

10.13 DEMINERALIZED WATER SYSTEM

10.13.1 Power Generation Objective

The objective of the Demineralized Water System is to provide a supply of high purity water which is free of radioactive material. This shared system provides high purity water to all three units and to the common plant facilities such as the radiochemical laboratory. All secondary containment penetrations are designed to prevent seismically induced failure from causing a breach of containment.

10.13.2 Power Generation Design Basis

The system shall be capable of supplying all normal plant requirements for demineralized water.

10.13.3 Description

Demineralized water is used for makeup to various systems including the Primary Coolant Systems, the Reactor Building Closed Cooling Water Systems, and the Standby Liquid Control Systems. The water is piped to the radiochemical and health physics laboratories, sampling sinks, and various points in the plant where radioactive decontamination work is performed. Demineralized water is used extensively during preoperational cleaning of the reactor and piping systems.

Makeup demineralized water required to support plant operations is supplied by a makeup demineralized water unit.

Demineralized water is pumped from the makeup demineralized water unit to a 375,000-gallon outdoor storage tank. The makeup demineralized water unit is operated as needed to keep this tank full. Water needed for makeup in the Primary Coolant System is pumped from the demineralized water storage tank to one or more of the three condensate storage tanks. Other requirements for demineralized water are supplied by a distribution system drawing from three 10,000-gallon head tanks located on the roof of the Reactor Building. Level controls on the head tanks actuate pumps which supply water from the demineralized water storage tank to the head tanks.

The Demineralized Water System is designed to prevent the intrusion of water from other sources. Tanks containing demineralized water are of aluminum, pumps are of stainless steel, and valves and piping are either aluminum, stainless steel, or other non-corrosive material. These measures assure that purity of the water is maintained.

Under loss-of-power conditions, the system serves no essential functions. Primary system makeup requirements are met from the condensate storage tanks.

10.13.4 Inspection and Testing

The Demineralized Water System requires no inspection other than normal maintenance. Operation of the system to meet construction and preoperational cleaning needs satisfies testing requirements.

DEMINERALIZED WATER STORAGE TANKS WATER SPECIFICATIONS

Specific Conductivity	≤ 1.0 μhos/cm
Chloride	≤ 50 ppb
Silica	≤ 50 ppb
Filterable Iron.....	≤ 50 ppb