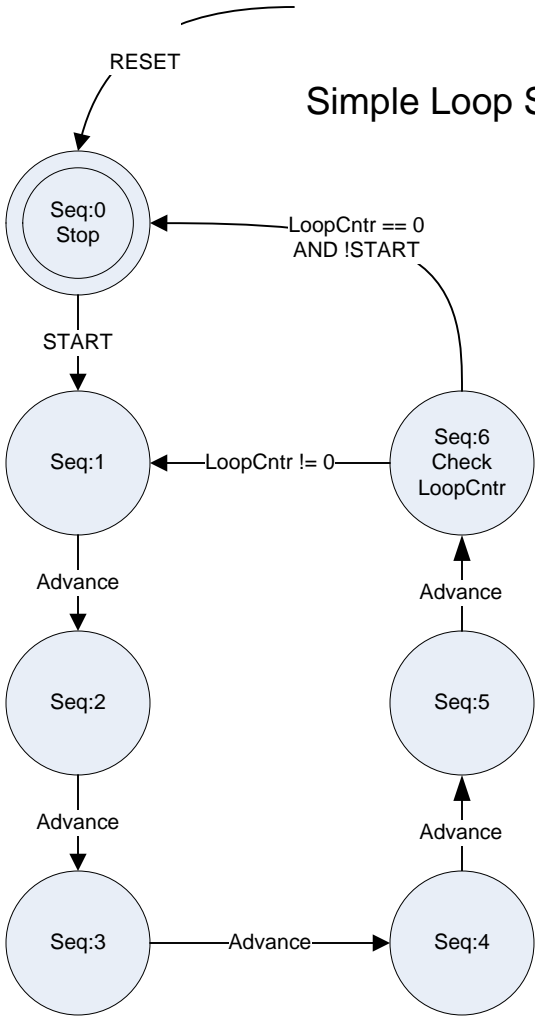
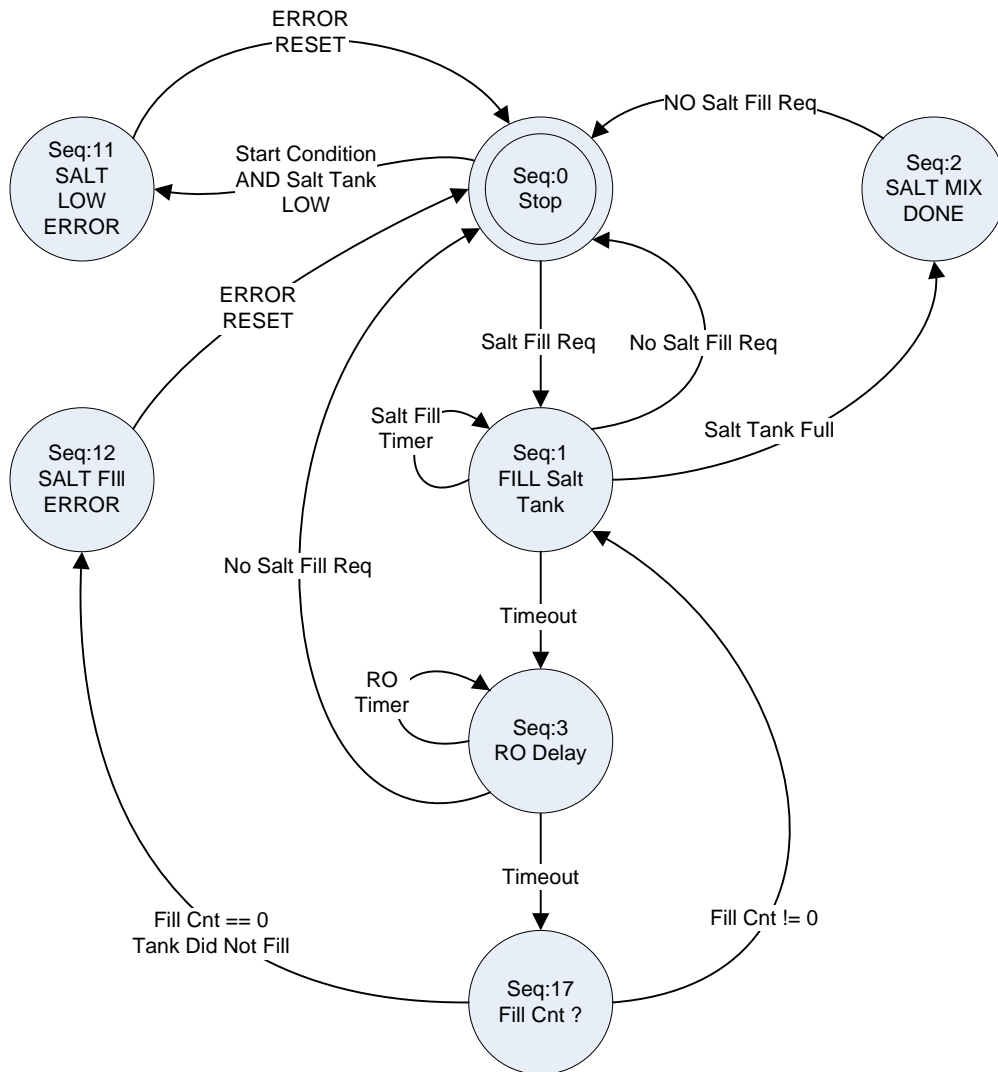


Simple Loop State Machine



Salt Tank Fill Firmware V1.08

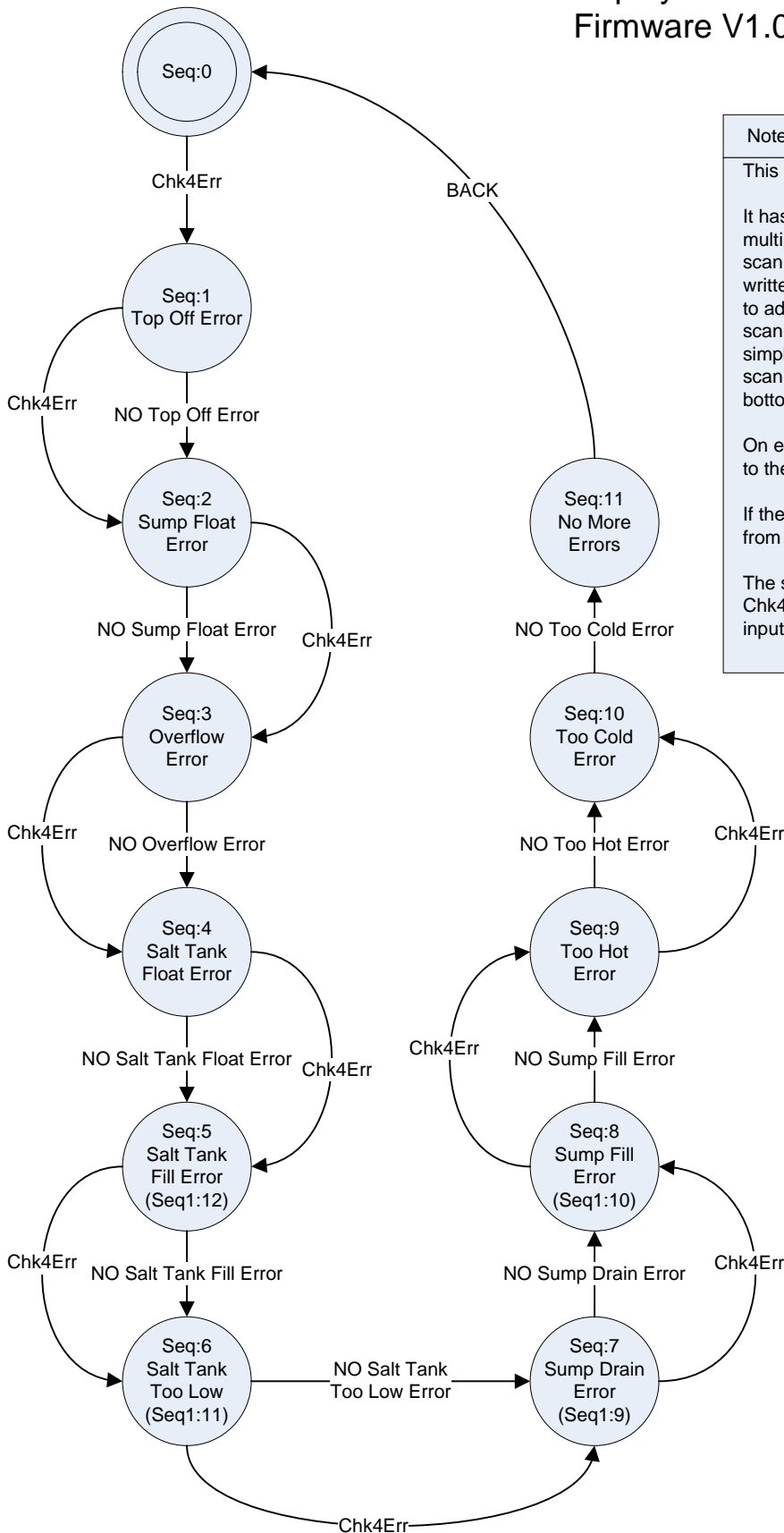


NOTES:

V1.06 Seq:3 and Seq:17 added to allow the Salt Fill tank to be filled over several hours. The problem is that the RO water system holding tank is approximately ½ the size of the salt tank. The RO system requires approximately 8 hours to refill the holding tank (based on 36h/day membrane). I didn't want to energize the solenoids for 16 hrs. Seq 17 Evaluates Fill Cnt. The SV for Fill Cnt determines the number to fill/wait cycles
Seq:3 simply wastes time to allow the RO holding tank to refill.

Seq:0 – All Off, Fill Cnt Reset
Seq:1 – Fill Salt Tank with RO H₂O. Salt Mix Pump runs,
Seq:2 – Set SaltTankOK to indicate successful fill of salt tank.
Seq 3 - Decrement Fill Cnt
Seq 7 – Evaluate Fill Cnt
Seq 11 – clears H2Oxch (V1.07) to break error loop.

Error Display State Diagram Firmware V1.08



Notes:

This is a "badly" designed state machine.

It has been implemented such that it can advance multiple states in a single scan time. The TriLog PLC scan engine exhibits this behavior. The Ladder logic is written so that a single event will cause the scan engine to advance the state machine multiple times on a single scan. The PLC coding to both allow the wild behavior is simply the order that the ladder logic is written, as the scan engine evaluates the ladder logic from top to bottom.

On each Chk4Err event the state machine will advance to the first state that is associated with a current error.

If there are no errors the state machine can advance from Seq:0 to Seq:11 on a single Chk4Err event.

The state machine MUST NOT and CANNOT use Chk4Err to return to Seq:0. The BACK event USES input other than Chk4Err.