Core Spray

Chapter 10.3

Objectives

1. Identify the purpose of the Core Spray system.
2. Recognize the purpose, function and operation of the following Core Spray system major components:
    a. Pump Discharge Valves
    b. Pump
    c. Sparger

Objectives

3. Describe the following flowpaths of the Core Spray system:
    a. Suction Path
    b. Discharge Path
    c. Liine Fill
4. List the Core Spray system automatic initiation setpoints.
5. Describe the Core Spray system response to auto initiation.

Objectives

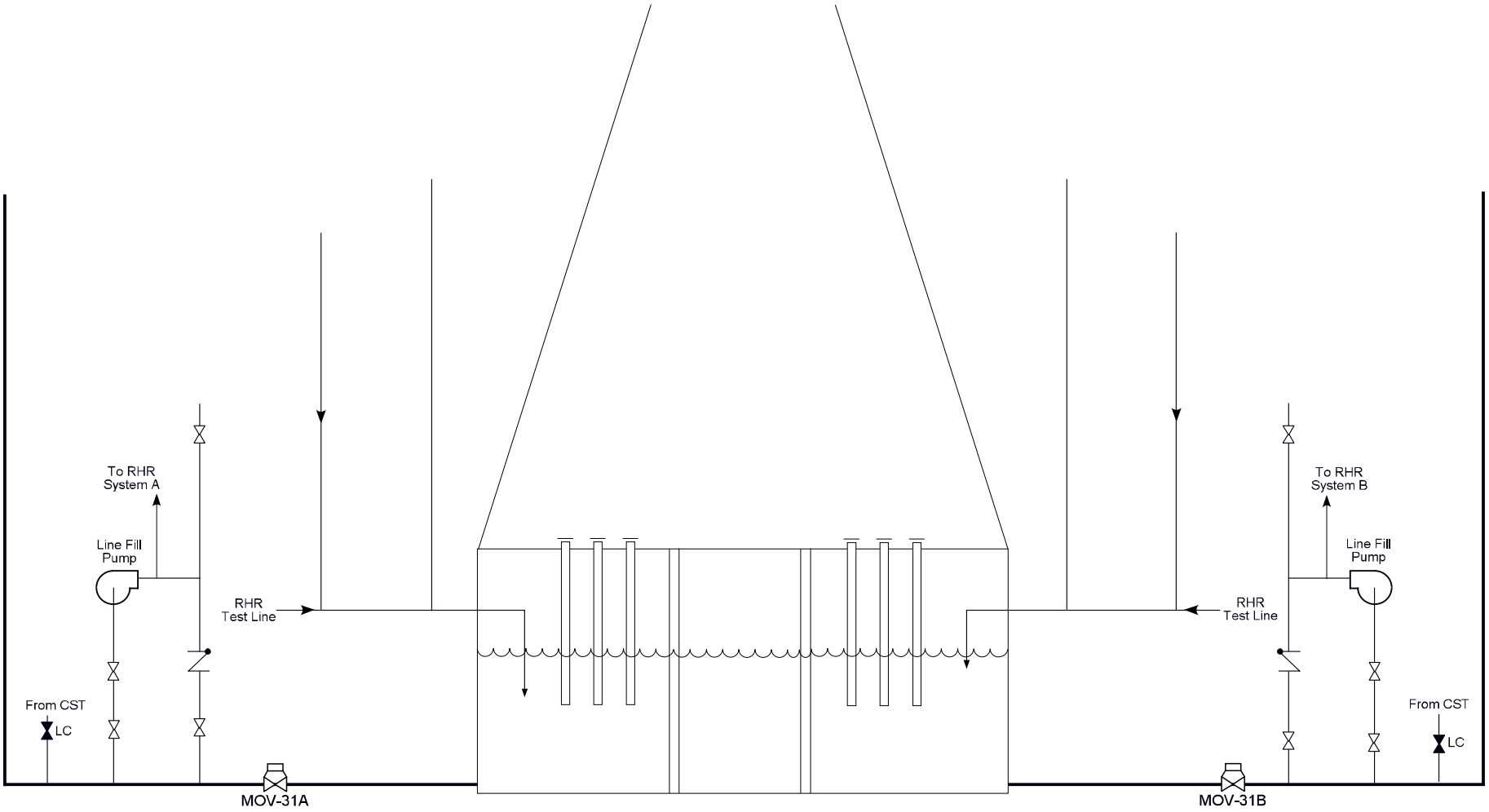
6. Describe how the Core Spray system interrelates with the following system/components:
   a. Reactor Vessel System
   b. Emergency AC System
   c. Automatic Depressurization System
   d. Primary Containment

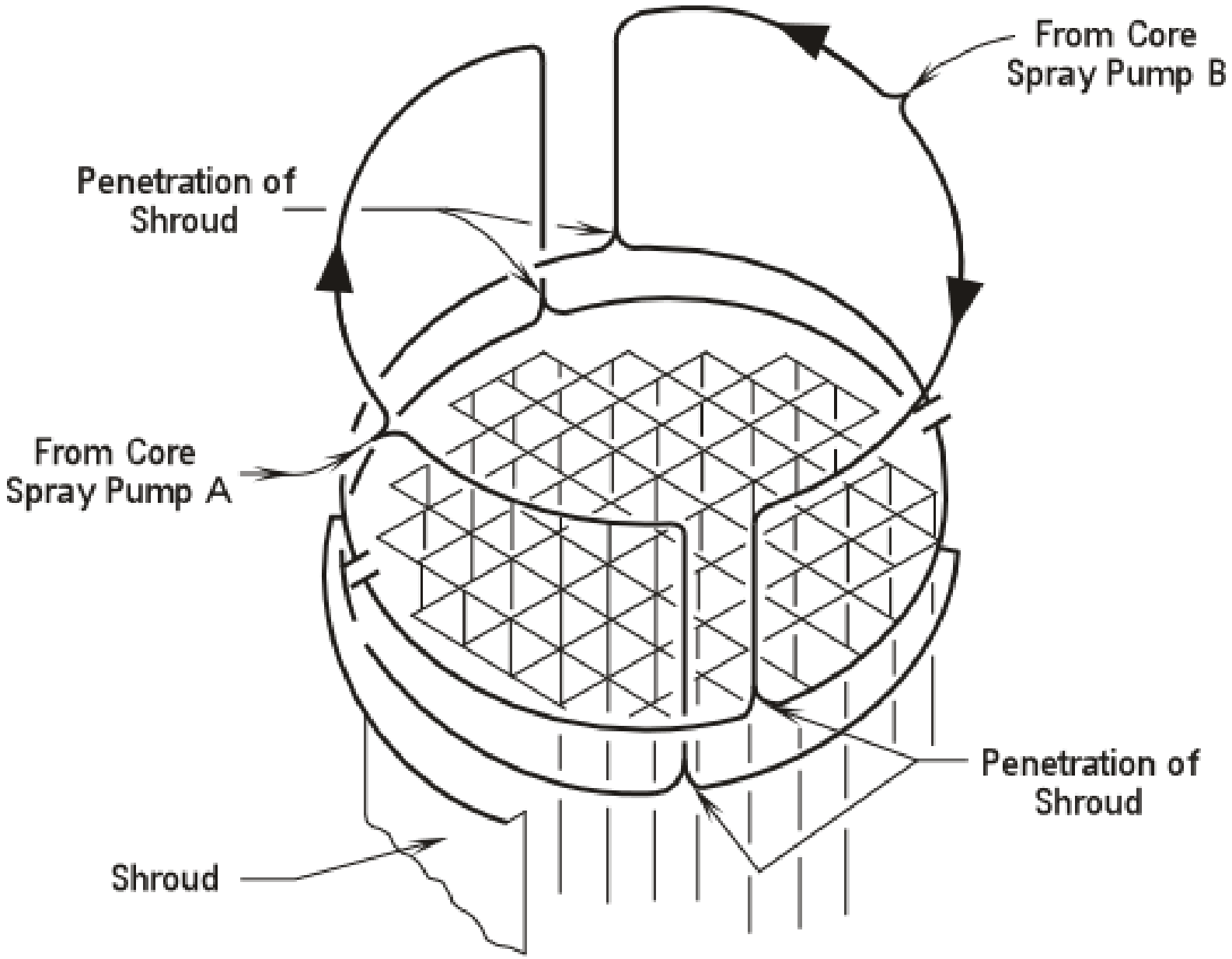
Core Spray System Purpose

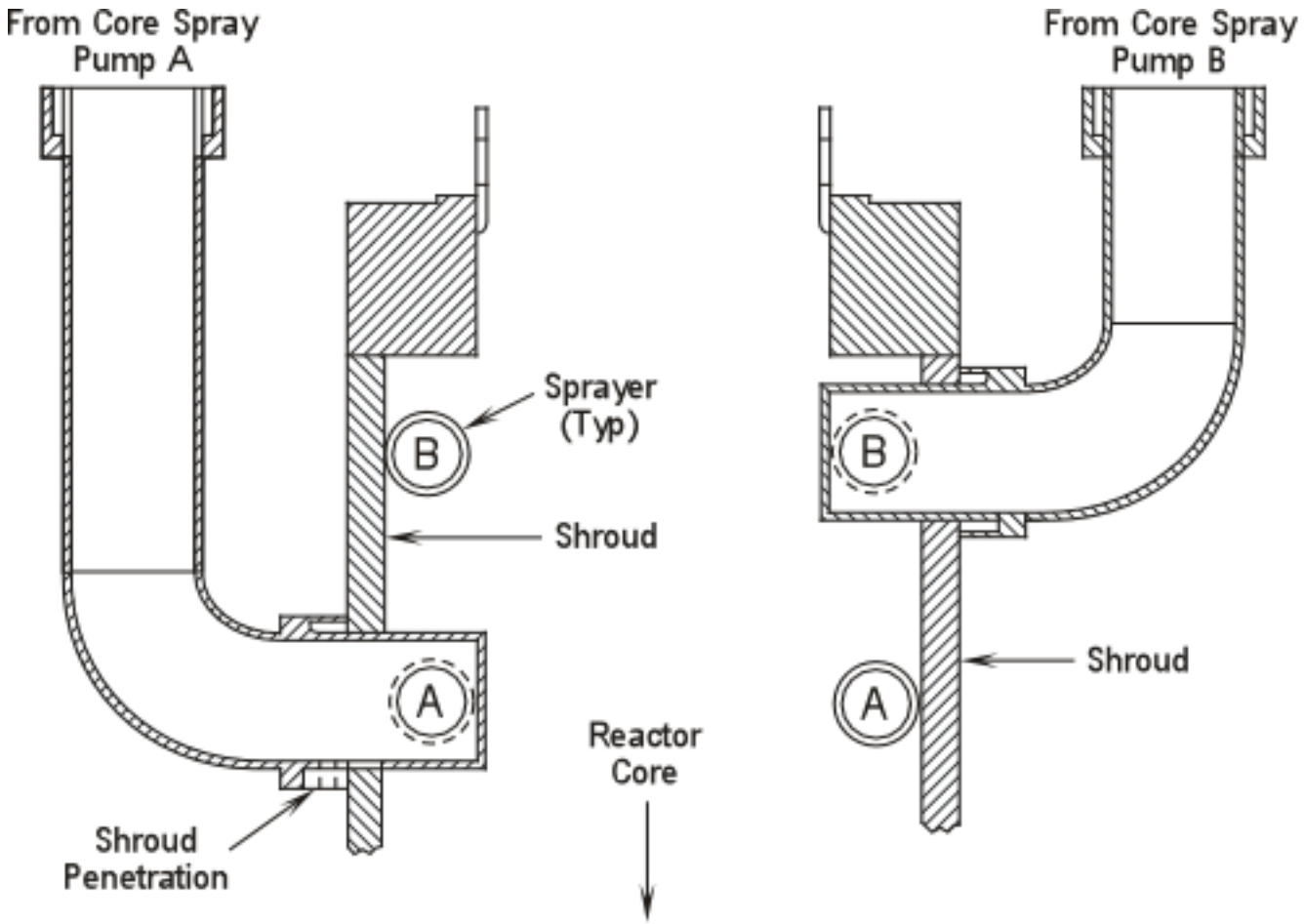
- Provide low pressure makeup water to the reactor vessel for core cooling under LOCA conditions

Core Spray System Major Components

- Pump Discharge Valves
- Pump
- Sparger

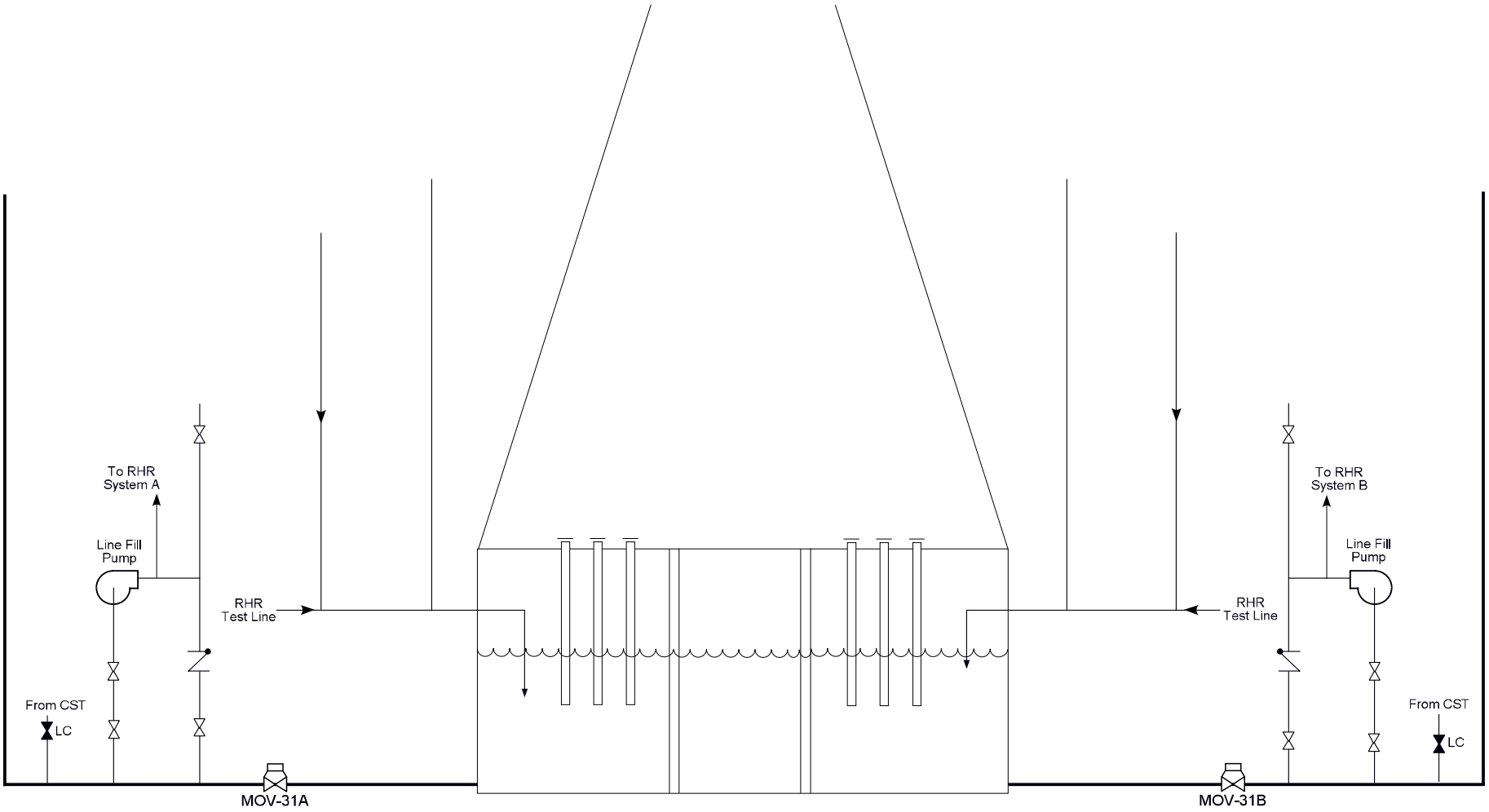

To RHR
System A
Line Fill
Pump
RHR
Test Line
From CST
LC
MOV-31A
To RHR
System B
Line Fill
Pump
RHR
Test Line
From CST
LC
MOV-31B


From Core
Spray Pump B
Penetration of
Shroud
From Core
Spray Pump A
Penetration of
Shroud
Shroud


From Core Spray
Pump A
From Core Spray
Pump B
Sprayer
(Typ)
B
Shroud
A
Shroud
Shroud
Penetration
Reactor
Core
B
A

Core Spray Flow Paths

- Suction Path
- Discharge Path
- Line Fill


To RHR
System A
Line Fill
Pump
RHR
Test Line
From CST
LC
MOV-31A
To RHR
System B
Line Fill
Pump
RHR
Test Line
From CST
LC
MOV-31B

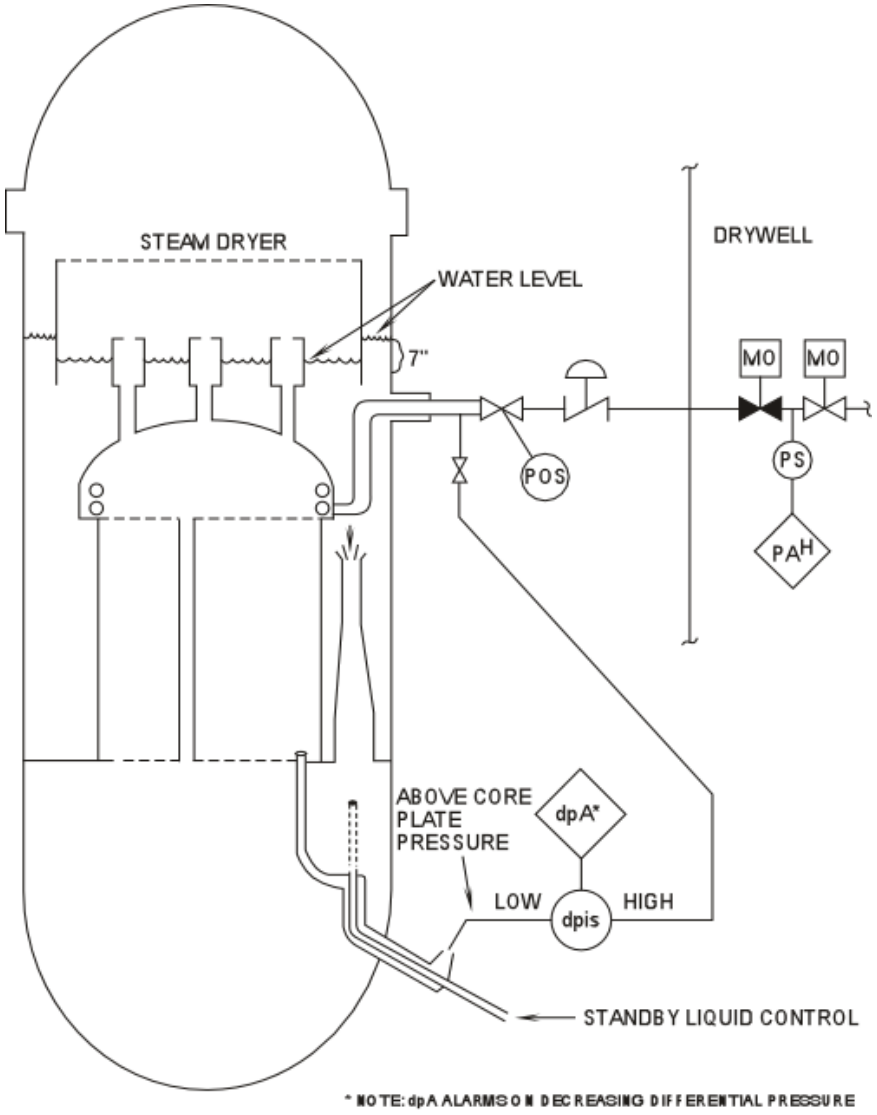
Core Spray Automatic Initiation Setpoints

- High Drywell Pressure
- Level 1

Core Spray Response to Automatic Initiation

- Test line MOV closes
- If normal AC available
  - Core Spray Pump starts (7 sec delay)
  - Delay to prevent overloading AC power system
- Reactor pressure decrease below 465 psig
  - Injection Valves receive open permissive
  - Injection occurs below 333 psig
  - Max flow when pressure below 274 psig

Leak Detection System



System Interrelations

- Reactor Vessel System
- Emergency AC Power System
- Automatic Depressurization System
- Primary Containment System
- Reactor Building Service Water System

Objective Review

1. Identify the purpose of the Core Spray system.
2. Recognize the purpose, function and operation of the following Condensate and Feedwater system major components:
   - Pump Discharge Valves
   - Pump
   - Sparger

Objective Review

3. Describe the following flowpaths of the Core Spray system:
   - Suction Path
   - Discharge Path
   - Liine Fill
4. List the Core Spray system automatic initiation setpoints.
5. Describe the Core Spray system response to auto initiation.

Objective Review

6. Describe how the Core Spray system interrelates with the following system/components:
   - Reactor Vessel System
   - Emergency AC System
   - Automatic Depressurization System
   - Reactor Building Service Water System

Questions
- or –
Comments