

are rejoined into the cooling water return header and are discharged from the system at Terminal Point H. The overall cooling water pressure drop should be about 20 psig (measured by difference between PI-17A and PI-17F).

A portion of the cooling water out of the Main Condenser is redirected to Terminal Point K. The cooling water is then pumped by the liquor cooler pump through the vortex meter, FT-21. FT-21 sends a signal to the flow controller, FIC-21, which modulates FCV-21 to maintain flow at the setpoint (normally 500 gpm).

Cooling water re-enters the system at Terminal Point Q and flows through one of the feed heat exchangers. This plate heat exchanger cools the incoming feed and heats the cooling water. Performance data can be found in the component data section. Hot cooling water finally leaves the system at Terminal Point R.

K. SEAL WATER - (Orange)

A portion of the acid condensate is used for seal water for the liquid ring vacuum pump and centrifugal pumps. Seal water is taken from the discharge of the acid condensate pump and flows through the vortex meter, FT-16, which measures the flow. FT-16 sends a signal to a direct-acting controller, FIC-16 which modulates FCV-16 to maintain the seal water flow to the vacuum pump (set at 90 gpm or 50 gpm depending on the operating conditions).

The seal water flows through two plate heat exchangers, the Seal Water Heat Exchanger and the Seal Water Trim Cooler to cool it before it enters the vacuum pump. The seal water is then discharged into the separator tank along with the compressed noncondensable gases.

Seal water to the centrifugal pumps flows from a header off the discharge of the seal water pump to each individual pump seal through a rotameter with a seal trim valve. Seal water to the recirc and product pumps (with double mechanical seals) flows back from the seals through another rotameter back to the separator tank. The second rotameter is to ensure that seal water is not leaking into the liquor.

The combined seal water is pumped from the Separator Tank through LCV-15, the Seal Water Heat Exchanger, and is returned to the wash line to the feed heat exchangers. Level is maintained in the tank as in Loop 20. If a low low level is reached (LSLL-15), clean water is admitted through Terminal Point I to fill the tank until LSHH-15 is reached.