# Turbine Building Service Water (TBSW)

304B Chapter 11.4

# Objectives

1. Identify the purpose of the Turbine Building Service Water (TBSW) system.
2. Recognize the purpose, function and operation of major system components:
   a. TBSW pumps
   b. strainers
3. Describe the flow path of the TBSW systemduring normal operation.
4. Identify the purpose for the conditions that automatically isolate the TBSW system from the reactor building service water system.
5. Describe the system's interfaces with the following plant systems:
   a. Circulating water system
   b. Turbine Building Closed Loop Cooling Water (TBCLCW) system
   c. Reactor Building Service Water (RBSW) system

# Purposes

**TBSW**:

Transfers heat from non-safety related components to the Long Island Sound.

# Overview

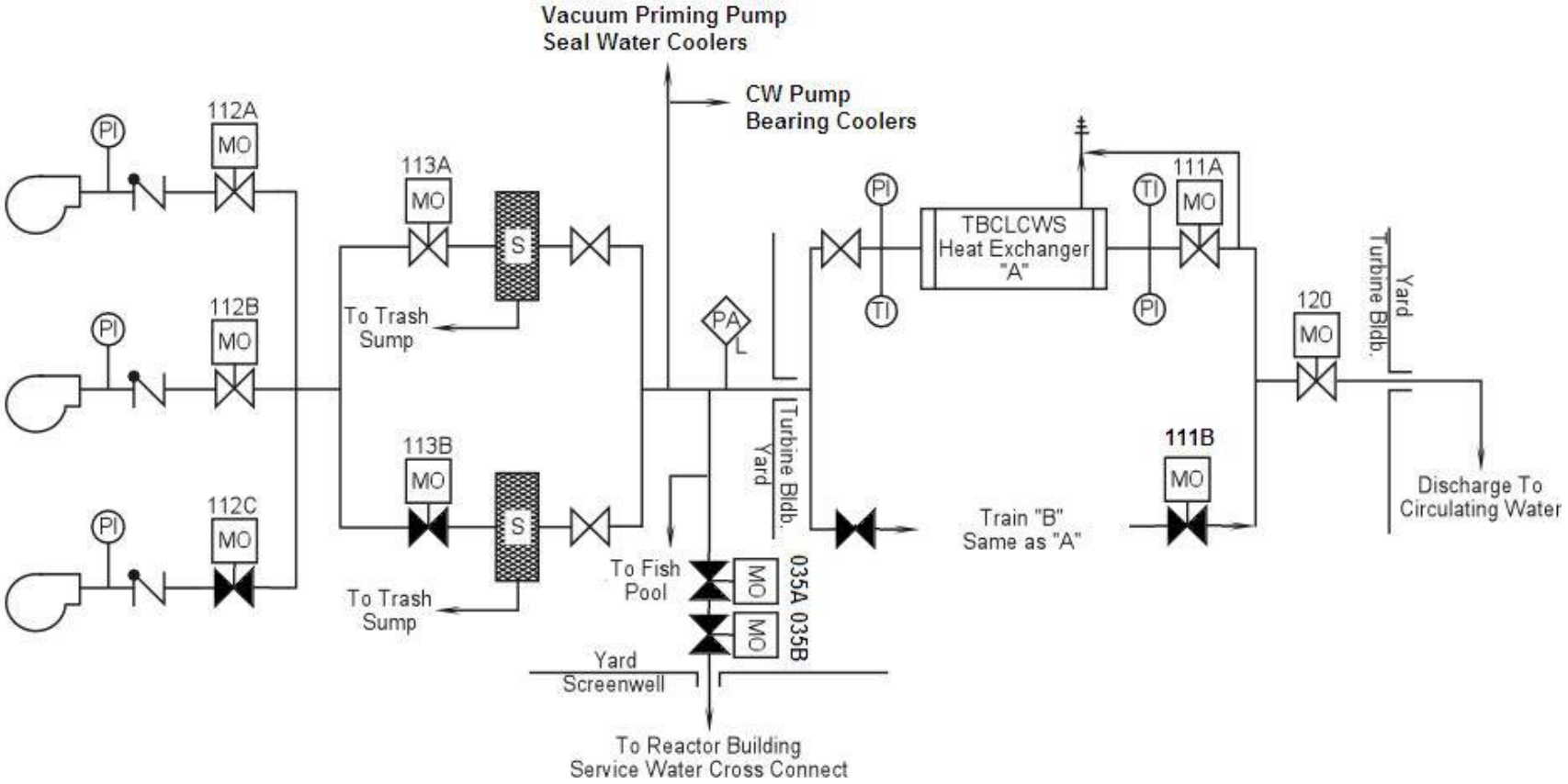


FIGURE 11.4-1 Turbine Building Service Water System

Objective 3

# TBSW Pumps

- Three 50% capacity pumps with rated flow of 8,000 gpm each
- TBSW share suction pits with circulating water system at the intake structure
- Two pumps normally running with third pump in standby

# Strainers

- Two 100% capacity self-cleaning strainers process the total TBSW system flow at the common pump discharge header

# Normal Operation

Two TBSW take water from the Long Island Sound to provide cooling water to the TBCLCW heat exchanger, the circulating water pump bearing coolers, the vacuum priming pump seal coolers, and the fish retention pond.

# System Isolations

Normally closed MOV-035A/B on cross-tie to RBSW loop B receive a signal to close upon:

- LOCA signal
- Loss of voltage on emergency bus

RBSW provides cooling flow to safety-related components during design bases LOCA/LOOP events; isolation protects against diversion of RBSW flow

# System Interfaces

- Circulating water
  - TBSW pumps share suction pits with CW pumps
  - TBSW supplies CW pump bearing coolers
- Reactor building service water
  - TBSW pump discharge header as a normally-closed cross-connect line to RBSW loop B
- Turbine building closed loop cooling water
  - TBSW supplies cooling water to TBCLCW heat exchangers

# Review

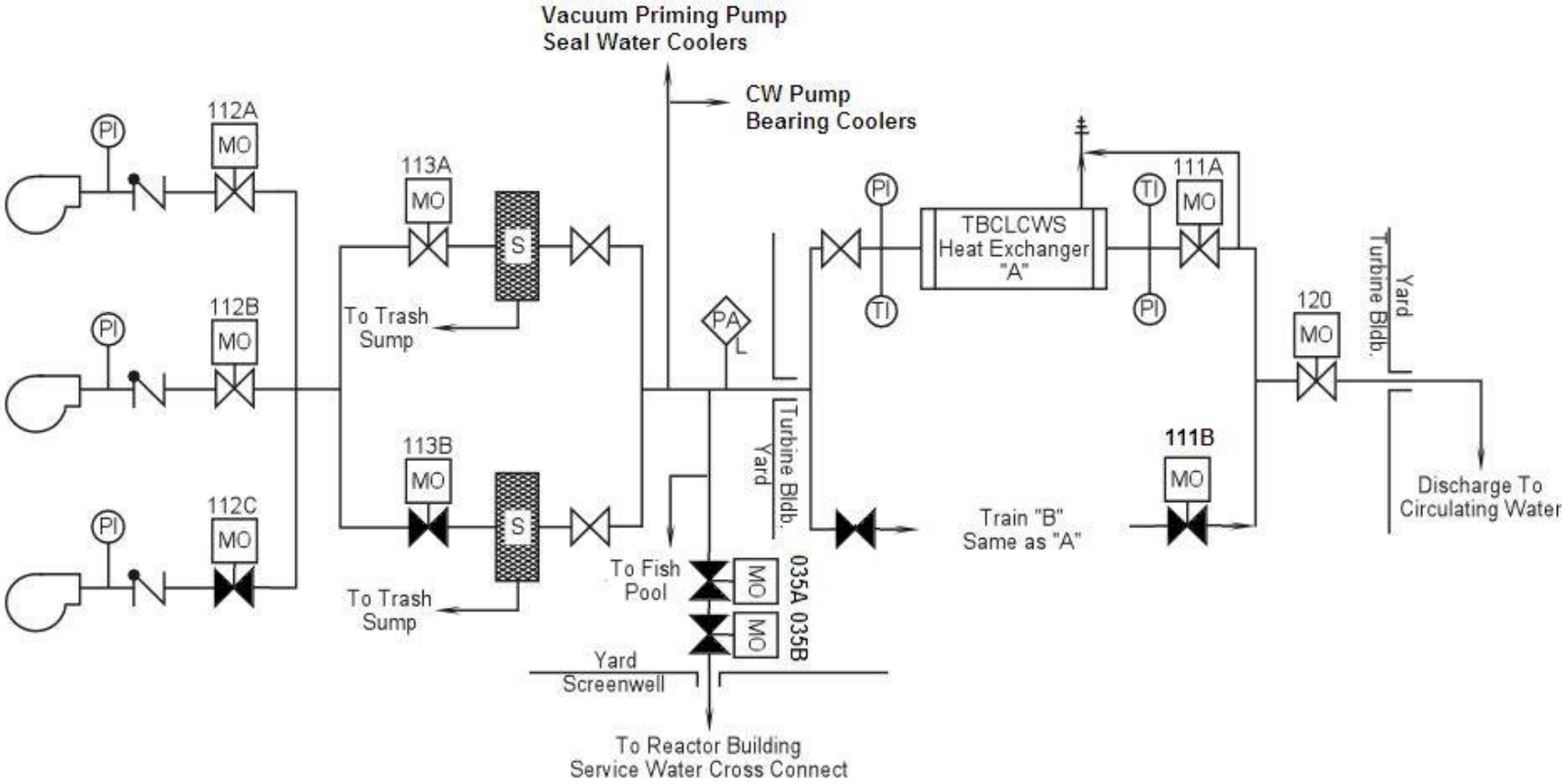


FIGURE 11.4-1 Turbine Building Service Water System

Objective 3

# Objectives

1. Identify the system's purposes.
2. Recognize the purpose, function and operation of major system components.
3. Describe the system flow path during normal operation.
4. Identify the function of conditions causing automatic isolation.
5. Describe the system’s interfaces with other plant systems.

Are there any questions?