

Circulating Water

304B Chapter 11.1

Objectives

1. Identify the purpose of the circulating water system.
2. Recognize the purpose, function and operation of major system components:
 - a. circulating water pumps
 - b. traveling screens
 - c. screenwash pumps

Objectives (continued)

3. Describe the system flow path during normal operation.
4. Describe the system's interfaces with other plant systems:
 - a. condensate and feedwater system
 - b. reactor building service water
 - c. turbine building service water
 - d. liquid radwaste system

Purpose

Use water from Long Island Sound in once-through cooling mode to remove the heat of vaporization from steam exiting the main turbine.

Overview

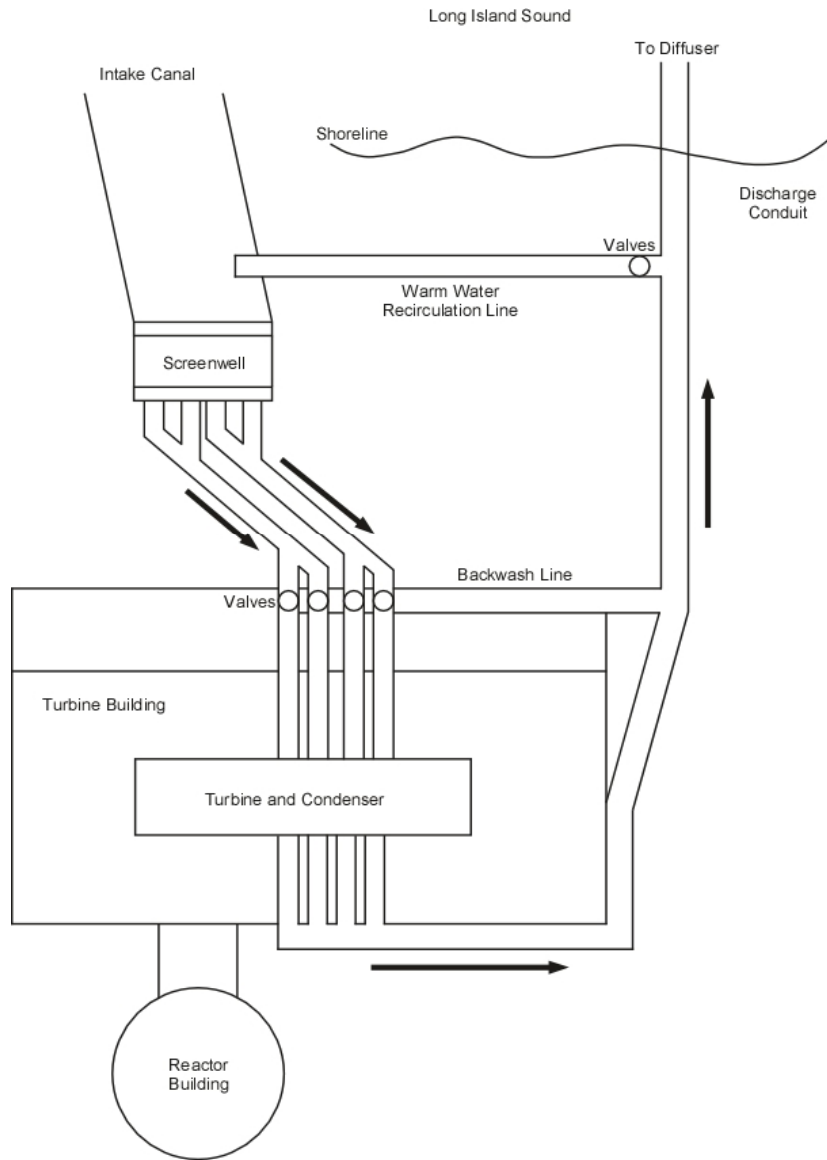


Figure 11.1-1 Circulation Water System Overview

Objective 3

Overview

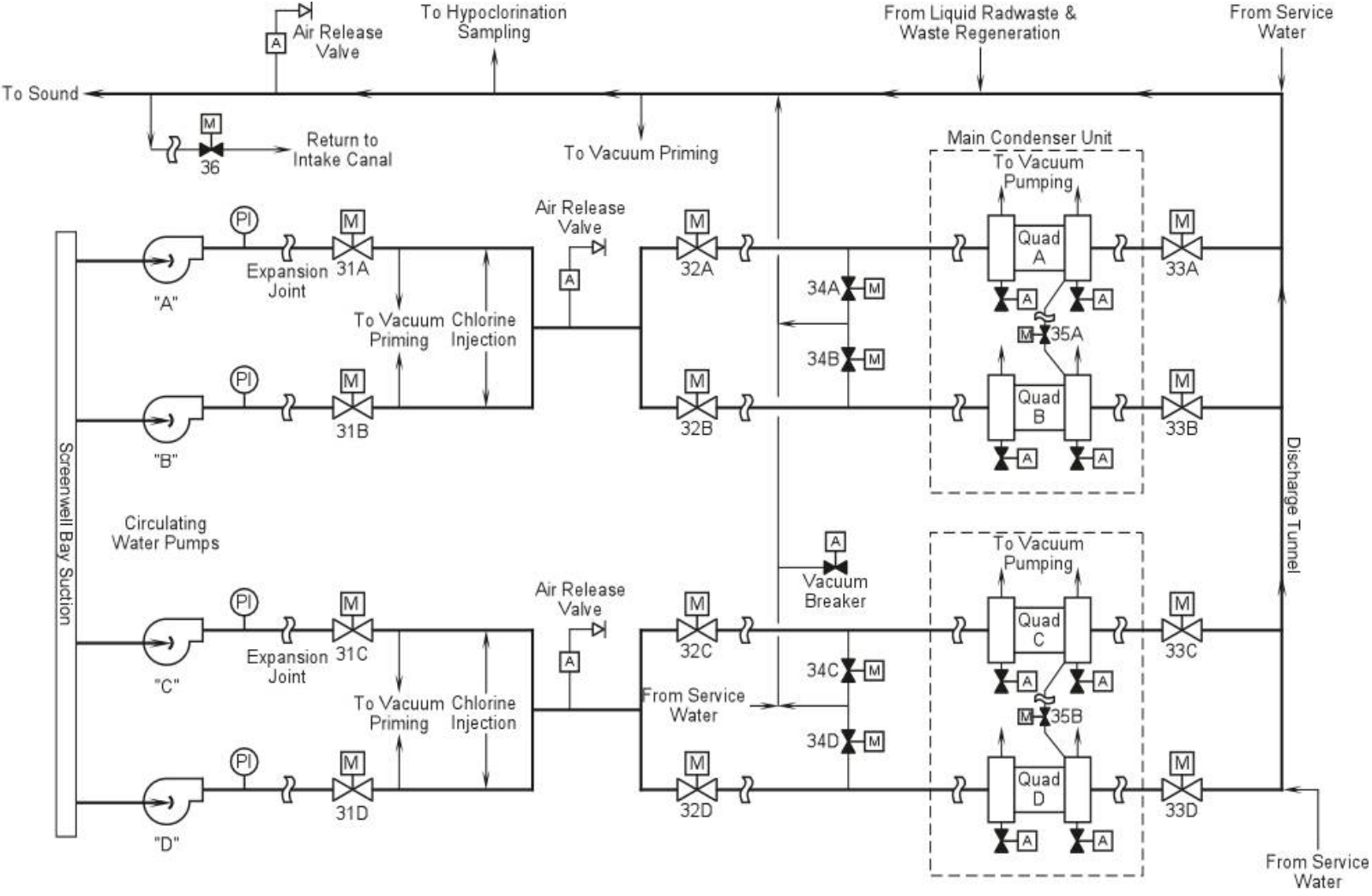


Figure 11.1-2 Circulating Water System (N42)

CW Pumps

- Four 25% capacity, motor-driven pumps with rated flow of 143,400 gpm each
- Four pumps normally running to limit temperature rise of water flowing through condenser to 20F or less
- CW pump trips if the differential water level across its traveling screen exceeds 30 inches

Traveling Screens

- Each CW pump has individual traveling screen
- Traveling screen protects pump from large debris
- CW pump will trip if differential water level across screen exceeds 30 inches

Screenwash Pumps

- Two 100% capacity pumps
- One pump is running whenever traveling screen(s) are running
- Spray knocks accumulated debris off traveling screens to prevent it from entering circulating water suction lines

Normal Operation

Four circulating water pumps take water from the Long Island Sound to provide cooling water to the main condenser.

System Interfaces

- Condensate and feedwater
 - CW cools main condenser
- Reactor building service water
 - RBSW returns water to CW discharge tunnel
- Turbine building service water
 - TBSW returns water to CW discharge tunnel
- Liquid radwaste
 - Liquid waste releases are diluted by CW discharge flow

Review

1. Identify the system's purposes.
2. Recognize the purpose, function and operation of major system components:
 - a. circulating water pumps
 - b. traveling screens
 - c. screenwash pumps

Review (continued)

3. Describe the system flow path during normal operation.
4. Describe the system's interfaces with other plant systems:
 - a. condensate and feedwater system
 - b. reactor building service water
 - c. turbine building service water
 - d. liquid radwaste system

Are there any questions?