

Weekly Report for 09/01/2014

Highlights

- Completed a technical note "Power distribution from APS dipole fringe field". (Kathy Harkay)

APS Renewal and Upgrade

- Worked on faster kicker pulser output impedance issue with the vendor (FID). (Chih-Yuan Yao)
- Discussed beam losses and radiation calculations that need to be done for the MBA machine with Nancy Grossman, Glenn Decker, and Jeff Dooling. Also discussed requirements for a beam abort dump. (Kathy Harkay)
- Continue IBS simulation under different parameter settings. Some jobs failed due to the file system issues. (Aimin Xiao)

MCR Operations

Storage Ring Operations

- Investigated beam losses, informed/discussed the relevant issues with the appropriate groups during previous two weeks. (Karen Schroeder)
- Compiled list of work done during the shutdown which could or would affect the storage ring. (Karen Schroeder)
- Kept user at 6-ID and Marty Smith informed when the SCU0 did not turn back on after the LHe pressure dropped to the return value after a quench during beam losses during the previous two weeks. (Karen Schroeder)
- Planned for maintenance and upgrade work on the P0 feedback frontEnd box and one of the amplifiers. (Chih-Yuan Yao)
- Requested ray tracing for ID1/SCU1 with a photon absorber aperture of 17.45 mm. (Kathy Harkay)

Booster Operations

- Investigated booster corrector water leak problem with MOM, PS and MECH groups and proposed solutions. (Chih-Yuan Yao)

Linac Operations

- Tuesday, completed the annual review of the 411 A103 Laser Controlled Area with E. Chang (AES-ADM) and B. Broocks (ANL-LSO). Operating permit was renewed. (Jeff Dooling)
- Met with technicians from MOM (M. Martens) and DIA (P. Dombrowski) to coordinate laser portion of pgun installation. (Jeff Dooling)

Training

- Gave in tunnel portion of SR walkthrough qualification test to one operator. (Karen Schroeder)

MCR Operations administrative/misc.

- Prepared downtime report and either presented it myself or gave to Flood for presentation to OPS Directorate during previous two weeks. (Karen Schroeder)
- Reviewed and approved non-RSS SR work requests. (Karen Schroeder)
- Sent out notices regarding junk which needed to be surveyed and removed from the tunnel found during my SR walks to both individual groups and the general shutdown planning e-mail list. (Karen Schroeder)

Schroeder)

- Reviewed new and updated SR/floor coordinator related duties procedures and entered them into required reading if necessary. (Karen Schroeder)

APS Machine Studies

Storage Ring Studies

- Performed ID gap scans to update gap feedforward tables and restored any X-ray BPMs which had been removed for steering (during the previous two weeks). (Karen Schroeder)
- Updated study schedule with late requests (during previous two weeks). (Karen Schroeder)
- Worked on FO BLM calibration technical note, modifying fitting scripts to incorporate recommendations from L. Emery. The new model incorporates single parameters for linear response, saturation, and transition between the two regimes. (Jeff Dooling)

APS Machine Research and Development

Storage Ring Research and Development

- Calculated requirements for a vertical pinger requiring 1 mrad of deflection; found this is very difficult to achieve with a stripline (E-field). Present stripline provides only 10 microradian of deflection. (Jeff Dooling)
- Calculated effect of BM fringe field on radiation power incident on ID transition at an extreme orbit. Sent E. Trakhtenberg and J. Grimmer an estimate of the power on the upstream ID transition. Wrote a technical note on the fringe field effect with co-authors C. Doose and V. Sajaev. (Kathy Harkay)
- Working on calculating the radiation power incident on the SCU1 for orbit errors. (Kathy Harkay)
- Calculated single bunch trajectories for Ju Wang's new abort kicker waveform. Results look very good. (Kathy Harkay)
- Developing script to determine ID field error from measured orbit response. Will be summarized and submitted. (Aimin Xiao)

Booster Research and Development

- Planned for 1 Hz ramp test during next run period and discussed with PS and Control groups. (Chih-Yuan Yao)
- Continued work on feedthrough simulation for the fast kicker with COSMOTEC and Xiang. (Chih-Yuan Yao)

Other Research and Development

- Electron Cloud: Discussed QE data analysis with L. Boon and R. Rosenberg, who gave us many comments and suggestions. He agrees that using an oxide layer is better than carbon, but to use theoretical reflectivity data with caution since it is not a uniform layer. He also gave us a folder with references to browse. (Kathy Harkay)

APS Machine Software

AOP Applications Software

- Fixed a bug inside "compute_centroids" code. Added details to prevent running errors. (Aimin Xiao)

- Updated touschekScatter calculation to prevent it runs without "run_control" is executed. Updated elegant manual. (Aimin Xiao)

General

- added fresnel sine and cosine integration to gsl and rpn, tested and installed. (Hairong Shang)
- continue working on complex pseudoinverse. (Hairong Shang)

Meetings, workshops, conferences, committees, LMS related, and reviews

- Attended shutdown planning meetings in previous two weeks (Karen Schroeder)
- Attended annual evacuation drill meeting for AES's and participated in the drill during previous two weeks. (Karen Schroeder)
- Attended S30 ID vacuum chamber installation readiness review during previous two weeks. (Karen Schroeder)
- Presented progress report at monthly injector meeting. (Chih-Yuan Yao)
- Participated in a Diffraction Limited Storage Rings workshop organizing committee meeting. (Kathy Harkay)

Education, Mentoring and outreach

- Prepared 2014 Annual Report for NSF grant supporting L. Boon. (Kathy Harkay)

Miscellaneous

- Annual leave September 5th. (Jeff Dooling)