

Research Operations Division Boundary Physics (*H. Kugel*)

- ◆ LITER-1d used in experiments on 8 days since 4/20
 - ▶ Both direct coating and dispersed “lithiumization” using HeGDC
 - ▶ New heaters reliably produced evaporation rates up to 20mg/min
 - ▶ Initially loaded with 77g lithium; about 35g remain
 - ▶ Produced changes, some beneficial, in performance and operation
 - No discernible effects so far on MPTS window transmission
 - ▶ Second cartridge undergoing offline testing, characterization in L-245
- ◆ LPI used for TESPEL experiments then lithium pellet experiment XP-718
- ◆ Encouraging results in lab. tests injecting stabilized lithium dust using LPI
 - ▶ Now fabricating sabots and filling with powder for loading into LPI
- ◆ SNL started work 4/1 to develop and build liquid lithium divertor module
 - ▶ Series of meetings held here to define goals and requirements
- ◆ SGI used in XP-742 to replace HFS gas while maintaining H-mode

Research Operations Division Diagnostics (*R. Kaita, B. Stratton*)

- ◆ Poloidal-CHERS encountered problems after seeing “first light”
 - ▶ Windows had become coated rendering in-vessel calibration unusable
 - ▶ One shutter became stuck closed in early April
 - ▶ One camera developed thermal leak three times – vendor will replace
 - ▶ To preserve usefulness of existing data, camera will not be replaced until after new in-vessel calibration performed at end of run, *but*
 - ▶ Leaky camera is warming up and will become unusable mid-June
- ◆ High-k scattering has taken data in several experiments
 - ▶ Radiometric calibration performed *in situ*
- ◆ UCLA collaborators working on 35, 45, 65 GHz reflectometers this week
- ◆ Hardware and software implemented for time-resolved XEUS data
- ◆ Installed and commissioned Biased Electrode and Probe (BEaP) system
- ◆ New fast visible camera is providing high-quality data routinely

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RF Operations (*J. Hosea*)

- ◆ HHFW has injected power on >180 shots
 - ▶ Peak power to 3.4MW, total injected energy per pulse to ~1MJ
 - ▶ Coupled >1MW in several phasings (180° , $\pm 90^\circ$, -60° , -120°)
 - ▶ $T_e(0)$ increased to 4.4keV in low-density helium plasmas, 0.6MA, 0.55T

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Physics Operations (*D. Mueller*)

- ◆ Use of LITER has brought changes to operation
 - ▶ Changes to gas program, improved confinement, ELM suppression
 - ▶ We have more to learn to optimize LITER benefits
- ◆ Control system upgrade to fast multi-processor servers is ready for PTP
 - ▶ All hardware appears to be functioning
 - ▶ All major software components complete, most operational
- ◆ CHI
 - ▶ Operation still limited to 1.8kV by MOV conduction
 - ▶ New fast voltage monitoring suffered from noise – reverted to old
 - ▶ Achieved lower closed-flux current than previously
 - Wall conditions may have contributed
 - ▶ Attempted to apply induction to CHI-initiated plasma
 - Extended plasma current but did not yet increase it