

P&ID Description — V-101 Three-Phase Separator

Feed Stream (S-101)

A multiphase feed enters separator **V-101** through inlet stream **S-101**.

The inlet is equipped with isolation valve **XV-101**, which is solenoid-operated and closes on shutdown or fault.

Gas Phase Control

Gas exits the top of the separator via stream **S-102**.

Separator pressure is measured by **PT-101** and controlled by **PIC-101**, which regulates pressure control valve **PCV-101** to maintain the operating pressure setpoint.

The high pressure and high-high pressure alarms are generated by **PT-101**.

The high-pressure alarm initiates shutdown during normal operation, while the high-high pressure alarm provides protective shutdown during startup and running states.

Water Interface Control

The water phase is withdrawn through stream **S-103**.

Interface level is measured by **LT-101A** and controlled by **LIC-101A**, which regulates water level control valve **LCV-101A**.

Oil Level Control

The oil phase is withdrawn through stream **S-104**.

Oil level is measured by **LT-101B** and controlled by **LIC-101B**, which regulates oil level control valve **LCV-101B** to maintain the oil level within operating limits.

A low oil level alarm is provided for operator awareness.

Temperature Monitoring

Separator temperature is monitored by **TI-101** for indication purposes only. No temperature control is implemented.