Sequencer Lab

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Sequencer logic flow

- wait until all pvs are connected
- wait until one:systemEnable (bo) is true, on timeout transition to system fault state and set one:faultLamp (bo) else transition to filling
  - Turn on one:inFlowPump (bo)
- Main states follow:
  - state filling:
    - one:level (ao) will update
    - one:lowLevel (bo) will go false when the level goes up
    - one:highLevel (bo) will go true when the level reaches some value
    - on one:highLevel == true, transition to heating, on timeout transition to system fault state and set one:faultLamp (bo)
      - turn off one:inFlowPump (bo)
      - turn on one:heater (bo)
      - turn on one:impeller (bo)

Sequencer logic flow

- state heating:
  - one:temp (ao) will update
  - when one:temp (ao) > 25, transition to transferring, on timeout transition to system fault state and set one:faultLamp (bo)
    - turn off one:heater (bo)
    - turn off one:impeller (bo)
    - turn on one:outFlowPump (bo)

- state transferring:
  - one:level (ao) will update
  - one:highLevel (bo) will go false when the level goes down
  - one:lowLevel (bo) will go true when the level goes below some level
  - on one:lowLevel (bo) == true, transition to filling, on timeout transition to system fault state and set one:faultLamp (bo)
    - turn off one:outFlowPump (bo)
    - turn on one:inFlowPump (bo)

Procedure

- Survey sequencer code
- Build and run the IOC application
- Code runs in a loop and prints values of various process variables
- Bob display file displays various PVs
- Add two states
  - State holding – hold temperature for 30 seconds
    - Transition to this state is from heating
    - Transition to heating Phase2 when complete
  - State heatingPhase2 – heat until temp >= 30
    - Transition to transferring when complete

Details (1/2)

- **Survey sequencer code**
  - Source file is /home/training/epics-train/jwsExamples/sequencer/sequencerApp/src/sncExample.stt
- **Build and run the IOC application**
  - cd /home/training/epics-train/jwsExamples/sequencer
  - make
  - cd iocBoot/iocsequencer
  - chmod +x st.cmd
  - ./st.cmd
- **Open bob file with css**
  - /home/training/epics-train/jwsExamples/sequencer/seq1.bob

Details (2/2)

- **To rebuild after modifying source**
  - pushd ../..
  - make clean; make
  - If errors, try
    - make clean; make 2>&1 | grep stt
  - When make completes without errors
  - popd
  - ./st.cmd