SQ11 – Supercritical helium in operation

**Sensors and actuators used:**

- Temperature: TT370, TT371, TT372

- Flow rate: FT380

- Valve: FV381, FV382

- Control valve: CV380

- Heater: EH370

- Compressor

|  |  |
| --- | --- |
| **The user chooses:** | **Initial conditions:** |
| - Temperature: TT370L, TT370H, TT371setpoint, TT372setpoint | - Sequence 3 stopped |
| - Flow: FT380setpoint |  |
| - Control valve: CV380%opening |  |
| - Delay: tc1, tc2 |  |
| - Mode: InletTemp (TT372) or OutletTemp (TT371) or Flow regulation (FT380) |  |

start

TT370 < TT370L

Compressor stopped

Inlet Temp. regulation

FV381, FV382 opened

CV380 regulated

TT372 = TT372setpoint

Compressor running & t > tc2 (10s)

FV381, FV382 opened

Start compressor

Stop

t > tc1 (3s)

Open circuit

Open FV381, FV382

Open CV380

CV380 fully closed

Stop

(TT370 > TT370H) OR Stop

Start compressor

Gas heating

Start EH370

Stop heating

Stop EH370

Compressor running & t > tc2 (10s)

& Inlet Temp

Compressor running & t > tc2 (10s)

& Flow

Outlet Temp

Flow

Flow

Inlet Temp

Stop SHe

Open CV380

FV381, FV382 opened

Stop the Compressor

Close circuit

Close FV381, FV382

Close CV380

Flow regulation

FV381, FV382 opened

CV380 regulated

FT380 = FT380setpoint

Inlet Temp

Outlet Temp. regulation

FV381, FV382 opened

CV380 regulated

TT371 = TT371setpoint

Outlet Temp

Stop

Stop

Stop

Compressor running & t > tc2 (10s)

& Outlet Temp

Subsequence