

Research Operations Division

Boundary Physics

- ◆ Installed (unloaded) LITER previously used at Bay F at Bay K upper
 - ▶ Now purging and pumping for opening to vacuum for alignment
 - ▶ Control cabling laid but awaiting connection in next maintenance week
- ◆ Plan to install new LITER unit at Bay F in next maintenance week
 - ▶ Evaporator used in L-245 test stand to evaluate application to LLD
- ◆ Developing procedure to load LITER reservoirs in NTC
 - ▶ Revised FMEA and SAD for LITERs under review by ACC
- ◆ Li powder “shaker”
 - ▶ Held successful FDR on Feb 13
 - ▶ Now testing characteristics of wax-covered (CH₂) lithium powder
- ◆ Liquid lithium divertor module
 - ▶ Successful CDR held on Feb 20 with participation of collaborators
 - ▶ Performed coating tests of flame-sprayed Mo surface in L-245 chamber

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

◆ PCHERS

- ▶ All six spectrometer/CCD camera systems are taking data
 - Need white-plate calibration for final two at end of run
- ▶ Problem with iris on lens for Bay B bottom view solved
- ▶ Software development continues
- ▶ Lithium gratings due mid-April; bandpass filters arrived

◆ FIDA

- ▶ Ran commissioning Machine Proposal on Feb 18, 21

◆ MPTS

- ▶ Encountered new problem with saturation of some spatial channels due to (thermal?) broadband emission from SFLIP shield during NBI
 - Still need to close one shutter for long shots with 3 NB sources

◆ MSE diagnostic calibrated with NBI into gas

Research Operations Division Diagnostics (*cont.*)

◆ High-k Scattering

- ▶ Good progress on installation of machine-end hardware for remote control of mirrors during this maintenance week
 - Needs evening work over the next two weeks to finish hardware installation of some parts when delivered
 - Control software needs to be done
- ▶ Completing calibration of detector response with new μ -wave source

◆ BES – collaboration with G. McKee (UWisc)

- ▶ Progress made on layout for viewing optics
- ▶ Plan to finalize choice of options by mid-April to start detailed design

◆ New longer wavelength version of LLNL UV spectrometer (XEUS) in place but requires P. Beiersdorfer to install grating

◆ N. Nishino of Hiroshima University visited PPPL to work on 2D plasma flow diagnostic with S. Paul

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RF Systems (*J. Hosea*)

- ◆ All antenna straps have been conditioned in vacuum to ~ 23 kV
- ◆ Plasma conditioning of the antennas coupled 2.75 MW in helium,
 ~ 2 MW in deuterium (MP-26)
 - ▶ Observed good $T_e(0)$ increase at $n_e(0) > 3 \times 10^{19} \text{ m}^3$.
 - ▶ Operation at lower density should provide high $T_e(0)$ and steep gradient needed for planned high-k scattering experiment.
- ◆ Arc over of rectifier terminals of HVPS for source #1 is being repaired
 - ▶ Plan to restart system by end of next week

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Physics Operations (*D. Mueller*)

- ◆ Operating with the new real-time computer
 - ▶ Fixed problems with corruption of data stream to power supplies
 - ▶ Now operating much more reliably than the previous system
 - Network communication issues have caused a few lost shots
 - ▶ Control signals to SPAs for EF/RWM coils restored
 - ▶ Fixed some minor bugs over maintenance period
- ◆ Performed additional bakeout of the vacuum vessel
 - ▶ Hot boronization at end
- ◆ Performed 2 additional boronizations (5g each)
 - ▶ Oxygen higher than last year and chlorine remains puzzling
- ◆ Good fiducial plasmas achieved
- ◆ Longest-ever 1.1MA shot obtained – flattop 0.26 – 0.9 s

Run Coordination (*M. Bell*)

- ◆ Officially started our 2008 run on February 18
- ◆ We have now used >25% of the planned runtime for 2008
- ◆ Preparation and review of XPs is proceeding
 - ▶ “Just-in-time” delivery is frequent
- ◆ Many of the experiments performed so far are not the highest priority within their TSG ranking
- ◆ TSG Leaders need to consider their strategy for using their remaining runtime allocation
 - ▶ Don’t rely on a possible future distribution of additional runtime to achieve your highest priority goals
 - ▶ A future allocation will be made after the “mid-run assessment”
 - ▶ In this market, “past performance” will be a significant determinant of future returns

Run Coordination (*cont.*)

XP	TSG	Proponent	Title	Rank	Run date(s)
811	ASC	E. Koleman	Vertical stability and performance limits in highly elongated tokamaks	4	2/22
609	BP	R. Maingi	Dependence of ELM size and power balance on magnetic balance	3	2/28
721	BP	R. Maingi	Comparison of small ELMs on C-Mod, MAST, NSTX	9	2/29
806	BP	S. Zweben	Edge Electrode Biasing	8	2/1, 21
801	MS	R. LaHaye	Beta ramp down 2/1 tearing mode: study of self-stabilization	1	2/19
804	MS	S. Sabbagh	Comparison of NTV among tokamaks (n=2 fields, nu _i scaling)	3	3/6
805	MS	S. Gerhardt	n = 2 intrinsic error fields and RWM critical rotation	6	¾
810	MS	R. Buttery	Error field sensitivitiy of 2/1 NTM onset thresholds at high and low rotation	1	2/20
817	SFS	R. Raman	Flux savings from Transient CHI	1	3/10, 11, 12

Run Coordination (*cont.*)

XP	TSG	Proponent	Title	Rank	Run date(s)
812	TT	S. Kaye	Impact of rotation on energy and impurity confinement	1	2/25, 27
813	TT	W. Solomon	Momentum transport using n=3 braking	3	3/13
820	TT	S. Kaye	Perturbative modulation of core rotation and assessment of core momentum transport	2	2/27, 3/14
-26	WPI	J. Hosea	HHFW Conditioning		2/26, 3/5
-54	WPI	W. Heidbrink	FIDA commissioning		2/18, 21
-48	XC	D. Mueller	Startup and assessment		2/18
809	XC	J. Canik	ELM Destabilization by RMP	2	2/29
818	XC	S. Sabbagh	ELM mitigation with midplane coils using different RMPs	1	2/22, 3/3, 7