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

- ◆ During January bakeout:
 - ▶ Calibrated 3 IR cameras
 - ▶ Checked out fixed-anode GDC system (Bays G, L)
 - ▶ Significant deposition occurred on quartz crystal monitors (3) during the temperature ramp-up
 - ▶ Did not boronize because of expected delay until operation
- ◆ Plan to perform hot boronization during bakeout early in run
- ◆ Expect delivery of probe drive in April for movable-anode GDC system
- ◆ Expect SGI to be ready at start of run
- ◆ LPI being reassembled and reinstalled to be ready for experiments early in run

Research Operations Division Diagnostics (*D. Johnson, R. Kaita*)

- ◆ MPTS should be ready with 20 spatial channels at start of run
 - ▶ Now working on additional 10 channels
 - Should be operational but may be uncalibrated at start of run
 - ▶ Need to perform Raman scattering calibration (50 – 100 Torr N₂)
- ◆ High-k microwave scattering
 - ▶ Performed spatial calibration of lines of sight prior to closing VV
 - ▶ Now fabricating & installing external components
 - Resolving some interferences with RWM leads
- ◆ New I_p rogowski coils fully shielded, calibrated
 - ▶ Ready for installation with OH solenoid
- ◆ Arranged new views for pellet camera, IR cameras, divertor cameras

Research Operations Division

Diagnostics [2]

Diagnostic	Changed capability	Availability (Start of plasma operation unless indicated)
Bolometer – tangential array		
Bolometer array - divertor		
CHERS		Needs Ne glow calibration
Divertor fast camera		At DIII-D until mid-April
Dust detector	Finer grid spacing	Commission early in run
EBW radiometers	Improved oblique view	In test. Remote limiter control not operational; needs gas feed
Edge deposition monitor	3 detectors	
Edge pressure gauges		
Edge rotation spectroscopy		May not be operated this run
Fast camera for RF antenna		
Fast lost ion probes - iFLIP		
Fast lost ion probes - sFLIP		
Filtered 1D cameras (4)		
Filterscopes		
FIReTIP		Needs testing
Gas puff imaging	100kHz Phantom-7 camera	Operational with reduced frame rate
High-k μ -wave scattering	New	Now fabricating, installing external systems; available late in run
Infrared cameras	3 rd camera	
Interferometer - 1 mm		Unavailable; plan to reinstall later in run
Langmuir probe array		
Magnetics - B coils		Need field-only calibration shots
Magnetics - Diamagnetism	New loop installed with Ip coil	Needs calibration at start of run
Magnetics - Flux loops		
Magnetics - Locked modes		Need field-only calibration shots
Magnetics - Rogowski coils	New fully shielded coils	Need field-only calibration shots

Research Operations Division

Diagnostics [3]

Diagnostic	Changed capability	Availability (Start of plasma operation unless indicated)
Magnetics - RWM sensors	Repaired	Need field-only calibration shots
Mirnov coils – high freq.		
Mirnov coils – poloidal array		Developing calibration from data taken in last run
Mirnov coils – toroidal array		
MSE	8 channels	
Neutral particle analyzer	Added new mini analyzer	
Neutron measurements		
PIXCS camera	Removed	Unavailable
Plasma TV	New filter wheel	
Reciprocating probe	New electronics	Ready but resolving interference with SGI
Reflectometer - SOL		Under repair; expect to be ready for plasma operation
Reflectometers - Core		Homodyne system under test, others operational
RF antenna Langmuir probe	New high-speed digitizers	
SPRED VUV spectrometer	New microchannel plate	
Thomson scattering	10 additional channels	20 channels at start of operation (after Raman scattering calibration); additional channels later
Ultrasoft X-ray arrays		
Ultrasoft X-ray optical array	Temporarily removed	Reinstall later in run
Visible bremsstrahlung det.		
Visible spectrom (VIPS-1,2)		
X-ray crystal spectrom - H		Reason for low signal unknown; install crystal for Fe line in May
X-ray crystal spectrom - V		Testing
X-ray pinhole camera		
X-ray TG spectrometer	Removed	Unavailable

Research Operations Division

RF Systems (*R. Wilson*)

- ◆ Reminder: the RF antenna protective tiles are moved inwards by 5mm compared to last run
- ◆ All HHFW and ECPI sources are ready, *but*
 - ▶ Cannot operate HHFW sources until repairs are finished on heat exchanger for C-Site cooling water
- ◆ Fixed sporadic problem with interlocks
- ◆ Installing waveguide run to inject ECPI into lower divertor chamber for CHI

Research Operations Division

Physics Operations (*D. Mueller, D. Gates, R. Raman*)

- ◆ Upgrading control system to prepare for FY'05 experiments
 - ▶ Update PF1A, magnetic sensors and vessel model used for rtEFIT
 - ▶ Real-time data acquisition for internal B_r , B_θ coils
 - Using new PPPL-designed digitizers
 - ▶ Adding capability to control SPA for RWM
 - Planning for initial control tests this month
- ◆ Preparing for CHI experiments
 - ▶ Qualifying capacitor bank and other components for 2kV operation
 - ▶ Installing ignitron switch to reduce CHI voltage rapidly
 - ▶ New ports to inject gas and ECPI into lower divertor chamber