

and unbalances the forces on the main valve piston such that the relief valve opens discharging steam to the suppression pool.

If air pressure is maintained on the diaphragm of the air-operated pilot, the second stage disc will be held open. In this case the main valve disc will open and remain open until the main valve preload spring is able to overcome the hydraulic differential across the main valve piston orifice. This will occur and the main valve will close when the reactor system pressure drops to about 20 psi above containment pressure. The main valve will reopen when the orifice differential increases sufficiently to overcome the combined preload spring force and hydraulic seating force on the main valve disc. This will occur when the reactor system has repressurized to about 50 psi above containment pressure. The only air consumed to maintain this cyclic operation is that due to leakage out of the pressurized actuator.

The relief valves are installed so that each valve discharge is piped through its own uniform diameter discharge line to a point below the minimum water level in the primary containment suppression pool to permit the steam to condense in the pool. Water in the line above suppression pool water level would cause excessive pressure at the relief valve discharge when the valve is again opened. For this reason, a small check valve venting to the drywell