

Weekly Report for 03/03/2014

Highlights

- The new APS Photocathode RF gun is conditioned to its RF parameter goals. (Yin-e Sun)

APS Renewal and Upgrade

- Doing injection design for the new MBA lattice 3PWV4. Including requirement from L. Morrison. (Aimin Xiao)
- Performed perturbation simulation on the stored bunch. (Aimin Xiao)
- Updated work assumption document with more realistic parameters. (Aimin Xiao)
- Updated poster for the SAC meeting. (Aimin Xiao)

MCR Operations

Procedures

- Emergency Shut-Down for the Radio-Frequency (RF) Building Deionized Water System (APS_1193012) (Randy Flood)
- Personnel Safety System (PSS) Fault Reset (APS_1273833) (Randy Flood)
- Use of Beamline Global Online Keys (APS_1186603) (Randy Flood)
- ACIS Storage Ring Tunnel Search (APS_1193981) (Randy Flood)
- Rewrote and completely updated Operator Qualification (APS_1193009) (Randy Flood)
- Temporary Use of Operators during Maintenance Periods (APS_1421063) (Randy Flood)

Training

- Introduction to Incident Command System ICS-100 (Randy Flood)
- ESH131 Area Emergency Supervisor (Randy Flood)
- Provided re-qualification test to MCR operators. (Stan Pasky)

MCR Operations administrative/misc.

- Handled administrative actions dealing with a former operator and posting a new operator position (Randy Flood)
- Approved operators' time cards (Randy Flood)
- Approved vacation requests, set up coverage and updated the online schedule (Randy Flood)
- Approve CTLs, IT and Other work requests (Randy Flood)
- Review and clean the asdops mail account at least twice (Randy Flood)
- Check the status of open RMD's (Randy Flood)

APS Machine Studies

Storage Ring Studies

- Participated in SCU0 BLM studies with K. Harkay investigating whether IK5 can reduced the radiation loss at the cryostat. (Jeff Dooling)
- Successfully tested IEX IOC reboot with beam with M. Smith. (Aimin Xiao)

Linac Studies

- Participated in the Injector Studies planning meeting Tuesday. (Jeff Dooling)
- Participated matching for the RG1 beam. Manually adjusted three quadrupoles and a set of horizontal/vertical steering magnets to get better focused beam at L3:FS3, L3:FS4 and L3:FS5. Using the three-screen emittance measurement tool to measure the beam emittance and optimize quadrupoles for better lattice functions. (Yin-e Sun)

ITS Studies

- Worked on the PC gun RF conditioning. Full RF parameter goals are achieved (12MW forward power at 30Hz rep rate and 2.5us rf pulse length). Started working on turning on the solenoid and continuing RF conditioning at various solenoid settings. (Yin-e Sun)
- Obtained systematic measurements from the PMT. During the RF conditioning as we increase the RF power, we had to add filters to the PMT signal twice. PMT signals are well correlated with the RF power into the gun. Data to be processed. (Yin-e Sun)
- PCGun rf conditioning. (Stan Pasky)

APS Machine Research and Development

Booster Research and Development

- Assisted with earth water issues in the Booster tunnel. Coordinate a clean up and repair approach. Booster tunnel cracks will be repaired during the April / May maintenance period. (Stan Pasky)

ITS Research and Development

- Began PCGun conditioning. Restricted from ITS for laser work. (Jeff Dooling)
- Recorded uv image profiles in the laser transport box as the distance between the transport box telescope lenses were varied. (Jeff Dooling)
- Installed a x-position translation stage under the first of the irises in the transport box. (Jeff Dooling)
- By delaying the PC2 triggering by two cavity round trip times (26 ns) found I could reduce the pump diode current down to 175 A while still maintaining 4 mJ per pulse in the IR. (Jeff Dooling)

APS Machine Software

Storage Ring

- fixed a bug in obtaining value of turns from the RAM waveform file in FPGABpmTurnHistory. Reprocessed the 1-turn data for SR feedback simulation which was mistakenly processed as 12-turn data in FPGABpmTurnHistory. (Hairong Shang)

Injectors

- improved fixramplv through redefining rawdata as double instead of unsigned short to remove the sparks caused by negative values in converting to old waveforms. (Hairong Shang)

- increase the start/stop correction limit for QD of BRampControlAutoCorrection to avoid over correcting (Hairong Shang)
- CY decided to separate bcontrol from fixrampcurrent, modified fixrampcurrent for this purpose and wrote fitramp to compute the gain and delay as bcontrol's readbacks to adjust the trigger gain and delay. Tested with CY, not much improvement. (Hairong Shang)
- Improved AcquireITSPCGunConditioningData per Yine's request: 1) added -oncaerror=usezero option to sddsmonitor so that it still collects data when there are channel access errors, for example, some pvs do not exist. 2)modified to print the "Description" column in the last to make the printouts lined up because "Description" can be very long sometimes, and made it left-adjusted. (Hairong Shang)
- continually improve AcquireITSWaveforms for acquiring ITS waveguide and gun-probe waveform data as ITS conditioning is in process. 1) improved the criteria for collecting ITS gun waveguide and probe data to avoid collecting data from scope when there is no signal. 2)made multiple plots work for ITS Waveguide and GunProbe. 3)added png and eps output for overlap plotting, and added the ability to automatically change the output file by increasing the index. 4)fixed a bug in plotting ITS_GunProbe. 5) fixed a bug in popup window for figure directory. 6)added printing reflected power to waveguide plots. 7) (Hairong Shang)
- Worked with Yine and control guy on tekdp04 scope to get it work, it was confirmed to be broken. Replaced it by tekdp05, however, it only worked for wave guide. No signal was shown for gun probe on the scope yet. (Hairong Shang)
- Updated Injector Test Stand MEDM screen for PCGun conditioning.. (Stan Pasky)

General

- added setting the scope output data type to ASCII before reading the waveform data to getTek5000BScopeData, which should be there to make sure it works when reading waveform data from scope directly. And fixed bug in post-processing for channel 3 and 4 data and added channelList argument to read desired channels. (Hairong Shang)
- added "SR BPM Offset Adjustment" to SR routine operation menu to OAGapps gnome menu (Hairong Shang)

Simulation Software

- updated SRCorrNoiseModel and SRFeedbackSimulation to work with new data, separated the directory selection list for horizontal/vertical plane to avoid confusion, and debugged the problem that Nick Sereno had, helped Nick with his feedback simulation. (Hairong Shang)

IOC/EPICS/Controls/Linux/Solaris/Linux Clusters/Data Loggers/Simulation software

- Administer the EPICS CVS repository to ensure current versions are installed and conflicts are tracked down and eliminated. (Randy Flood)

Publications, papers and report

- Submitted Tech Note AOP-TN-2014-011, entitled "Preliminary Time Response Comparison of Fast Beam Loss Monitors with BPM Signals during Beam Dumps," with R. Lill (ASD-Diag). (Jeff Dooling)
- Working on Tech Note discussing material selection for the S37 scraper. (Jeff Dooling)

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

- Participated the Radiation Safety Policy and Procedures Committee (RSPPC) meeting Wednesday

discussing ACIS functional change to radiation monitors located in the 420 rf test stand. (Jeff Dooling)

- reviewed a paper for Applied Physics Letters. (Yin-e Sun)
- held a photo-injector Physics meeting. (Yin-e Sun)
- held a Injector Study period planning meeting. (Yin-e Sun)
- Participated in RSPPC review of proposed ACIS change to ADM-610 response (Randy Flood)
- Attend the controls, planning, ops directorate and AOP meetings (Randy Flood)

Safety and Required Training

- Monday, completed SEC101 training. (Jeff Dooling)

Miscellaneous

- Provide elegant run support on touschek lifetime calculation to users (Aimin Xiao)
- Develop operating and test schedules for the Injectors as well as the Injector Test Stand. (Stan Pasky)