

Machine Update

NSLS Town Meeting

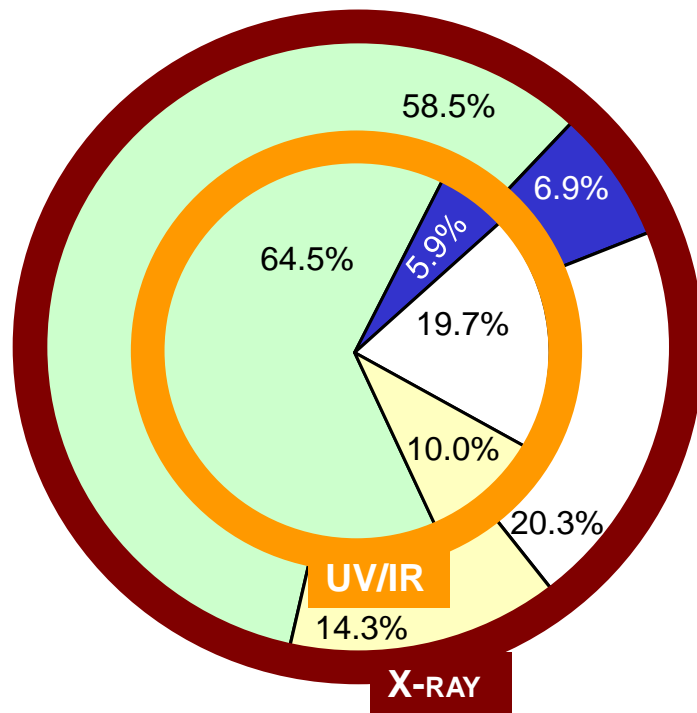
Emil Zitvogel

Wednesday, August 15, 2012

Topics

- Statistics
- May Shutdown Activities
- Fall Schedule
- Modified September Start Dates
- August/September Shutdown Tasks
- Transverse Beam Profile Monitor in VUV Ring
- VUV Injection Model
- X-Ray Down-Ramp
- Closing Remarks

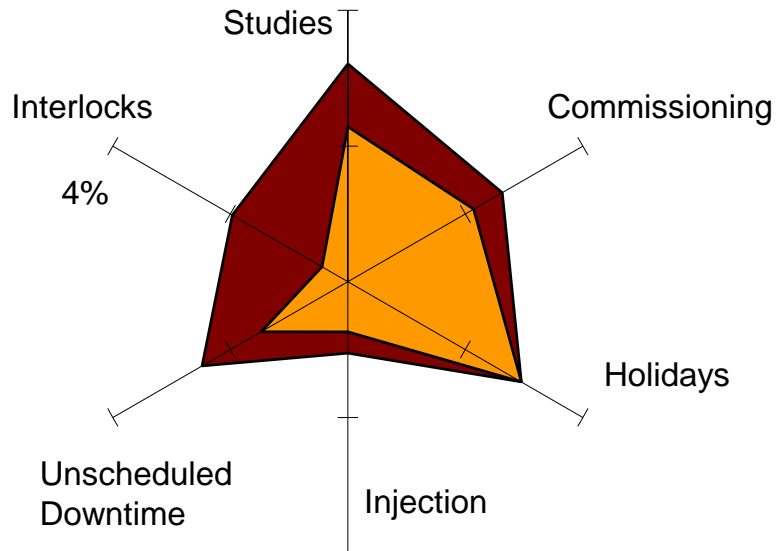
FY2012 Statistics Through July 31



Activity /Hours	UV/IR	X-ray
Operations	4717.9	4280.1
Unscheduled Operations	429.6	507.9
Maintenance	1438.4	1486.0
Other	734.1	1045.9

Other Activities	UV/IR	X-ray
Studies	2.3%	3.2%
Com/Con	2.1%	2.6%
Holiday	3.0%	3.0%
Injection	0.7%	1.1%
Unscheduled Downtime	1.5%	2.5%
Interlock	0.4%	2.0%

YTD 7320 Hrs 100 Hrs= 1.4%



User Metrics	UV/IR	X-ray
Reliability	97.8%	95.9%
Availability	106.7%	107.3%



May Shutdown Activities

- BUESH2 magnet lead repair
 - The copper lead failed prior to the shutdown
 - Since this failed several times, a new piece was made using Glidcop (more resistant to mechanical fatigue and failure)
- Trane Chillers were rebuilt and sealed using epoxy
- Preventative Maintenance for 3 of 4 electrical substations
- X17 cryo maintenance
 - Found broken lead in a heater in the purifier
 - May have caused insufficient purging of impurities
 - Operated well since this repair
 - Keeping to full warm-up (12 days) every other monthly maintenance

Fall Schedule

X-Ray										FY2013														
Week	August				September					October				November				December						
Beginning	5	12	19	26	2	9	16	23	30	7	14	21	28	4	11	18	25	2	9	16	23	30		
Sunday	O	O	M	M	M	M	M	C	O	O	O	O	O	O	O	O	M	M	M	M	M	M		
Monday	O/S	O/M	M	M	H	M	M	B	O/S	O	OIS	O/S	O	OIS	O/S	O	M	M	M	M	H	M		
Tuesday	S/T	M	M	M	M	M	M	O	S/T	O	S/O ¹	S/M	O	S/O ¹	S/T	O	M	M	M	M	H	M		
Wednesday	O	M	M	M	M	M	M	O	O	O	O	M/C	O	O	O	O/M	M	M	M	M	M	M		
Thursday	O	M	M	M	M	M	I/C	O	O	O	O	S/O ¹	O	O	O	H	M	M	M	M	M	M		
Friday	O	M	M	M	M	M	C	O	O	O	O	O	O	O	O	H	M	M	M	M/H	M	M		
Saturday	O	M	M	M	M	M	C	O	O	O	O	O	O	O	O	M	M	M	M	M	M	M		
										☑														

Full winter shutdown in the face of expected challenging budget allocation

Modified September Start Dates

- Since time was lost in July, we will start earlier than planned in September with unscheduled ops
- VUV start-up moved to afternoon of Weds 9/12
- VUV unscheduled ops beginning Fri 9/14 noon
- X-ray start-up moved to Thurs 9/13 evening following interlock checks
- X-ray unscheduled ops beginning no later than Mon 9/17 at 8 am
- Experimental water will be started on Sept 4th at 8 am

August/September Shutdown Tasks

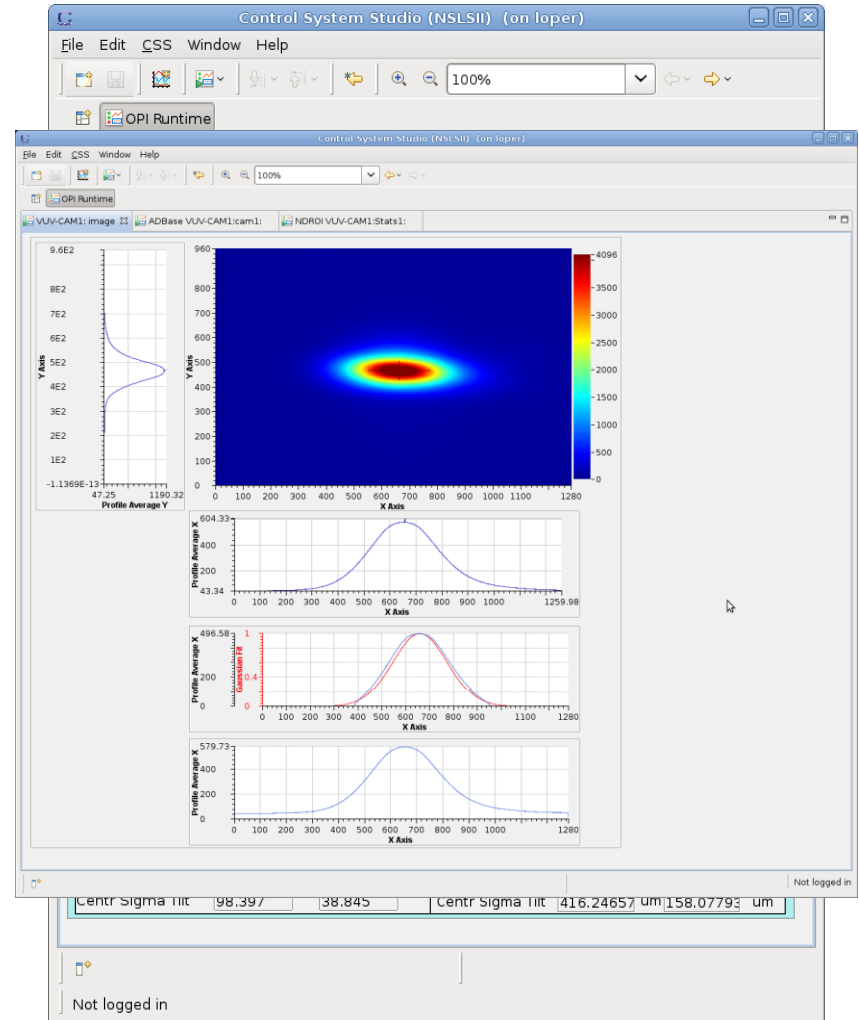
- RF Preventative Maintenance
- Power Supply PM
- Main Magnet PM
- Poly-Flo Air and Water Line Change
- Proteus Maintenance
- Filter Maintenance
- BAC Cooling Tower Bearing Replacement & PM*
- Long List of Other Utilities PM
- Linac/Booster Quad Power Supply Replacement

* Depends on the resolution of fixed ladder use



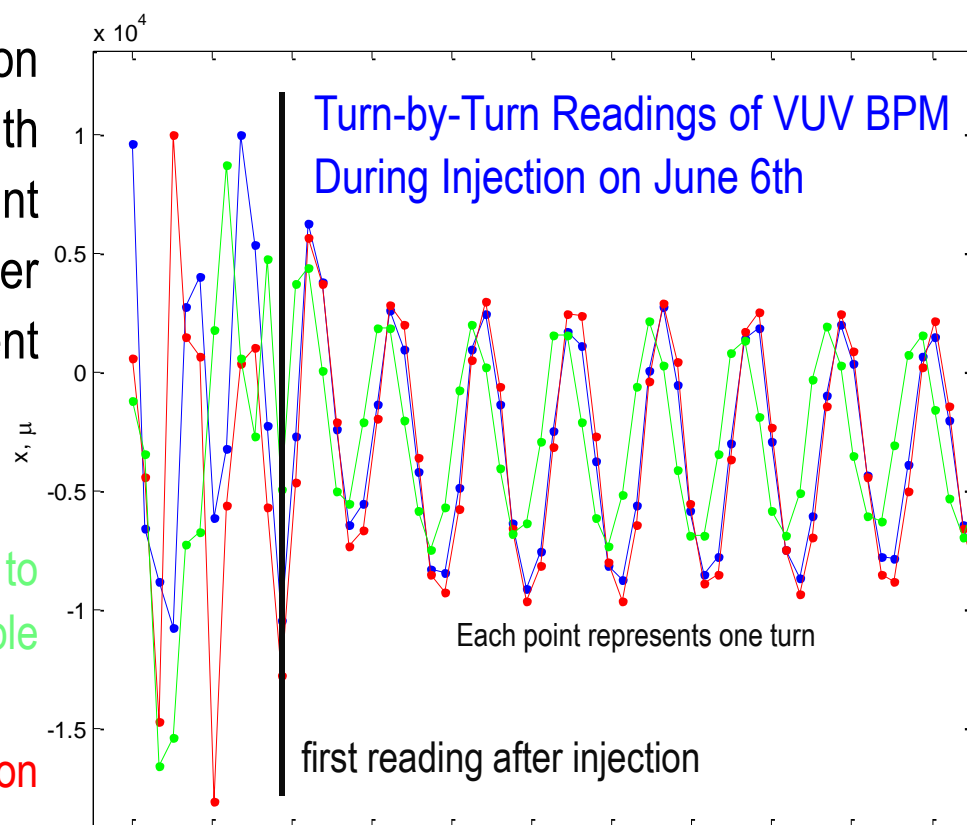
Transverse Beam Profile Monitor in VUV Ring

- A new Beam Profile Monitor was installed in the VUV ring.
- Driving force is that upon failure of current beam profile monitor, there would be no backup system for beam profile diagnostic.
- O.Ivashkevych, Y.Hidaka, and ZY (Z.Yin) developed, installed and tested a new EPICS-based imaging system using NSLS-II Control System Studio.
- Cost of the hardware \$1300



VUV Injection Model

- The interactive VUV injection model based on turn-by-turn diagnostics installed in the ring is a valuable diagnostic tool allowing detailed analysis of the ring injection settings.
- When the recent VUV injection problems began, our model, along with other diagnostics, helped us to pinpoint the source of the problem as booster extraction, and provided a convenient way to compare results of tuning.
 - injection recorded at nominal settings
 - problem injection (analysis has pointed to the Booster extraction as a most probable source of the troubles)
 - injection recorded after Booster extraction was tuned



X-Ray Down-Ramp

- Using Hall Probe data, Yi Yang has reversed the up-ramp to

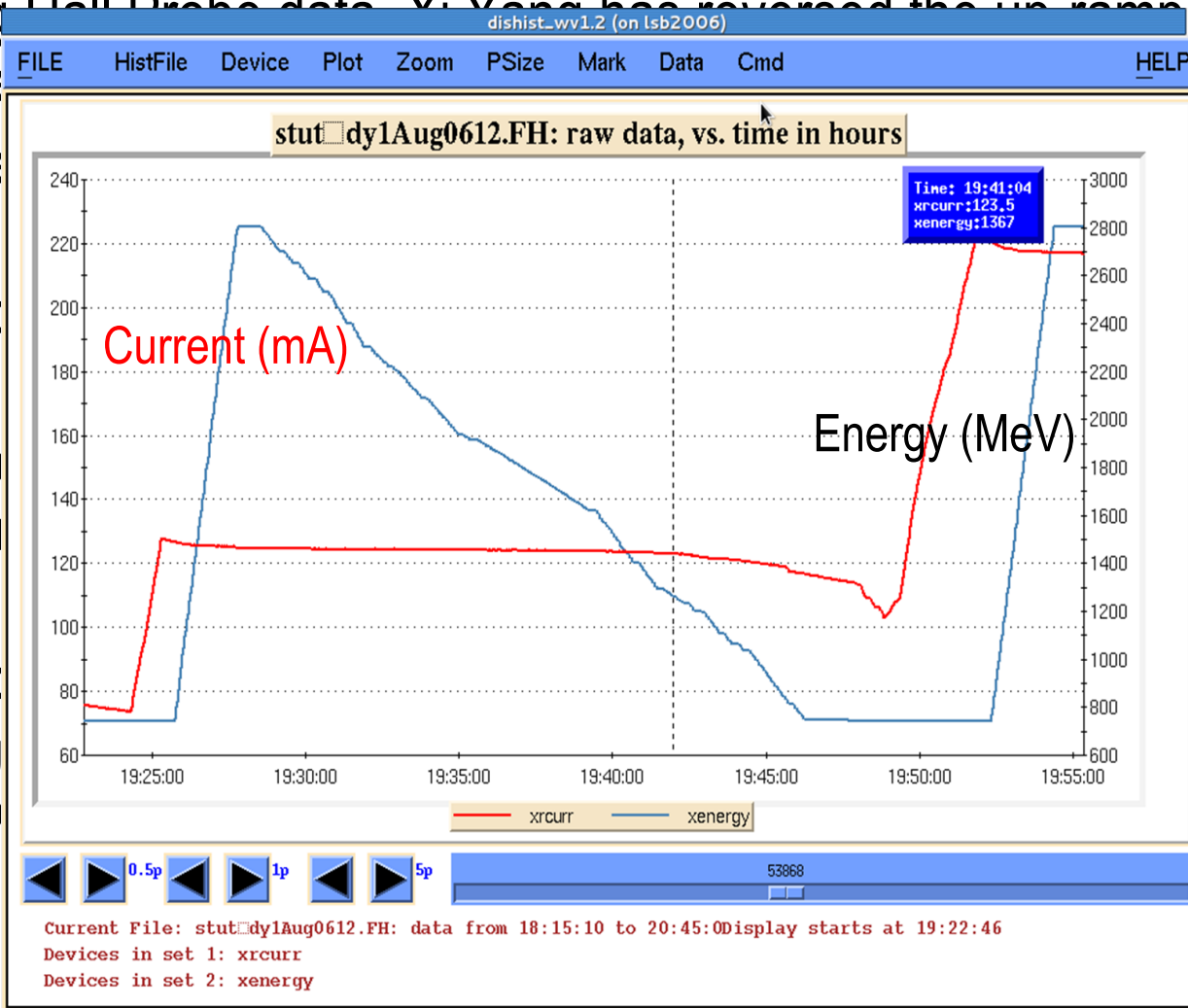
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Closing Remarks

The Photon Science staff continues carry out an effective preventative maintenance program that will take us to the start of NSLS-II

Our Accelerator Physics staff continues to look for ways to improve operations in the face of tight budgets

Thank you.