# TCV operational plan

**Available number of Shots #23**

## Calendar Week 24 (12.06-16.06)

**L-Mode Experiment. Ip scan, DN, Low density**

1. Shape from 57088, Ip = 245 kA, Reverse Bt,
   density ramp from Line Average Density = 3.8e19 @ 0.5 s to 11e19 @ 1.6s, Bt = 1.4T. Plunge @ 0.65, 1.52
2. Repeat #1 with I_p=330 kA Bt=1.4T, same density ramp, same timing for plunges
3. Repeat #1 with I_p=180 kA, Bt=1.4T, same density ramp, same timing for plunges
4. Repeat #1 with q95=2.44 as #2, adjust Bt consequently (Bt = 1.02T)
5. Repeat #3 with q95=2.44 as #2, adjust Bt consequently (Bt=0.8T)
6. Shape and current from #1. Stop puffing once the divertor is formed to get low collisionality case. Include an ECRH power ramp from 0.9s (150 kW) till the end (500 kW)
7. Repeat #6 with density at intermediate level from #1 @0.65s and #6
8. Repeat density ramp of Shot #2 in DN configuration (Equilibrium from #53516 @ 1.55)
9. Repeat density ramp of Shot #3 in DN configuration
10. Repeat #1 in forward field
11. Repeat #3 in forward field

## Calendar Week 43 (23.10-27.10)

**To be decided according to results of week 24**

**Tentative**

Reference shot for Type I ELMy H-Mode from TCV15-2.3-1 #53352 with Z=+8cm, still compatible with NBI operation. The ELM frequency is 100Hz approximately

1. Repeat #53352 same sentting. 1MW NBI power from 0.8 to 1.2 s. At 0.82 s starts a
   density ramp keeping the same rate as #1. At 1.2 second power ramp down for check ELMy regime
2. Repeat #11 adjusting the fueling accordingly. We include N seeding
3. Repeat #12 with best trade off between fueling and seeding
4. Repeat #53352 with probe plunge in L and H-mode. Check robustness of Probe signal in H-mode, eventually adjust
   maximum insertion
5. Repeat #53352 D2 density ramp once H-Mode is established.
6. Check maximum density achieved before H-Mode degradation or disruption. Density feedback to this value during H-Mode. NBI power ramp down to check for ELMy regime
7. Repeat #3 for diagnostic purpouse
8. repeat #3 in the High-Density phase start N-seeding. Use seeding rate from Detachment experiment in L-Mode as starting point
9. Evaluation of #6 in terms of divertor condition. Choose the right N-seeding values and repeat
10. Repeat #6, anticipate the NBI power, keep density and N-seeding after the H-L transition. Plunge also in L-Mode

11. Repeat #7 for diagnostic purpouse
12. Repeat #8. If feasible decrease vertical position @ Z=-8cm