

screens. These screens are designed with a fixed cylindrical screen and a moving rotor. Pulp is fed tangentially into the upper section of the screen where heavy rejects are initially removed. The inlet flow moves downwards into the narrow space between the rotor and the screen basket, and a pressure difference over the screen basket created by the rotating rotor forces the accepts through the basket. When proceeding downwards, the reject consistency increases while the accepts consistency decreases compared to the inlet flow. The rejects end up in the reject space in the bottom section of the screen where they are diluted with the reject dilution from the screen dilution pump to improve reject flow control.

FT4 Process Description **Primary Screen**

The primary stage consists of a MODUScreen FT4 pressure screen. The pulp is fed to the primary stage at a consistency of approximately 2.9% with the Primary Screen Feed Pump. The pulp to the primary screen is the combined flow from the Primary Pressure Screen Feed Tank plus the accepts flow from the Secondary Screen. The consistency of the pulp fed to the primary screen is controlled

LR-I Rotor



to an operator set point by NIC298, which regulates the position of NV298, the dilution valve to the Primary Screen Feed Pump suction.

Normal feed at design production rate is approximately 557 ADST/D (2,880 gpm) at 2.9% consistency. This includes the 97 ADST/D of secondary screen accepts. The accepts from the primary screen flow to the existing Brown Stock Decker. At current design production rates, the accepts will be approximately 457 ADST/D at 2.8% consistency, for a normal accepts flow of about 2,480 gpm.

The pulp production to the primary stage is regulated by FIC300, which is also the master flow controller for the fine screening portion of the screen room. When in ratio control, all other flows are governed by the master flow controller. The setpoint of the reject flow controller is ratioed to the FT300 signal.

The normal primary screen reject rate is approximately 13-15% by mass. The reject dilution to the primary screen is controlled with FIC303. The setpoints are in ratio to FIC300.

The primary screen is equipped with pressure differential measurement PDT301 which will regulate the accept valve for the primary screen on a high DP condition. The normal operating DP across a screen is 3-5 psi. The output of the DP controller and its

corresponding feed flow controller are compared through a low-select function. If the DP increases for any reason the DP controller output decreases. When the output becomes lower than the output of the corresponding feed flow controller, the DP controller starts to close back the feed/accept valve. This lowers the feed to the screen and reduces the DP. If the DP continues to rise, high alarm PDSH301 is activated at 7 psi. At 8.5 psi, high high alarm PDSHH301 is activated and the override sequence is initiated.

Primary Screen Override Sequence

The override sequence first takes the rejects flow controller FFIC302 out of ratio and holds its setpoint constant. The sequence then puts the master feed controller FIC300 in manual and ramps it down at a rate of 1.5% per second until the primary screen DP drops below the override setpoint. This will cause all other loops ratioed to FIC300 to ramp down as well, reducing the production rate of the entire screenroom. If the DP returns to normal the master feed controller is transferred back to automatic mode but remains at the lower production rate. The rejects flow controller is transferred back to ratio control and ramps to the appropriate setpoint for the lower production rate. This puts the screenroom in normal operation at a reduced production rate. It is the responsibility of the operator to increase production to the former level.