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

- ◆ Preparing for installing two LITERs to use in latter half of FY08 run
 - ▶ New flanges with shutters at Bay F (previous) and Bay K (new)
 - ▶ Tested shutter in L245 chamber with evaporation using a LITER unit
 - ▶ New LITER for Bay K assembled and undergoing leak checking
 - ▶ Installation of LITER-K and new control cabling delayed by postponement of maintenance period
 - ▶ Revisions of FMEA and SAD will be reviewed by ACC this week

- ◆ Liquid lithium divertor module
 - ▶ Proceeding with plans for Li-coated plate to be installed this summer
 - Reviewed by PAC-23 in January
 - CDR on Feb. 20 with participation by SNL collaborators
 - ▶ Setting up for wetting tests of a flat metal surface in L-245 chamber
 - Use LITER-F to coat plate heated above lithium melting point

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Boundary Physics [2]

- ◆ Li powder “shaker”
 - ▶ Installed gate valve with conduit to upper plate gap at Bay I
 - ▶ Successfully tested prototype piezo-electric shaker offline
 - ▶ Preparing for Design Review on Feb. 13
 - ▶ Preparation of XP to follow
- ◆ Four quartz microbalances now recording deposition in vessel
 - ▶ During boronization on 1/30 measured
 - $1.4\mu\text{gcm}^{-2}$ at Bay H bottom,
 - $1.0\mu\text{gcm}^{-2}$ at Bay H top,
 - $21\mu\text{gcm}^{-2}$ at Bay I midplane,
 - $0.1\mu\text{gcm}^{-2}$ at Bay B midplane radial which does not face the plasma

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Diagnostics (*R. Kaita, B. Stratton*)

◆ PCHERS

- ▶ Four of six spectrometer/CCD camera systems are taking data
 - Lens for Bay B bottom appears to be stopped down: fix this week
- ▶ Last two spectrometers shipped; have CCD cameras and filters
- ▶ Lithium gratings due mid-April and bandpass filters due late March
- ▶ Software development continues

◆ FIDA

- ▶ Spectrometer/CCD camera and PMT discrete channels taking data
- ▶ Plan commissioning MP next week

◆ Divertor Bolometer

- ▶ 8-channels installed at Bay I Lower; 4 channels at Bay J midplane
- ▶ Electronics for Bay I installation to be shipped this week
- ▶ Received detectors for 8-channels at Bay J top; designing mounting

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Diagnostics [2]

- ◆ **BES** – collaboration with G. McKee (UWisc)
 - ▶ Determining optimum location of viewing optics to design port
 - ▶ Evaluate performance of planned system by end of May
- ◆ **MSE-LIF**
 - ▶ Held CDR last week for installation of system
 - ▶ Aiming for availability in FY10
- ◆ **MPTS**
 - ▶ Installed polarizer to avoid saturation at high density
 - ▶ Calibrated with Rayleigh/Raman scattering in January
 - ▶ Routine calibration of window transmission with new illumination probe
- ◆ **High-k Scattering**
 - ▶ Preparing to install remote control for launch/collection mirrors
- ◆ Many other calibrations performed during plasma startup

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RF systems (*J. Hosea*)

- ◆ Started vacuum conditioning of HHFW system on 1/30
 - ▶ Sources 1, 2, 5 & 6 were brought up to 24kV for 50ms
 - ▶ Sources 3 & 4 had a circuit breaker failure which caused some damage
 - Second similar breaker failure
 - ▶ Sources should be ready to resume operation next week

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Physics Operations (*D. Mueller*)

- ◆ Operation with the new real-time computers revealed issues not apparent in pre-operational and integrated systems tests
 - ▶ NB system and some FCPC rectifiers caused data corruption
 - ▶ Some PF rectifiers were receiving commands up to 5ms late
 - Affected vertical and radial position control
 - Fixed by modifying software to prevent overflow of buffer
 - ▶ Malfunction in analog signal for velocity to vertical control loop
 - ▶ Control signals to SPAs for EF/RWM coils are showing data dropouts
 - Working on resolving this to be ready for experiments next week
- ◆ Finally achieved reasonable control of reference plasmas last week
- ◆ Despite 2 boronizations (10g each) discharges were shorter
 - ▶ Appeared oxygen was higher than last year at comparable stage in run
- ◆ Additional bakeout of the vacuum vessel appeared justified