

# Weekly Report for 01/04/2016

## Highlights

- Over seeing work activities during the December/January maintenance period. (Stan Pasky)
- Linac L6 waveguide installation to the Injector Test Stand. MEDM Screen updates. (Stan Pasky)
- L2:AS1 accelerating structure installation. (Stan Pasky)
- L1:PC1:SC3 corrector installation and testing. (Stan Pasky)
- PAR new vacuum pump and controller install. MEDM screen update. (Stan Pasky)

## APS Renewal and Upgrade

- Worked on a simple MARS model to examine beam-loss radiation levels in the tunnel and compare with MCNPX. (Jeff Dooling)
- Attended MBA radiation and accelerator physics meetings. (Jeff Dooling)
- Analyzed simulation results of different collimator configurations for MBA lattice. Identified several run issues and summarized beam loss at ID straight, collimator locations, Injection section, etc. Presented results on the beam loss working group meeting. (Aimin Xiao)
- Planned for booster 1Hz long ramp test, which involves new main ramps, corrector ramps and RF ramp with Frank, Shifu, Doug and Hairong. (Chih-Yuan Yao)
- Continued to work with COSMOTEC to finish the specs and drawings of both HV feedthrough and air-side connectors. (Chih-Yuan Yao)
- Worked with Xiang, Frank Westferro and Argonne Physics Dept on the blade optimization of the fast kicker prototype. (Chih-Yuan Yao)

## MCR Operations

### Storage Ring Operations

- Investigated a calibrate failure of the hpvecsr VSA, which happened after a battery replacement. The unit still functions even with the fault. (Chih-Yuan Yao)
- Worked with Hairong to modify the application so it works on the old scope with the Ethernet adapter. (Chih-Yuan Yao)

### Linac Operations

- Met with A. DiChiara (XSD-TRR) and discussed drive laser beam propagation measurements to assess ways to control spot size. (Jeff Dooling)
- Working with M. Hahne, refocused the Linac Transport camera on the alignment screen in the tunnel. (Jeff Dooling)
- Tested the low-power laser alignment test procedure APS-1865105 with K. Belcher and S. Shoaf. PV names had again been changed by SI since September 2015 when the last change was made, so we were unable to complete the test. (Jeff Dooling)
- Trying to assess the problem with the pgun. Organized a meeting with AES personnel including the lead engineer to discuss the path forward. (Jeff Dooling)
- Survey work will continue to assess mechanical alignment. Once survey data has been collected, will meet again with AES to review. (Jeff Dooling)

- analyzed data collected during last injector study period and found the horizontal and vertical steering needed in the pc gun front end beamline in order to send beam through the linac. Called meetings to discuss PC gun alignment. (Yin-e Sun)
- Discussed with RF and survey group about the alignment of the newly replaced L2:AS1 and beamline elements upstream. (Yin-e Sun)
- worked with power supply group to check the polarity of the newly installed steering magnet and rectified the wiring of the 3rd steering magnet in the pc gun beamline. (Yin-e Sun)
- discussed with water and RF group people, called a meeting to discuss a solution which decouples the the cooling water used for klystron-6 waveguide run to the ITS from linac operations. (Yin-e Sun)
- Worked with power supply group people to measure the ramp up and down time needed for the thermionic rf gun alpha magnets and their trims. Measured the residual fields and found the currents needed from the trim magnets to buck the main alpha magnet remnant field. (Yin-e Sun)

## Procedures

- Validation of the Storage Ring Dipole Interlocks Indicating the Magnet Fields are Operating above 6 GeV (APS\_1192186) (Randy Flood)
- Personnel Safety System (PSS) Fault Reset (APS\_1273833) (Randy Flood)
- ACIS Storage Ring Tunnel Search (APS\_1193981) (Randy Flood)
- ACIS PAR RF Bypass (APS\_1194656) (Randy Flood)
- LOTO for Gespac Control Power Upgrade/Replacement (APS\_1269780) (Randy Flood)
- Accelerator Work for the IT Group (APS\_1195114) (Randy Flood)
- Escorted Entry to Accelerator System Controlled Areas during ACIS Access Modes (APS\_1441621) (Randy Flood)
- Injector Test Stand Controlled Access (APS\_1666796) (Randy Flood)

## Training

- Lockout/Tagout Annual Review Practical Factor ESH114PR (Stan Pasky)
- ESH114PR (Randy Flood)

## MCR Operations administrative/misc.

- Compiled operational statistics (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)

## APS Machine Studies

### Booster Studies

- Make plan for injector studies with Joe and Kathy. (Chih-Yuan Yao)

## APS Machine Research and Development

### Linac Research and Development

- simulated PC gun rf phase scan using ASTRA. (Yin-e Sun)

## APS Machine Software

### 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)

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

- Participated in L2:AS1 planning meeting (Randy Flood)
- Presented stats and operational issues to Ops Directorate meeting (Randy Flood)
- Called a Photoinjector physics meeting. Presented injector studies results, and related ongoing linac tunnel work. Presented physics solution to the interleaving on RF. (Yin-e Sun)

## Safety and Required Training

- Completed ESH114-PR LOTO training. (Jeff Dooling)
- Took safety training on EQO140 and HR720 (Aimin Xiao)
- completed several required training courses. (Yin-e Sun)