

Given

For the pressurized water nuclear reactor power plant, water circulating in the containment vessel generates water vapor in the steam generator for use in the turbines/condenser/secondary loop pump power cycle. The primary water loop that circulates within the containment vessel is separate from the secondary water loop circulating in the power cycle.

Find

- (a) Consider the primary water loop as a system within the containment vessel, identify the system and the locations on the system boundary where the system interacts with the surroundings and directions of all flows.
- (b) Consider the secondary water loop as the system, identify the system and the locations on the system boundary where the system interacts with the surroundings and the directions for all flows.

Solution

(a)

