

Special Session Report



Date: Mar. 13, 2024

Time: 12:00 – 16:42

Shot#: 187374 – 187469 (96 shots)

Prior wall conditioning: None

Diverter pump: Off

Gas puff: H₂

Pellet: H pellet, TESPEL (Ti)

Mar. 14, 2024 (N. Tamura)

NBI#(1, 2, 3, 4, 5) = gas(H, H, H, H, H)=P(3.0, 2.8, 3.2, 4.3, 5.4) MW

ECH(77GHz) = ant(1.5-Uo, 5.5-U, 2-OUR)=P(0.109, 0.109, 0.112) MW

ECH(154GHz) = ant(2-OLL, 2-OUL, 2-OLR)=P(0.145, 0.143, 0.110) MW

ICH(3.5U, 3.5L, 4.5U, 4.5L) = P(-, -, -, -) MW

Topics

1. Plasma/Device Commissioning (N. Tamura)

Plasma Commissioning (N. Tamura et al.)

Experimental conditions: (R_{ax} , Polarity, B_t , γ , B_q) = (3.60 m, CCW, 2.75 T, 1.2538, 100.0%)

Shots: #187374 - #187469

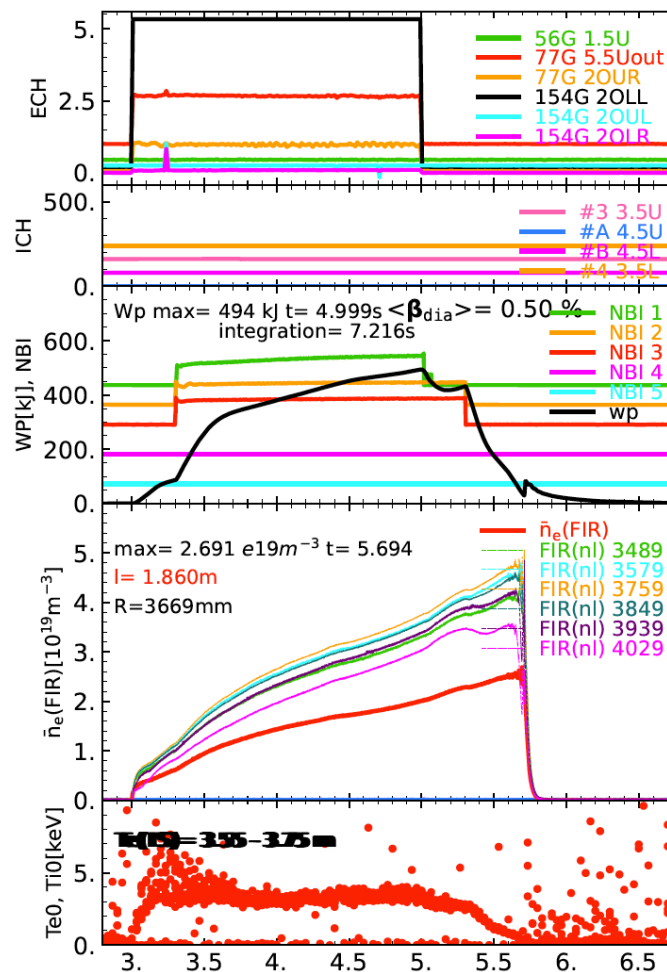
Goal of this experiment:

- To confirm the plasma startup and the stable sustainment of the plasmas
- To confirm the operation of diagnostics, data collection/display system, and each heating device (ECH, and NBI)

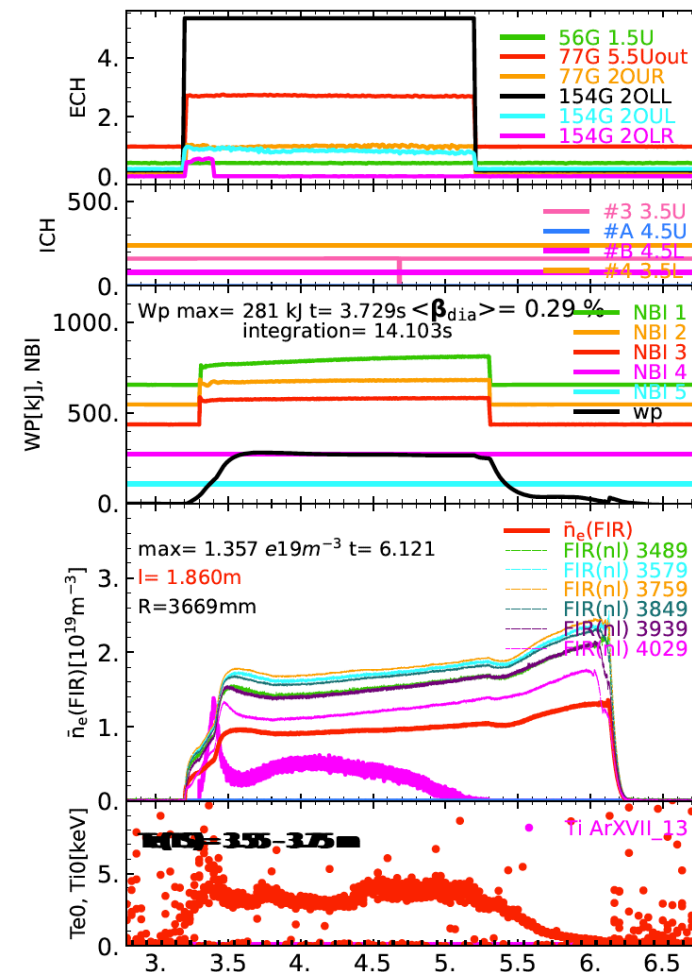
Results:

- We have finally confirmed **the stable sustainment of the EC-heated plasma and NBI (tang.) + ECH heated plasmas at $R_{ax} = 3.6$ m configuration**
- Commissioning is still needed to get of NBI (tang.+perp.)-heated plasmas with controllable density

e.g., #187403 (30th shot)



e.g., #187469 (last shot)



Device Commissioning (N. Tamura et al.)

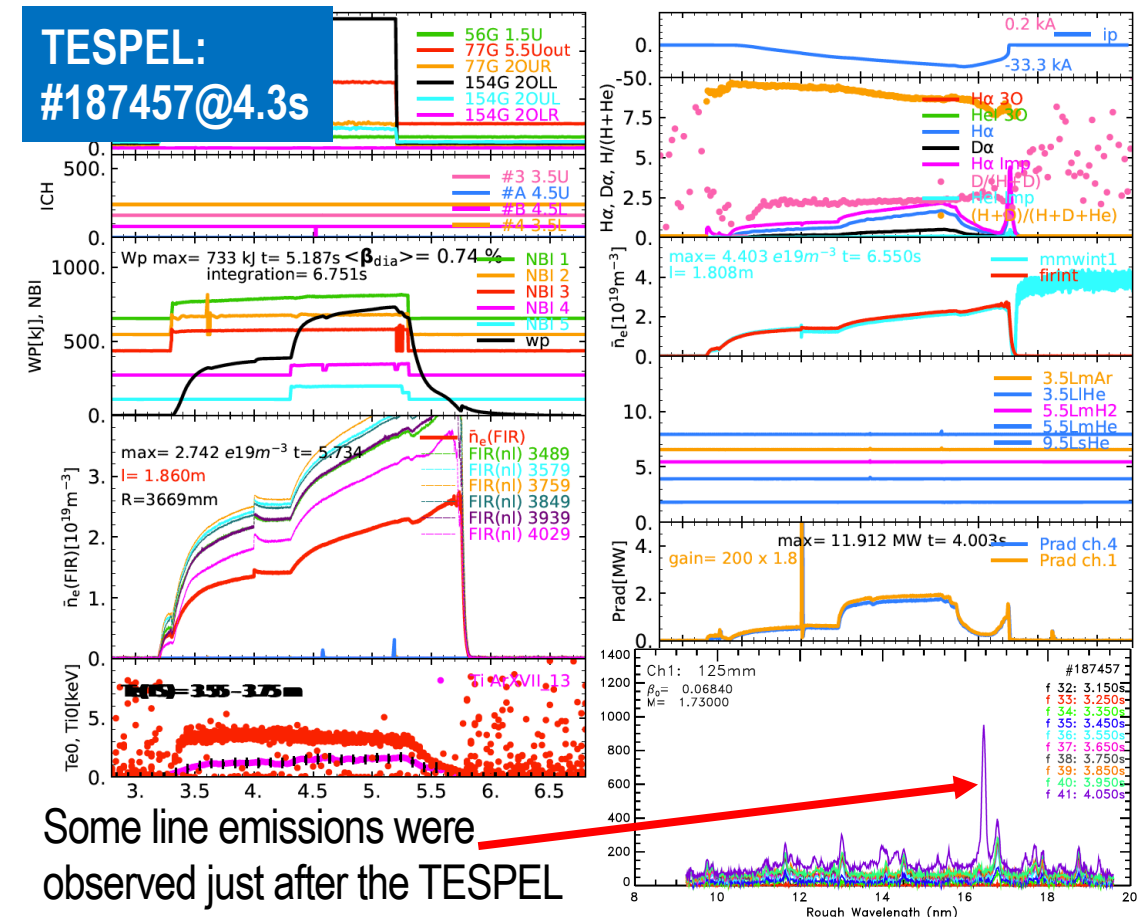
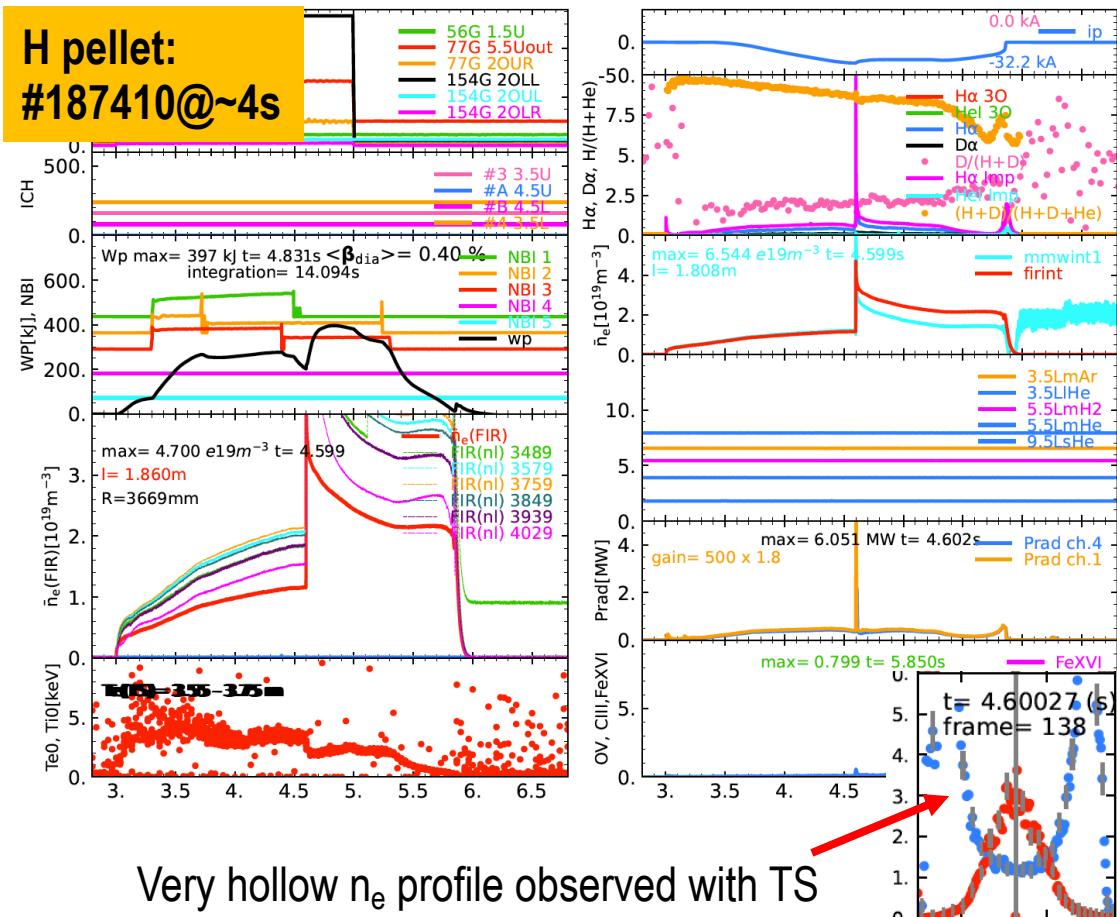
Results:

H pellet: Partially done. Available barrels are partially confirmed. Barrels that have not been checked will be checked today.

- #187410 - #287413, #187415 - #187417, #187422 - #187425

TESPEL: OK

- Ti-TESPELs (#187457, #187461) were successfully injected.

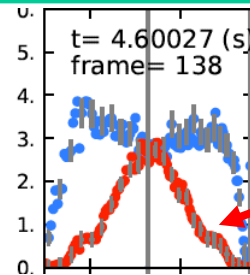


Device Commissioning Cont'd (N. Tamura et al.)

Results:

LID fields: Done (Up to $I_{LID} = 1920$ A, “7O island expanded” mode, #187453

ICH: Partially done (Antenna drive mechanism checked)



Island expansion was observed in the T_e profile

Shot that require attention

- Strange increases in Ha/HeI with impurity monitor, C III, and Prad were observed in the plasma heated with NBI#5
- Only twice during the experiment on Mar. 13
- Caution should be used in the plasma heated with non-modulated NBI#5

