



Primary Instrumentation

Section 10.1 Reactor Coolant Instrumentation
Section 10.2 PZR Pressure Control

Objective 10.1.1

Describe how loop average temperature (T_{AVG}) and temperature difference (ΔT) are derived from the coolant loop narrow-range resistance temperature detector (RTD) outputs, and how these signals are used.

Objective 10.1.2

List the functions of the following temperature monitors:

- a. Reactor Coolant System (RCS) wide-range temperature.
- b. Pressurizer, surge line and spray line detectors.
- c. Safety and relief valve discharge line detectors.
- d. Pressurizer Relief Tank (PRT) detectors.
- e. Reactor vessel flange leak-off detector.

Objective 10.1.3

Explain how the RCS differential pressure (d/P) cells at RCS piping elbows are used to measure the RCS flow.

Objective 10.2.1

List and describe the purposes (bases) of the protective signals provided by the pressurizer pressure transmitters.

Objective 10.2.2

List and describe the purposes of the permissives and interlocks provided by the pressurizer pressure transmitters.

Objective 10.2.3

List in sequence the actions performed by the pressure control system during:

- A. A continuous pressure increase above the normal pressure setpoint (2235 psig).
- B. A continuous pressure decrease below 2235 psig.

Objective 10.2.4

Explain the effect of changing the pressure control setpoint on both control and protective functions.

Objective 10.2.5

List the inputs to the cold overpressure protection system and explain the operation of the system.

FIGURE 3.2-1 Reactor Coolant Loop Penetrations

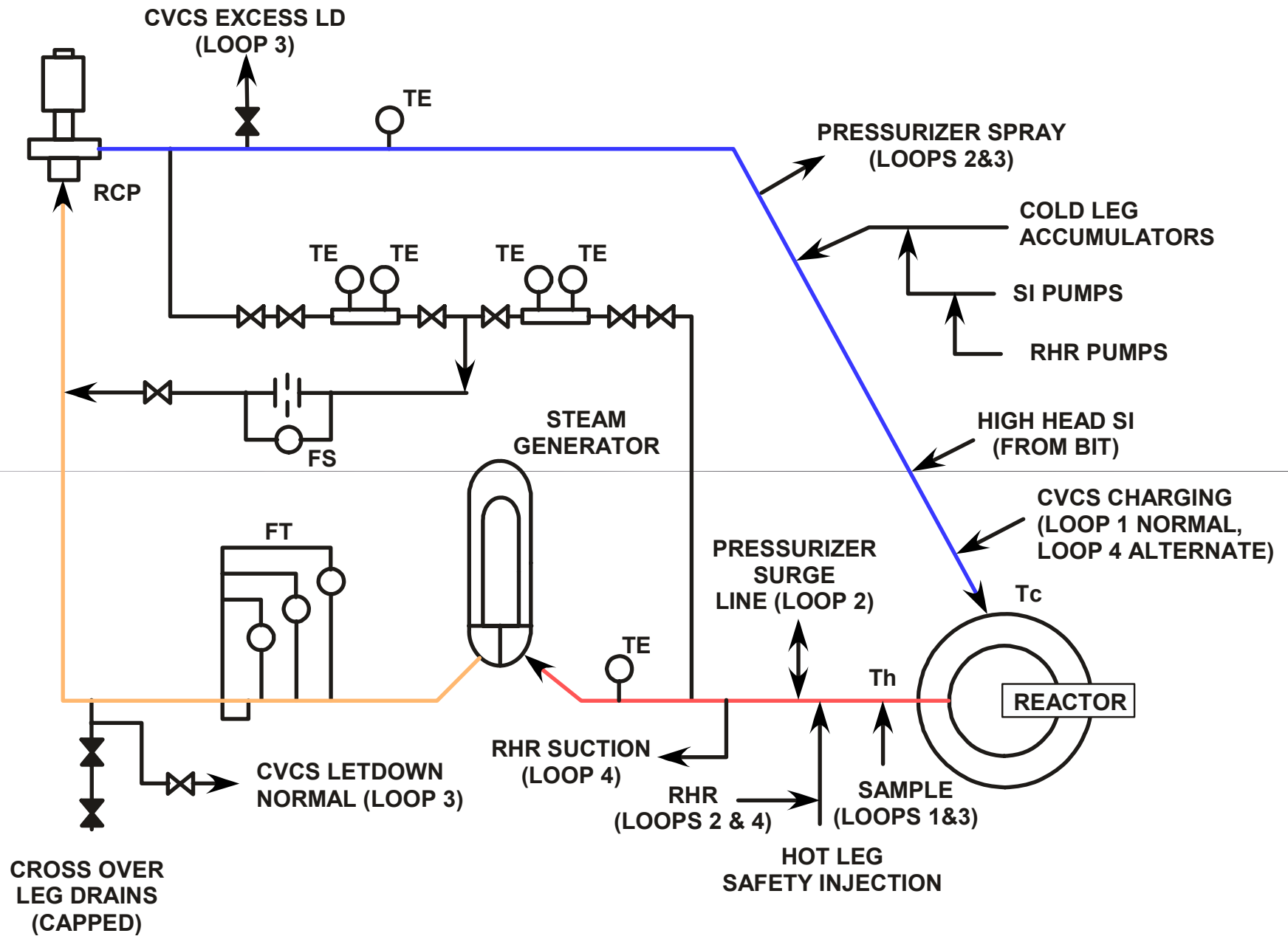
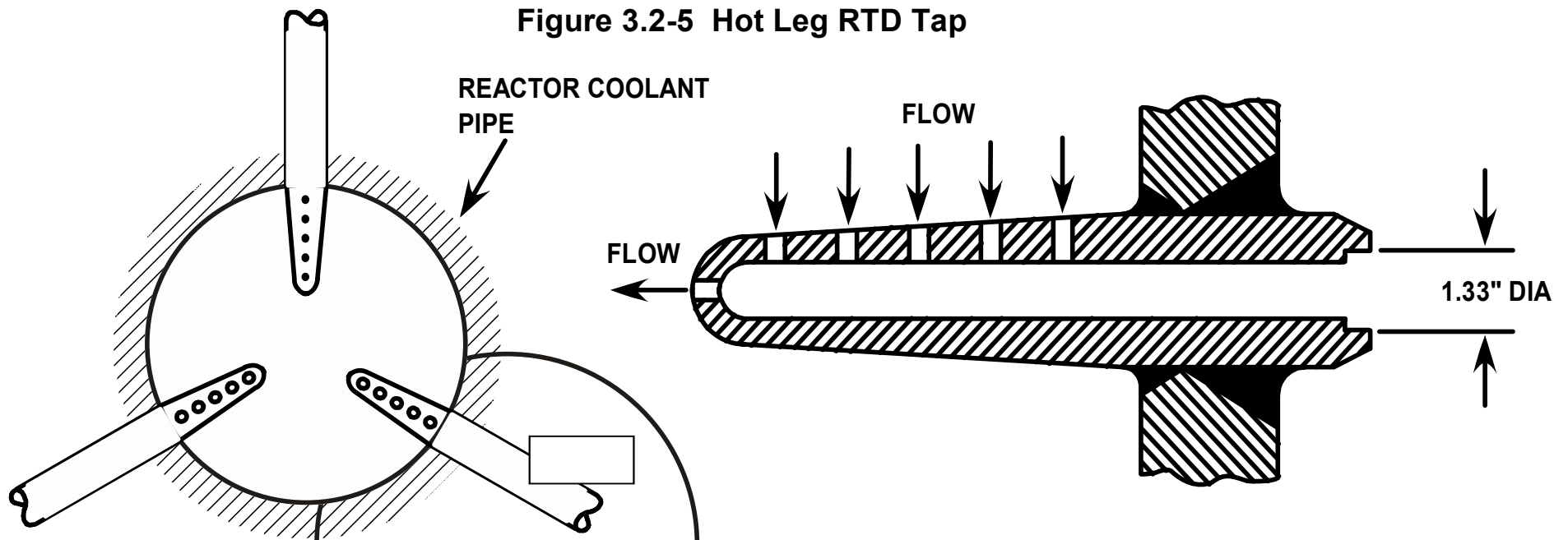
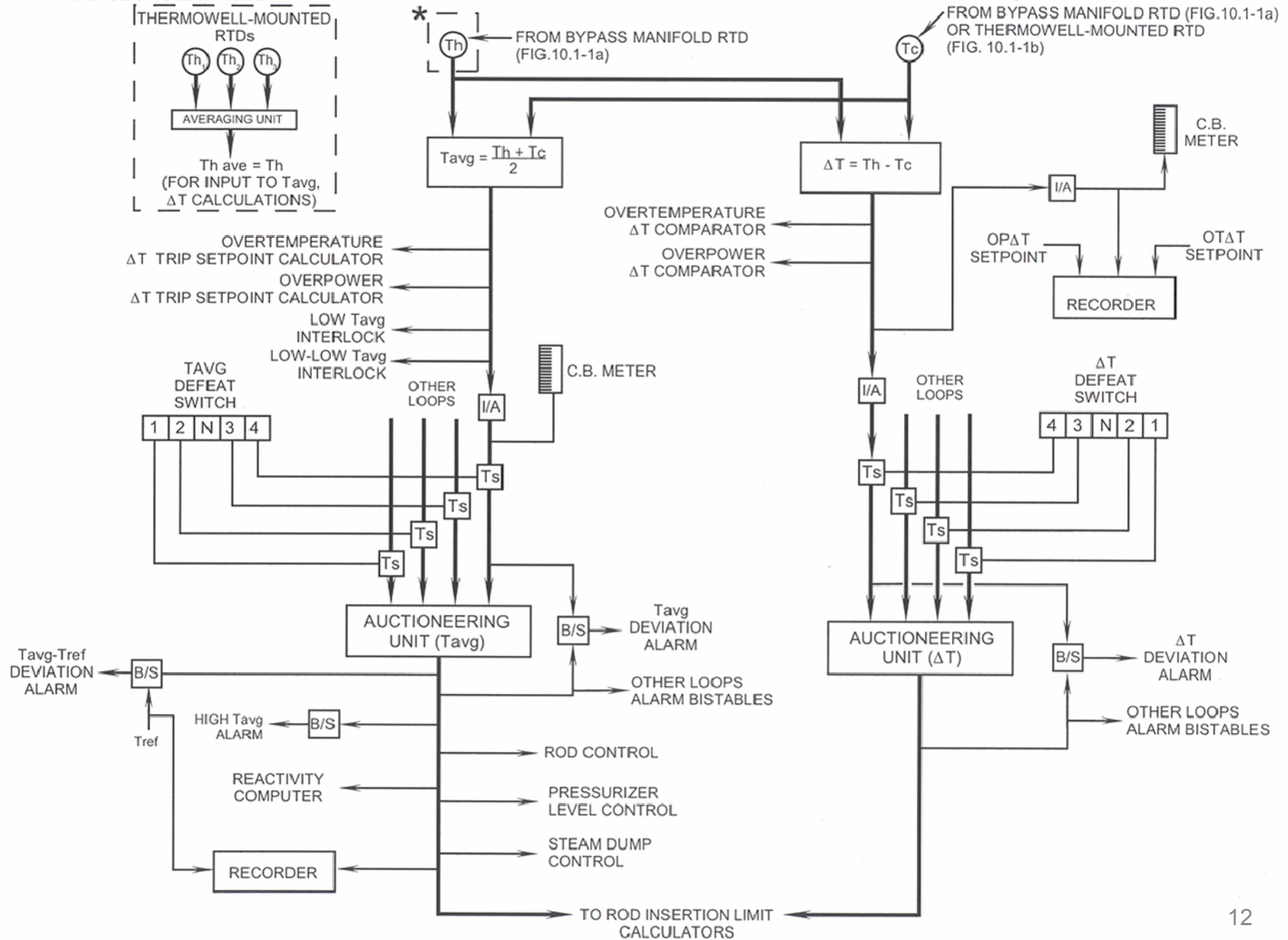
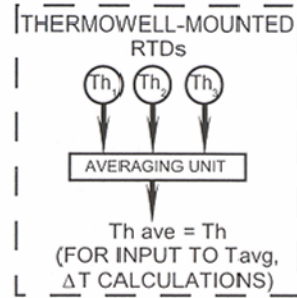
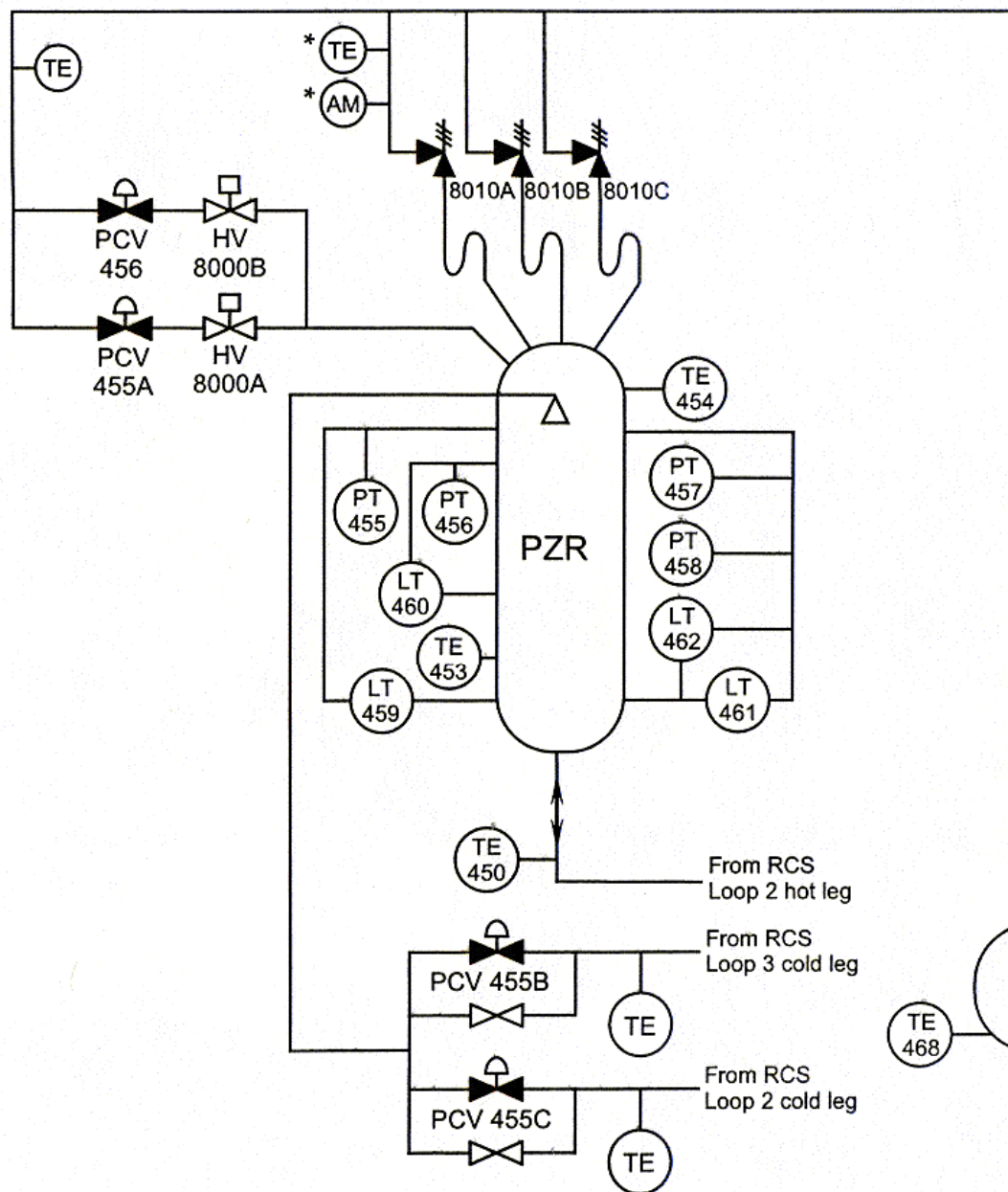


Figure 3.2-5 Hot Leg RTD Tap

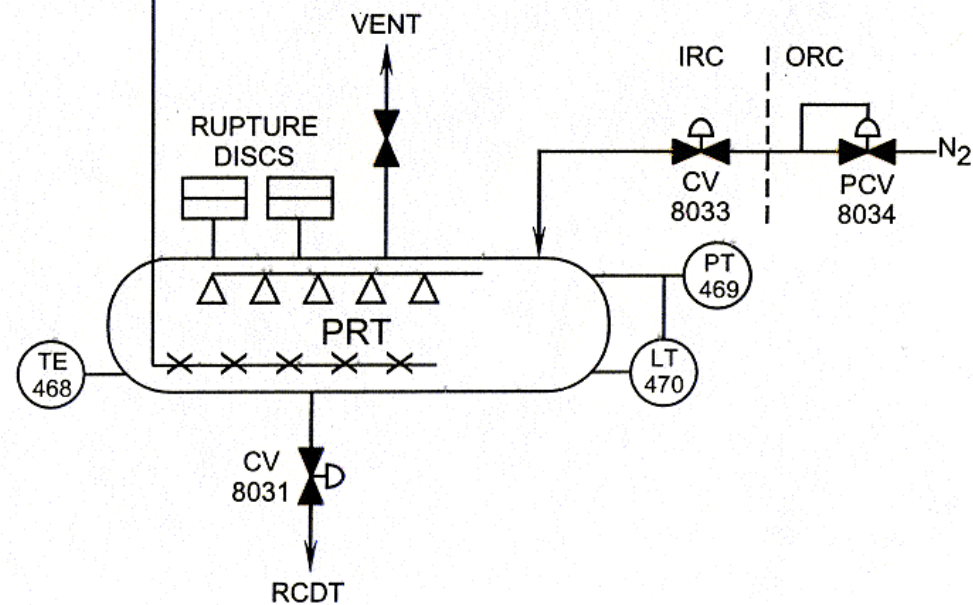


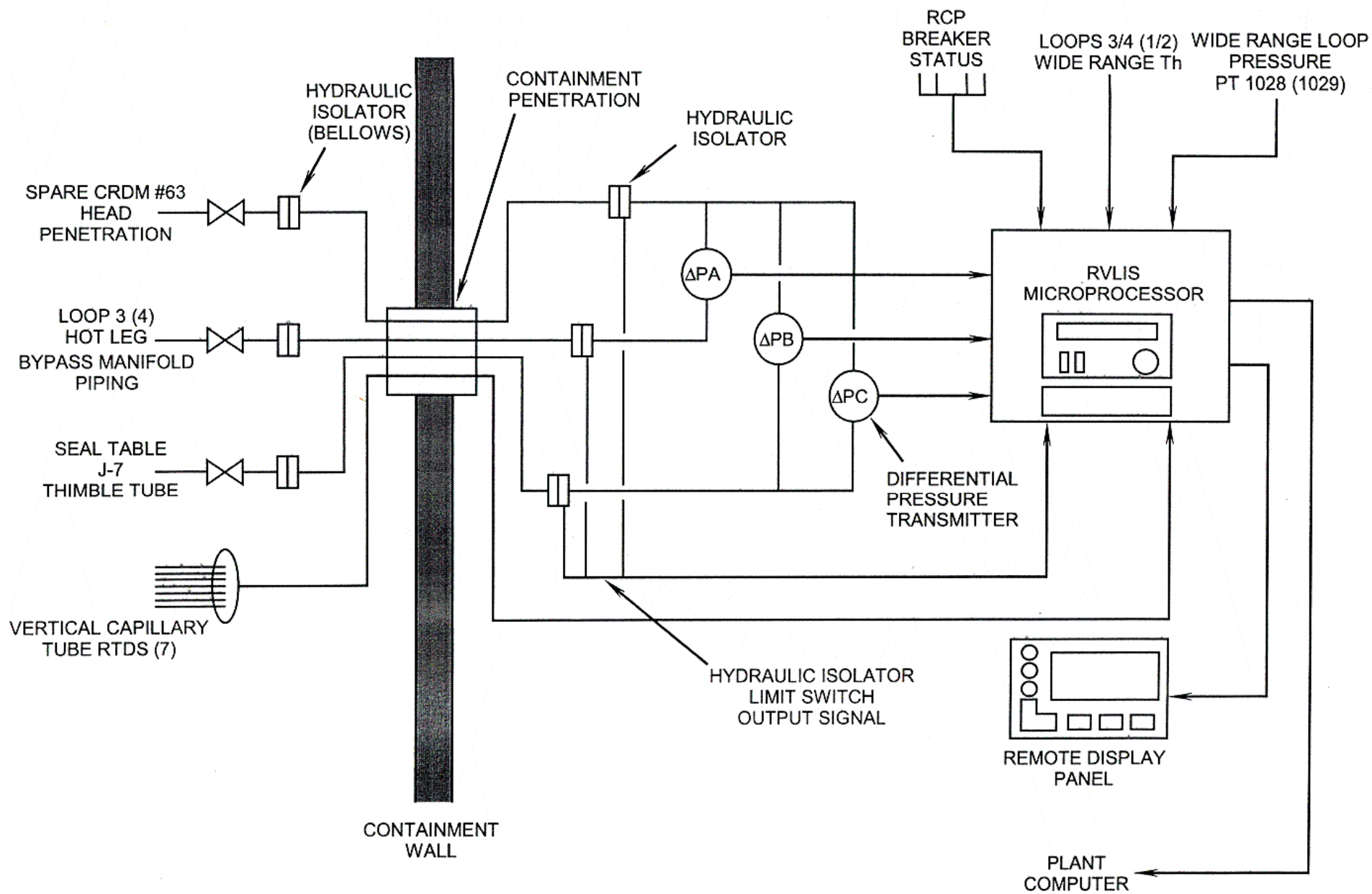
* IF NO BYPASS MANIFOLDS (FIG.10.1-1b),
REPLACE SINGLE T_h WITH:





* Individual TE and AM for each Safety Valve





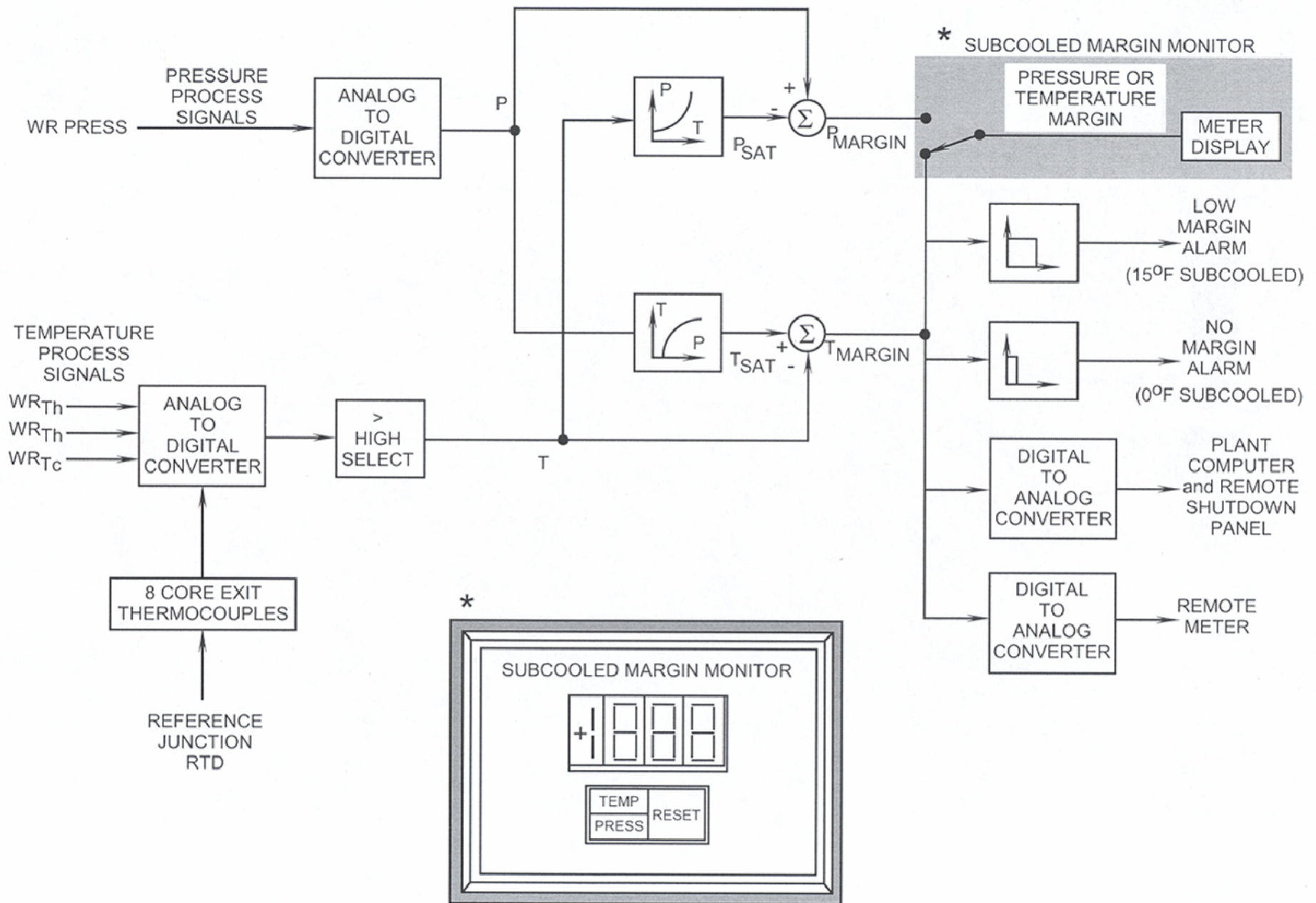
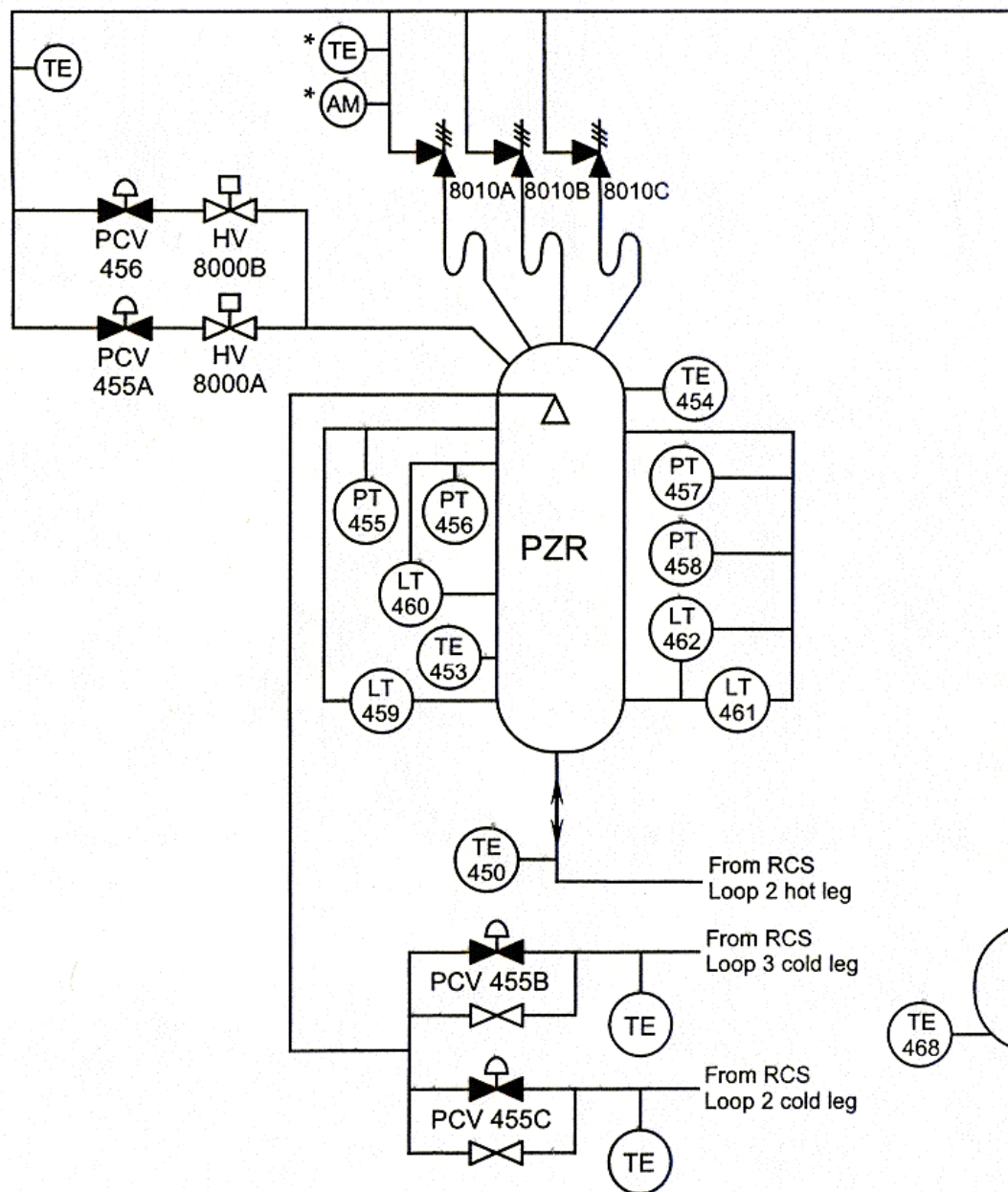
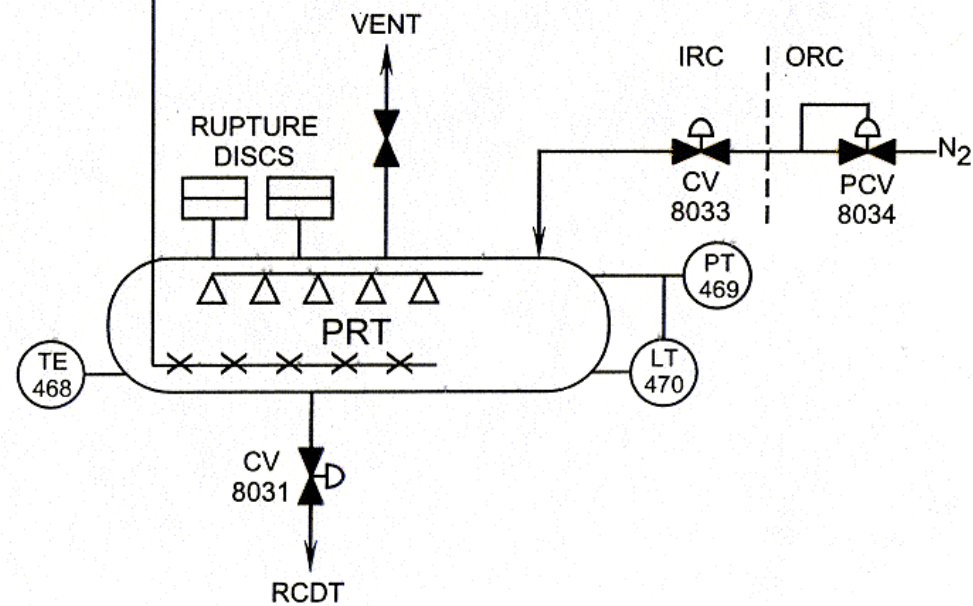


Fig. 10.1-6



* Individual TE and AM for each Safety Valve



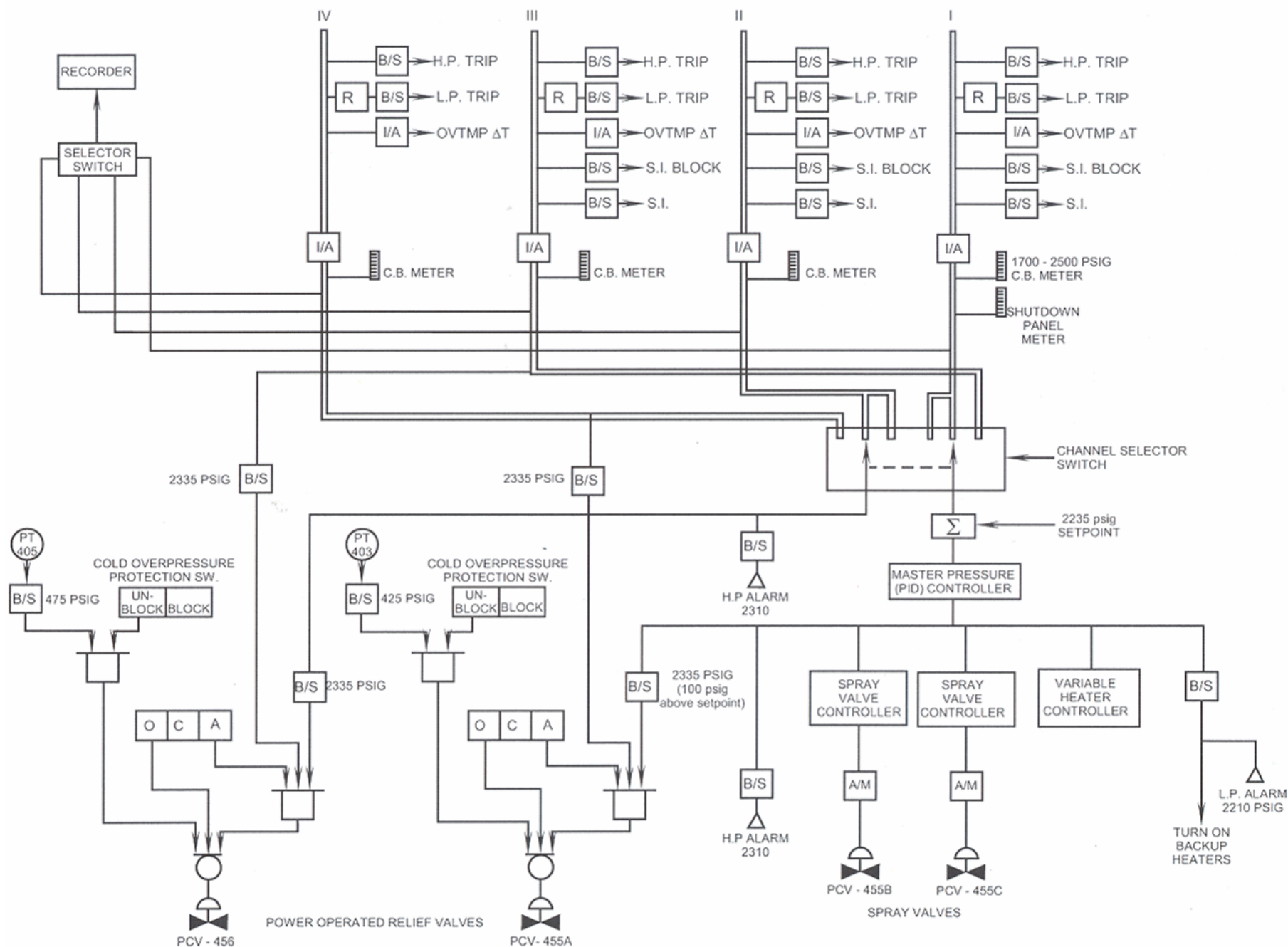


Fig. 10.2-3

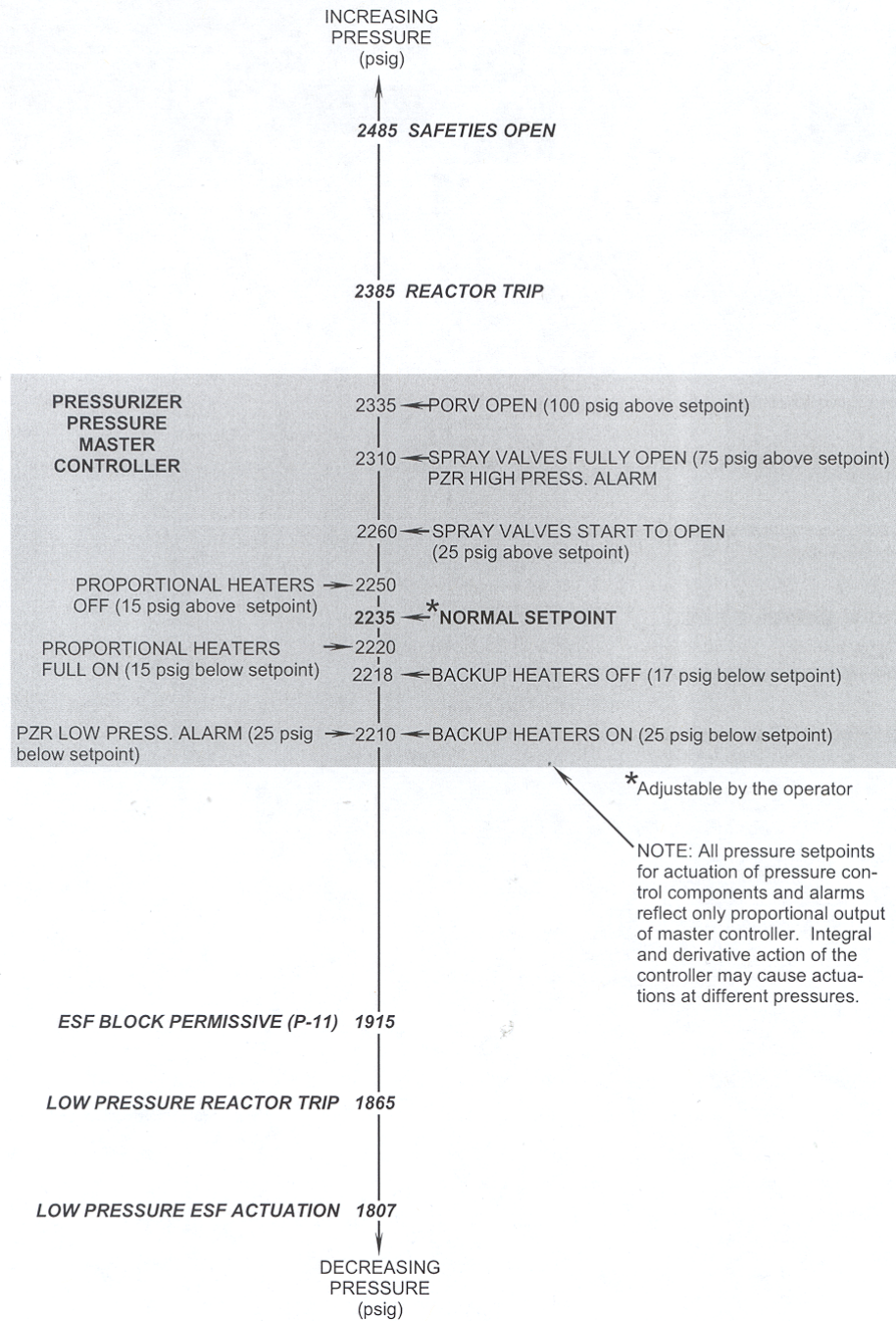


Fig. 3.1-7

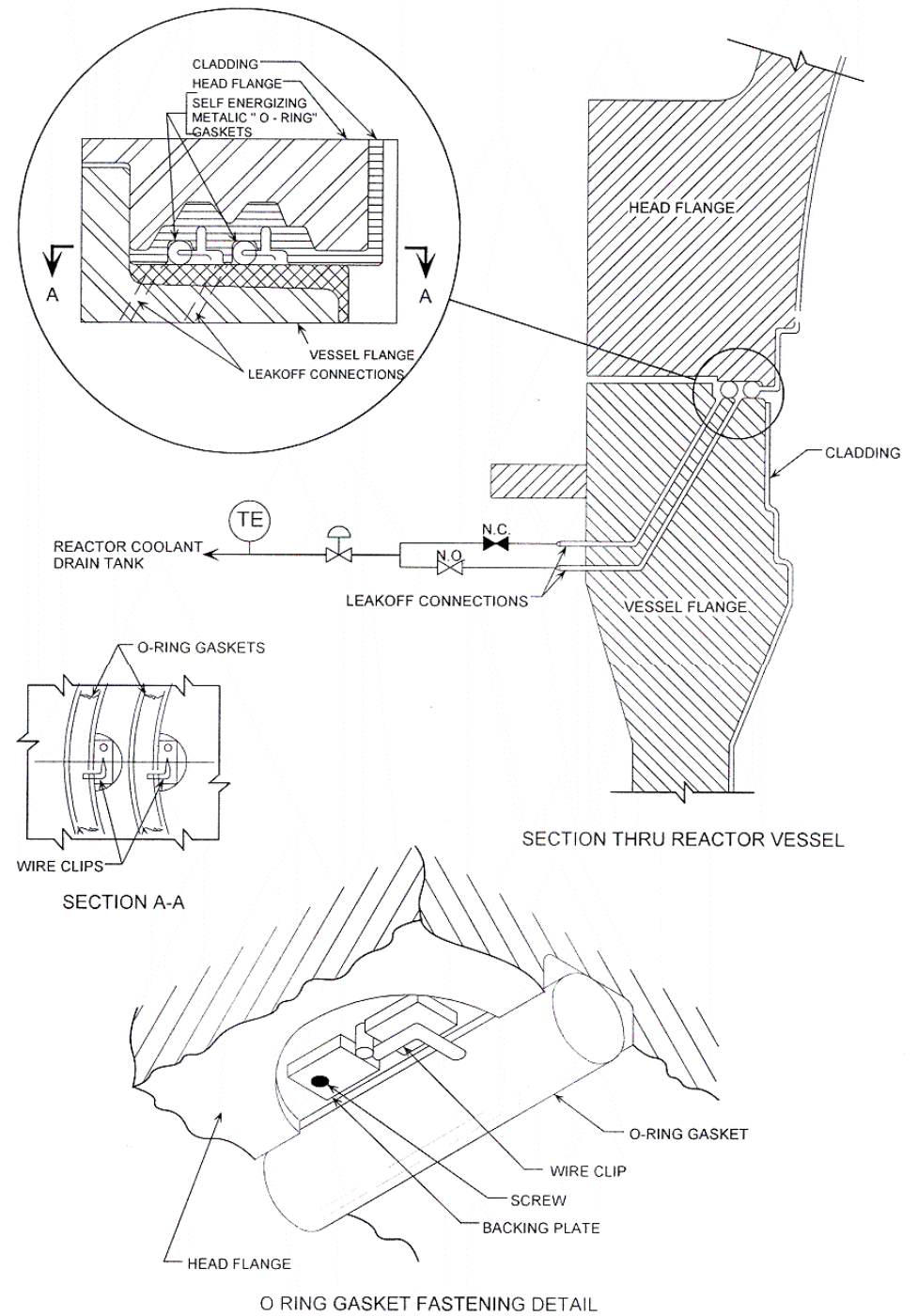


Fig. 8.4-1

