textile industry. The TCUs were designed to provide heating and cooling to the customer's half piped stainless steel and glass lined reactors. Their previous process included operating manual valves to the desired heating or cooling rates for the many batches they produced. The customer wanted individual TCUs that would allow automation of their process and provide tight temperature control.

The existing system already included two Fulton FT-0600C thermal oil heaters, pumps and DA Tank. Heating was accomplished by a direct bleed in of the thermal fluid out of the central loop. Cooling was accomplished indirectly using



a shell & tube heat exchanger with Chilled water as the cooling utility. The heat exchangers were built to ASME and provided with CRN approval. Each TCU was also provided with individual Dean's air cooled circulation pumps.

All skid mounted components were wired to a junction box that housed Allen Bradley Flex I/O modules that communicate to a central PLC panel using ControlNet network. The Allen Bradley ControlLogix PLC was provided in a separate enclosure and included a color operator interface. The PLC is capable of controlling the first two TCU's as well as having space for future expansion.