



Main & Auxiliary Steam Systems

Section 7.1

Objectives

1. State the purposes of the main and auxiliary steam systems.
2. Identify the portion of the Main Steam System that is Seismic Category I.
3. List the components and connections located in the Seismic Category I portion of the main steam system and explain the purpose of each.

Objectives

4. Explain how the main steam system design prevents the blowdown of more than one steam generator during a steam line rupture accident.
5. Describe the steam flowpaths for decay heat removal after a plant trip:
 - a. With offsite power available
 - b. Without offsite power available.

Objective 1

Main Steam System Purpose

1. To transfer steam from the steam generators to the turbine-generator and other secondary system components,
2. To provide overpressure protection for the steam generators, and
3. To provide diverse methods of decay heat removal.

The diagram illustrates the Main Steam System (MSS) configuration. A central vertical line represents the main steam supply. From this line, three horizontal branches extend to the left, labeled from top to bottom: STEAM DUMP SYSTEM, AIR EJECTORS, and GLAND STEAM SYSTEM. Three horizontal branches extend to the right, labeled from top to bottom: MSR "A" SECOND STAGE REHEAT, MSR "B" SECOND STAGE REHEAT, and FEED PUMP TURBINES. Each branch is represented by a horizontal line with a small arrowhead pointing towards the central vertical line, indicating the direction of steam flow.

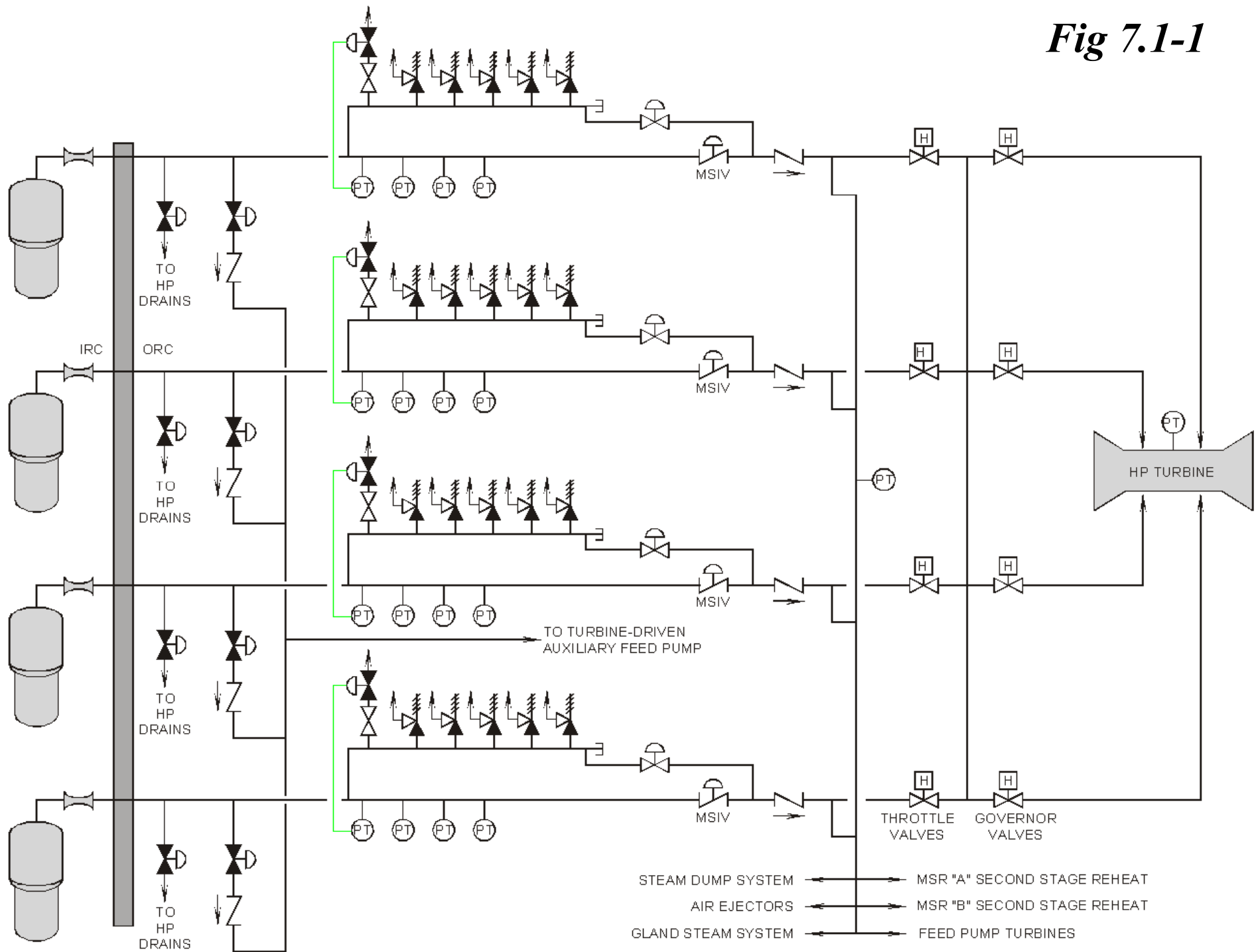
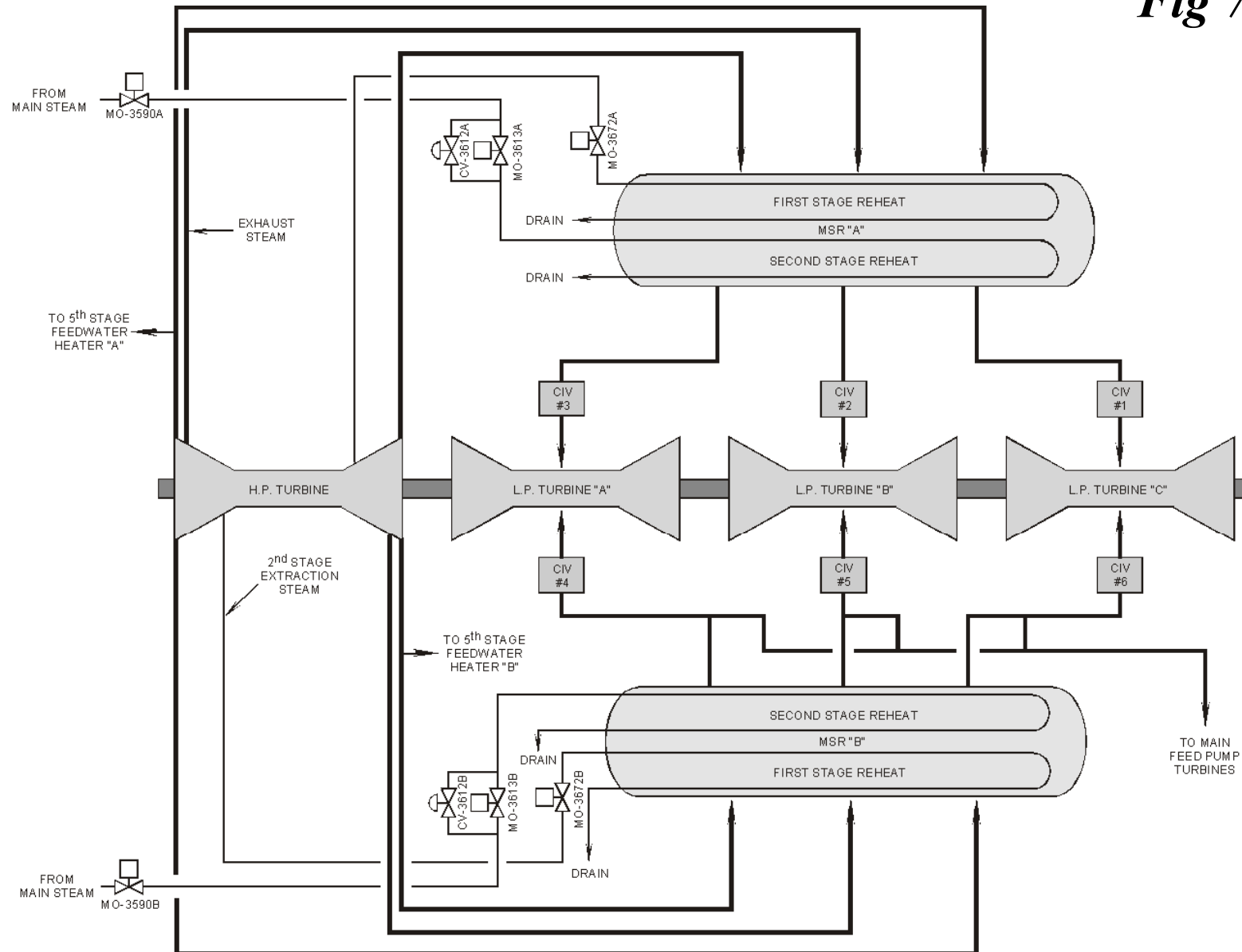
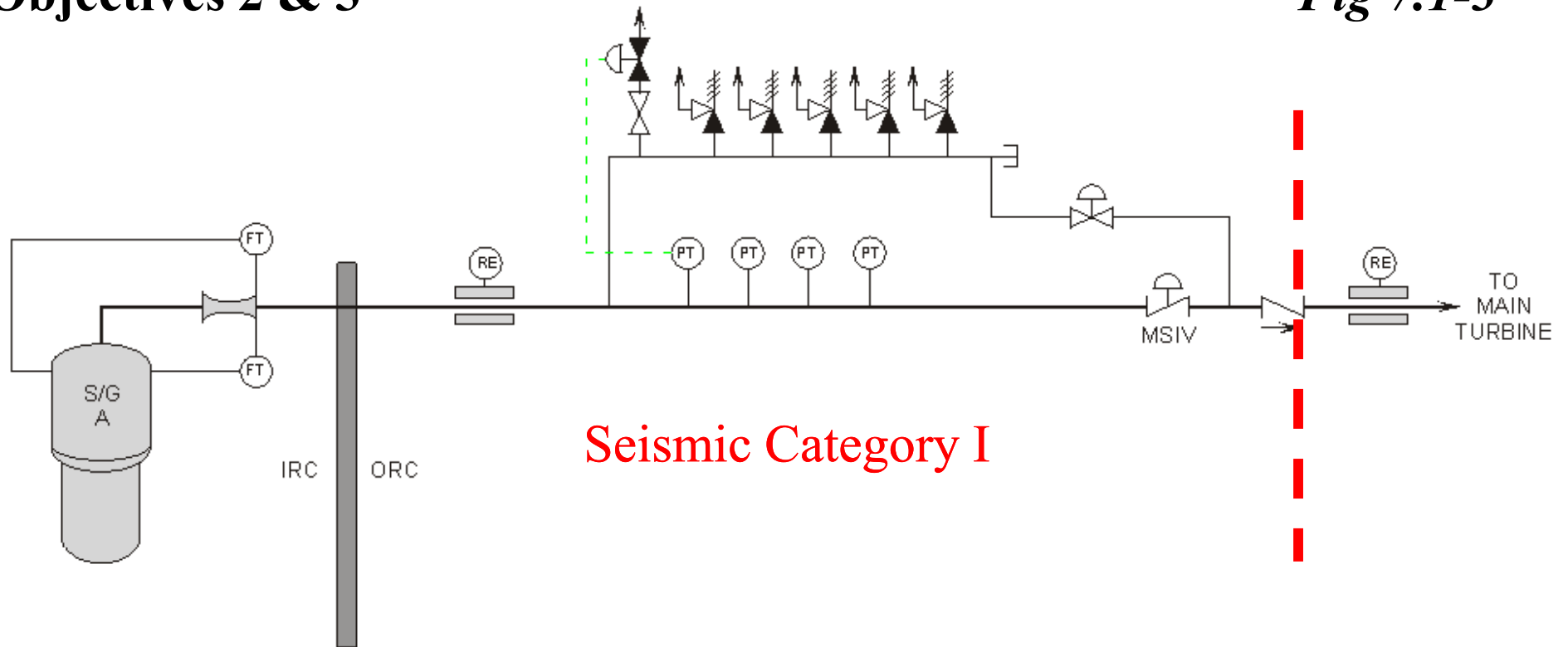


Fig 7.1-2



Objectives 2 & 3

Fig 7.1-3



NOTE: ONLY ONE STEAM LINE IS SHOWN.
INSTRUMENTATION FOR THE OTHER
STEAM GENERATORS IS THE SAME
AS SHOWN ABOVE



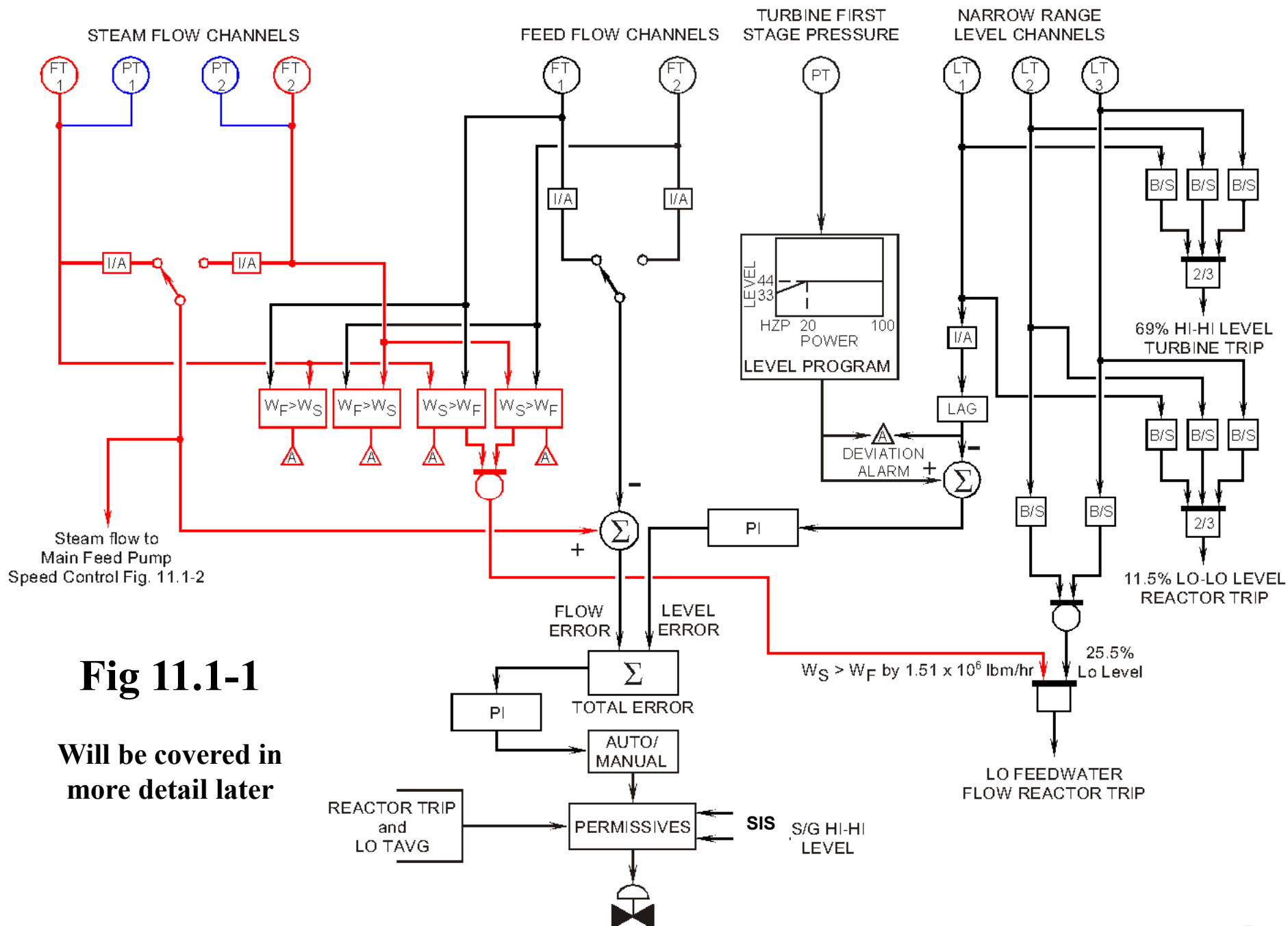


Fig 11.1-1

Will be covered in more detail later



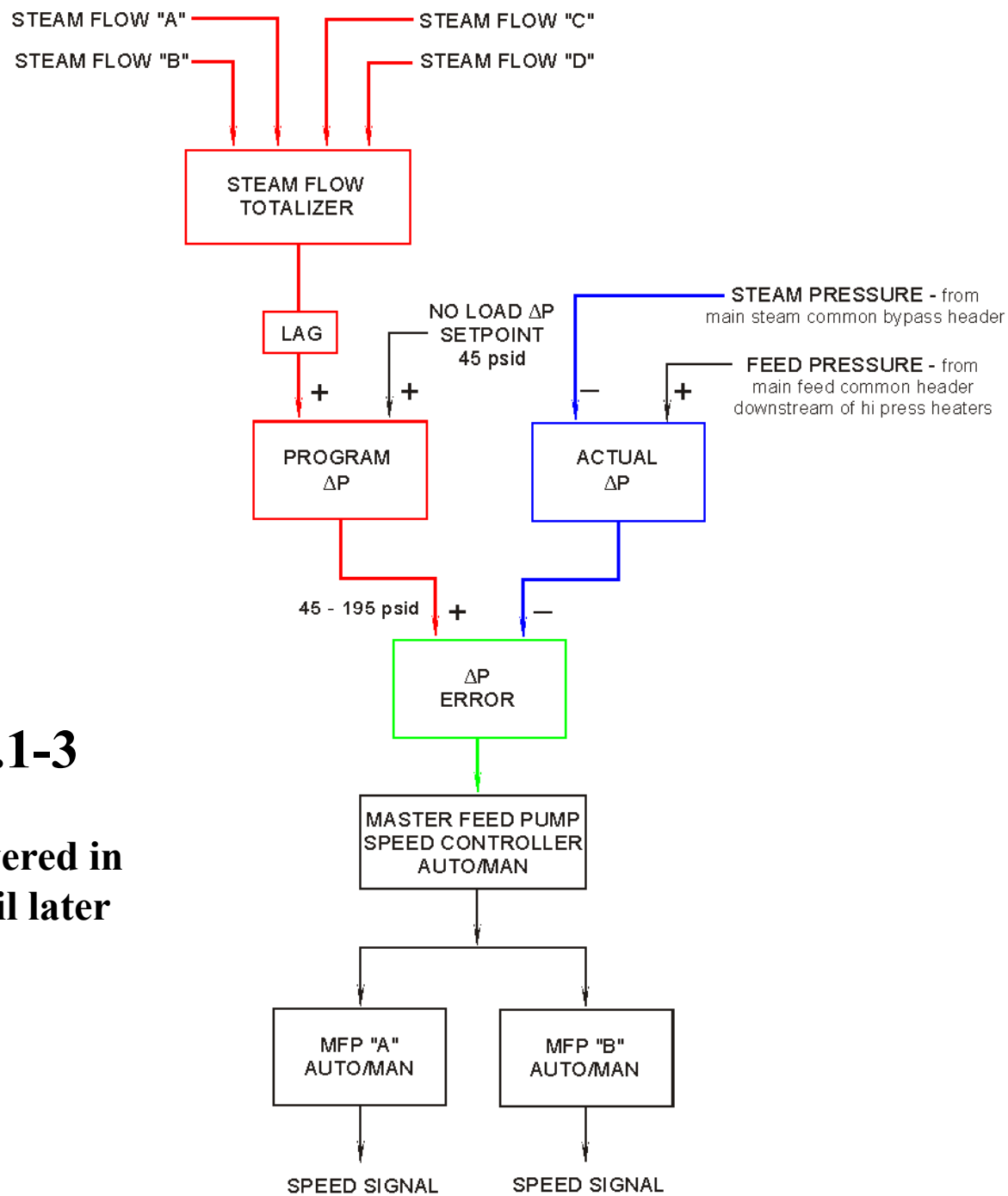


Fig 11.1-3

Will be covered in more detail later



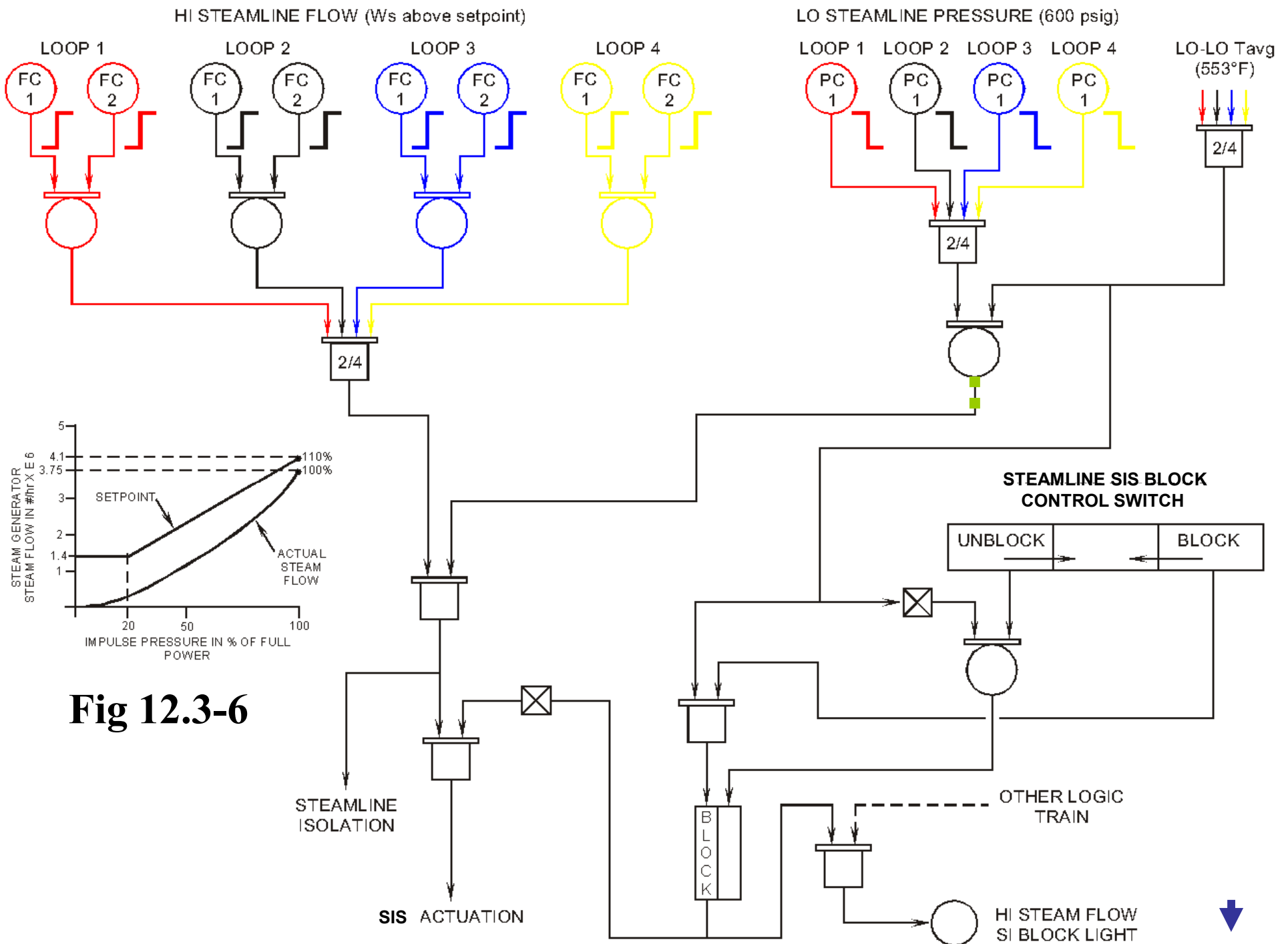


Fig 12.3-6



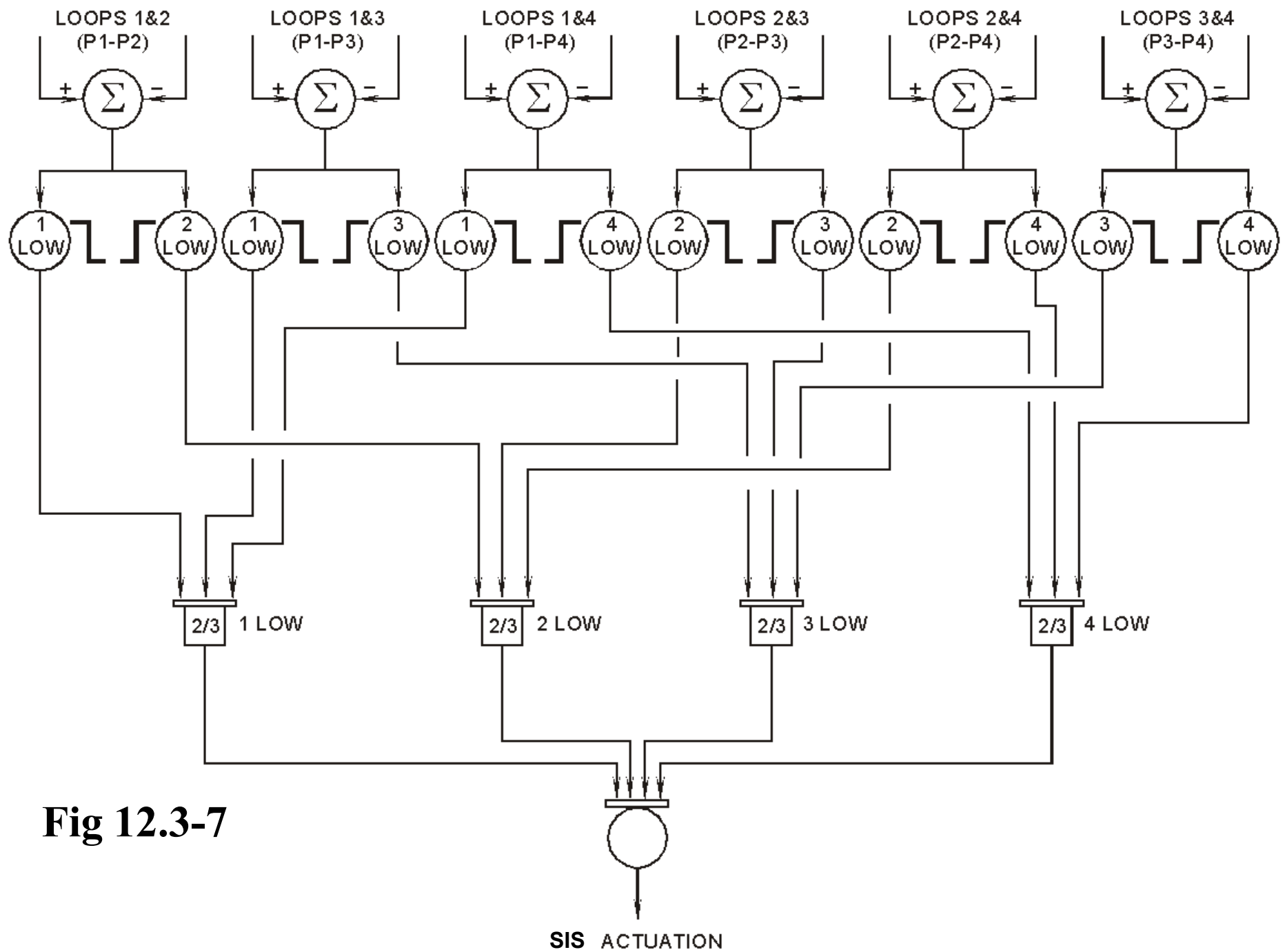
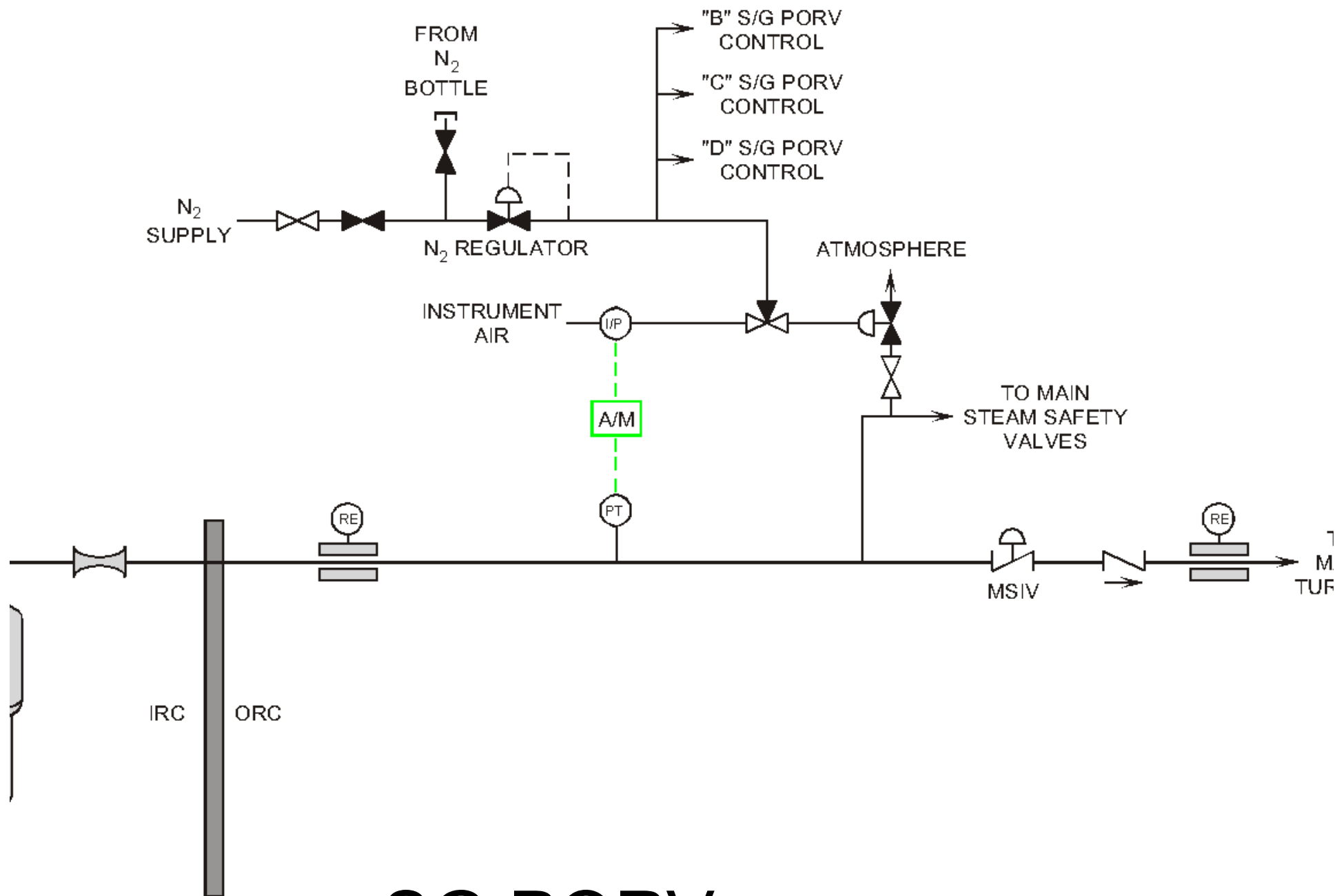
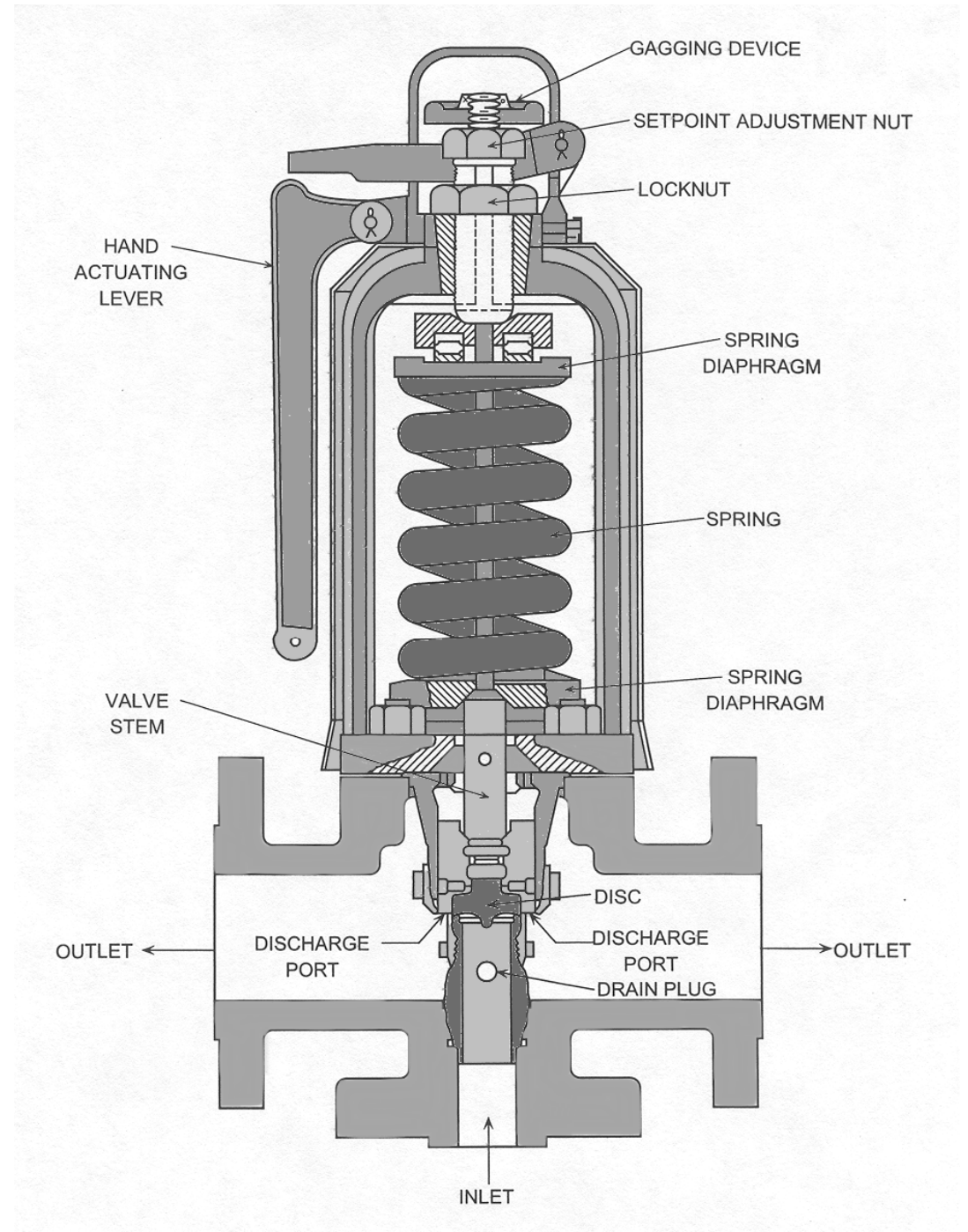


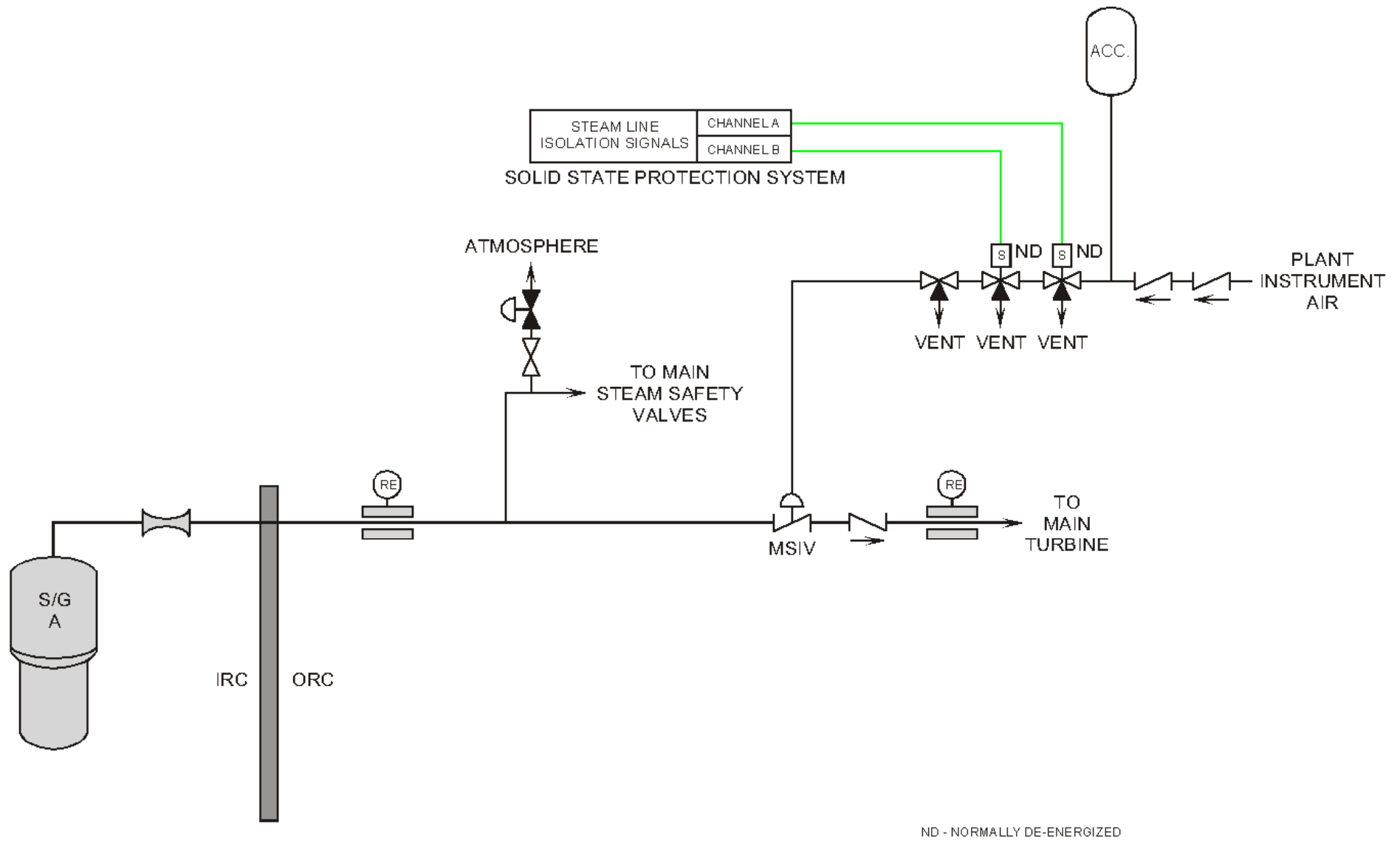
Fig 12.3-7



SG PORV Fig 7.1-4

Fig 7.1-5





Main Steam Isolation Valve Fig 7.1-7

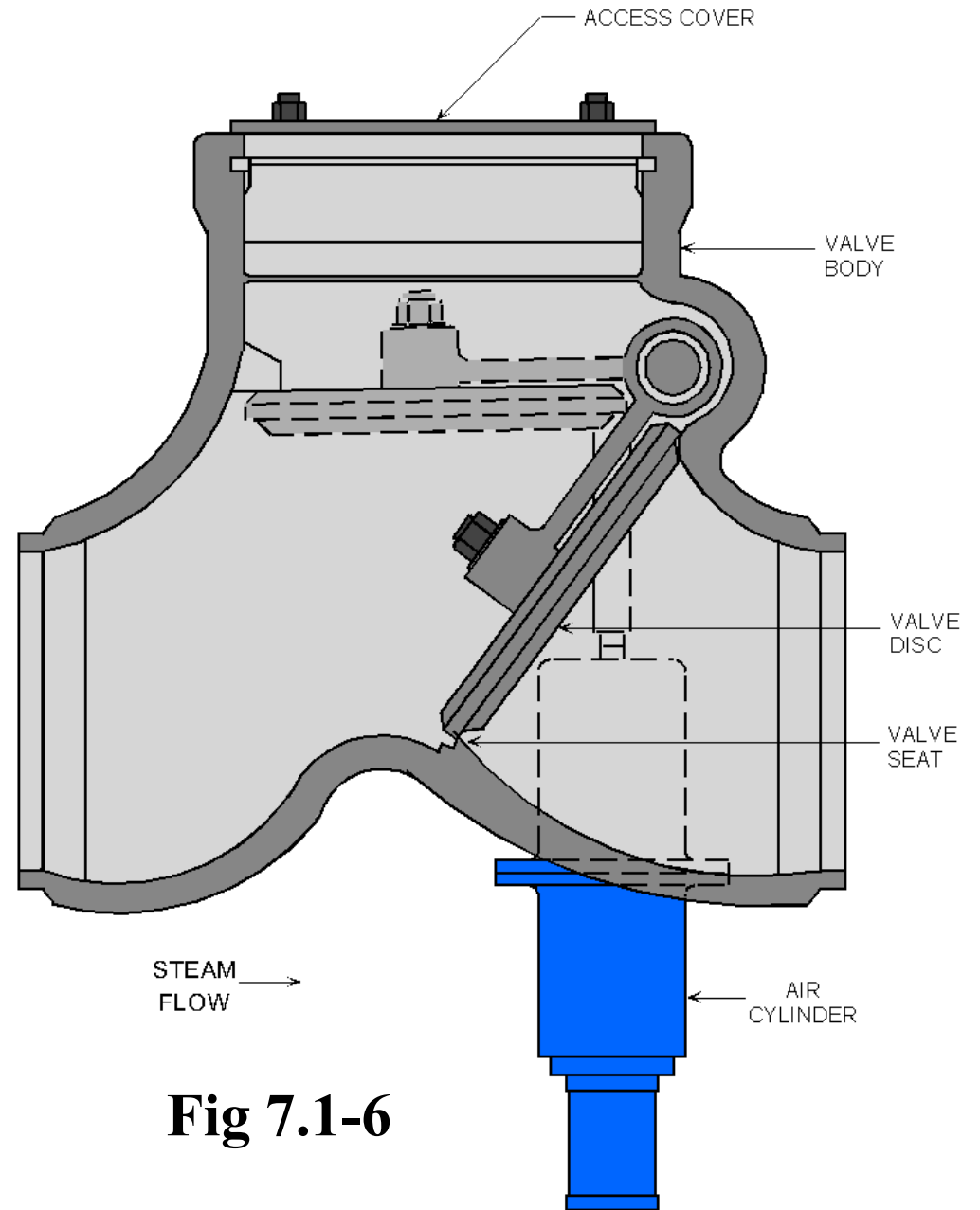
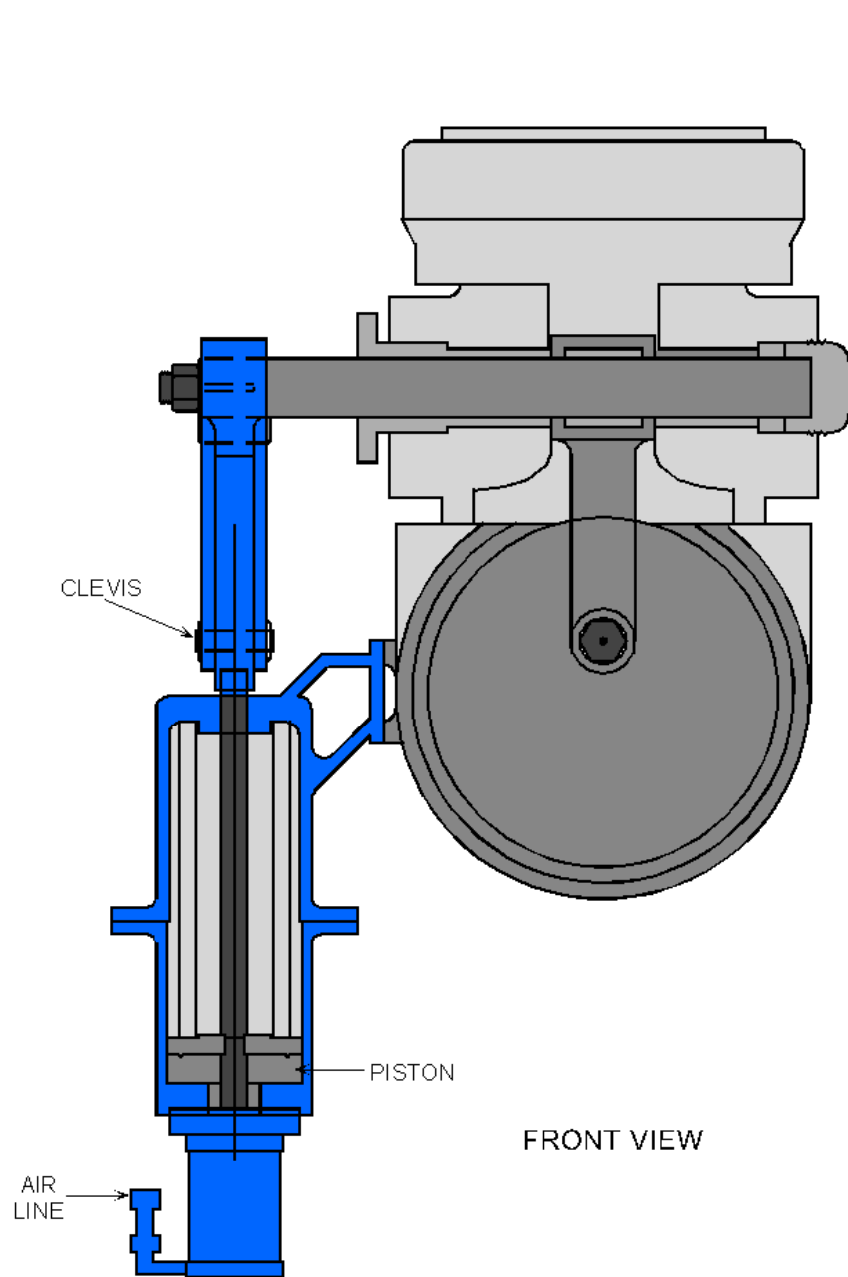


Fig 7.1-6

Objective 4



Objective 4

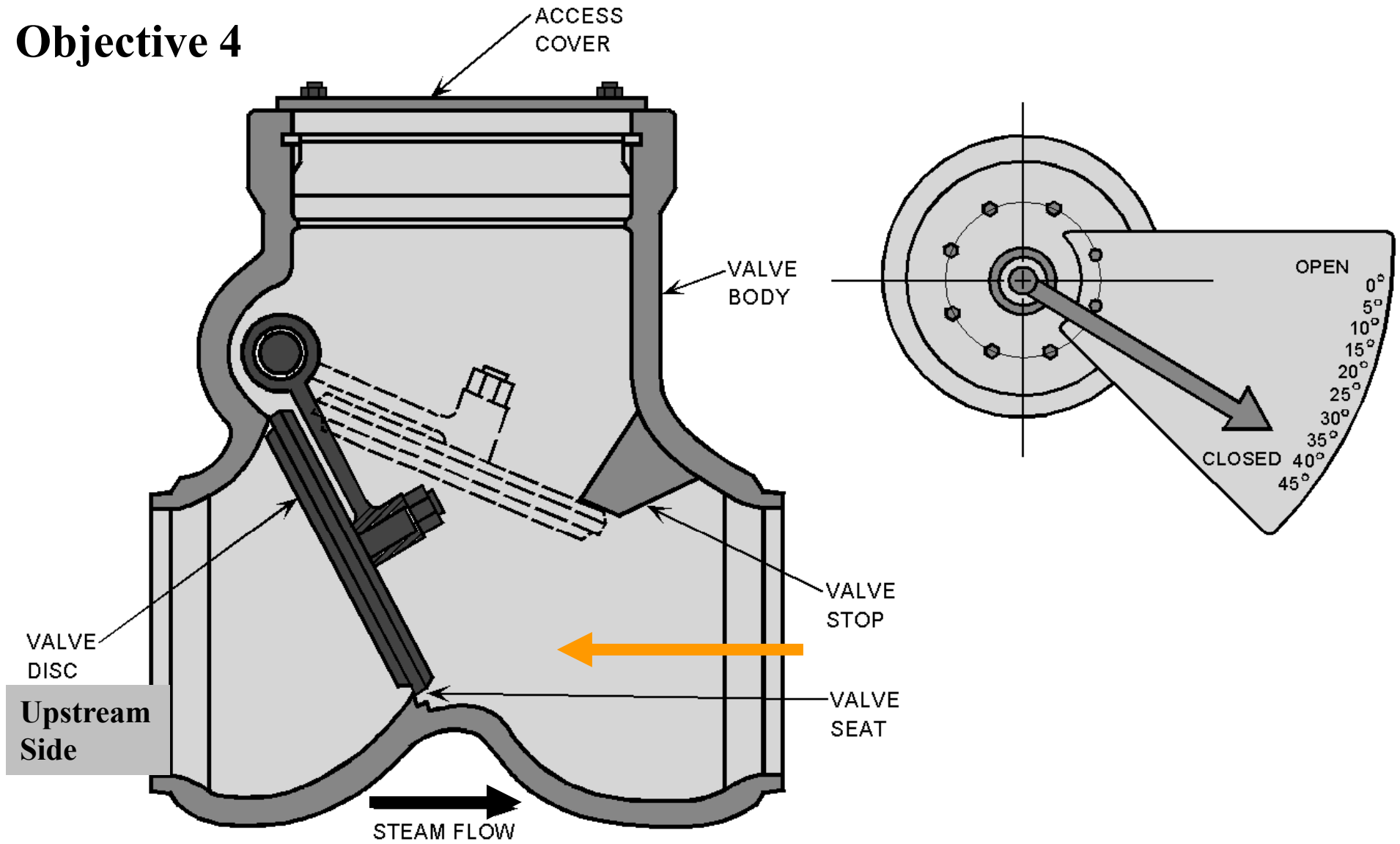


Fig 7.1-8



Objective 1

Auxiliary Steam System Purpose

1. Supply steam during plant startup and shutdown to:
 - a. Gland Sealing Steam System.
 - b. Condenser Air Ejectors.
2. Supply various steam loads in Auxiliary & Fuel Buildings (BABT heating, Decontamination Equipment, Building heating at many plants).

Aux Steam System

Fig 7.1-9

