

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

- ◆ Analyzed samples of carbon PFCs at the Imaging and Analysis Center of the PRISM on main campus
  - ▶ Cores cut from outer upper, lower divertors and upper passive plate
    - Metals (Fe, Cr) apparent on plasma facing surface, comparable amount top and bottom
  - ▶ Bay I-J midplane silicon coupons exposed during run periods
    - Coupon from 2007 showed metals; 2006 coupon **did not**
- ◆ Samples then analyzed after applying different cleaning techniques
  - ▶ Laser-based cleaning did reduce surface contamination *but*
  - ▶ Mechanical method (mildly abrasive pads) was more effective
- ◆ Now completed cleaning of all PFC tiles, most *in situ*
- ◆ Evaporated lithium remaining after run from LITER-1 in L-245 chamber
  - ▶ Measured evaporation characteristics

# Research Operations Division

## Boundary Physics [2]

- ◆ Proceeding with plans to install second LITER at Bay K upper
  - ▶ Displace the Movable Glow Probe
    - Substitute a fixed probe at Bay K midplane
  - ▶ Provide interlocked shutters to prevent coating diagnostic windows
  - ▶ FDR set for Thursday 10am B318
  
- ◆ Liquid lithium divertor module
  - ▶ R. A. Ellis III visited SNL and met with collaborators there to discuss the schedule, plans, and thermal simulations
  - ▶ R. Nygren (SNL) visited PPPL last week for discussion
  - ▶ Concerns about providing uniform filling of proposed mesh
  - ▶ A. Brooks performed simulations of eddy currents and e.m. forces based on measured NSTX data provided by S.Gerhart
  - ▶ CDR delayed until December

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## Research Operations Division

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

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- ◆ **P-CHERS/FIDA** installations proceeding well
  - ▶ Expect to be ready for calibration in second half of October.
- ◆ **Halo current sensors** will be installed this week
- ◆ **Remote control of High-k scattering mirrors** ready by start of run
  - ▶ Modifying collection mirror mount to permit full scanning capability
- ◆ **Divertor bolometer upgrade**
  - ▶ Plan to have views at Bay I lower and Bay J midplane installed
  - ▶ Unlikely that Bay J top installation will be ready in time
  - ▶ Delivery of detectors and vacuum components expected mid-October
- ◆ **MPTS calibration probe**
  - ▶ Provide in-vessel light source to monitor MPTS window transmission
  - ▶ Should be installed before pump down

# Research Operations Division

## Diagnostics [2]

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- ◆ Cleaned tile-mounted Langmuir probes and repaired damaged sensors
- ◆ Testing of diagnostic hardware to be sent to ASIPP is proceeding slowly
  - ▶ 20 channel ECE grating polychromator (TFTR)
  - ▶ NPA
  - ▶ Ge detectors for PHA

## Research Operations Division RF Operations (*J. Hosea*)

- ◆ HHFW antenna inspected and 2 straps removed
  - ▶ Found lithium on Faraday shield, current straps and backplates
  - ▶ Also, "dust" attached to Faraday shield and inside antenna boxes
  - ▶ No deposition evident on feedthrough ceramics
  - ▶ Observed some arc tracks but no major arc damage
- ◆ Decided to remove the dust and reassemble the antenna
- ◆ Designing protection for nuts on mountings of antenna end plates
- ◆ Plan to modify antenna to reduce electric stress during next opening
  - ▶ Antenna will be thoroughly cleaned at that time
- ◆ Held an ECH/EBW upgrade design meeting at ORNL August 22 – 23
  - ▶ All parameters and components were agreed upon
  - ▶ Satisfies FEA F(07-2) and permits integrating system fully into NSTX

# Research Operations Division

## Physics Operations

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- ◆ Plan to return to operation with new control computer system
  - ▶ SkyBolt system will be retained as backup
  - ▶ Bugs and issues revealed in tests of new system are being corrected
  - ▶ Gas system will be integrated
- ◆ Developing capability for NBI power control for next run
  - ▶  $\beta_N$  feedback should be straightforward
  - ▶ Rotation control eventually

## Research Forum for FY'08 Run

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- ◆ The Research Forum to plan NSTX experiments in FY'08 will be held  
**Tuesday - Thursday November 27-29, 2007 at PPPL**  
(in the week after Thanksgiving)
- ◆ Begin on Tuesday morning and finish around noon on Thursday
- ◆ Participation both in person and remotely is welcome and encouraged
- ◆ Milestones for FY'08 research are being finalized
- ◆ Proposals are sought for experiments to address the milestones and other research of high value and interest
  - ▶ Both new experiments and continuations of existing ones will be considered
- ◆ Arrangements and a provisional agenda will be distributed in October
- ◆ The organizational structure for FY'08 including the run coordinator & other leaders will be announced shortly