Bubble Chamber Schedule – 2017

February 9, 2017

1st Pass at Injector Summer SAD 2017 Calendar

#	Week	CEBAF	Float	4-LLRF	Bubble	Parity Beam	Upgrade Gun
0	20-Mar	Spring Run					
1	27-Mar			4-LLRF Installation	Installation		
2	3-Apr			4-LLRF Beam	Installation		
3	10-Apr				Bubble Run		
4	17-Apr		Float				
5	24-Apr					Beam #1 Spot Size	
6	1-May						Gun 2 v. ITS
7	8-May						Gun 2 v. 200kV
8	15-May		Float				
9	22-May					Laser opportunity	Modify Gun2/Gun3
10	29-May					Laser opportunity	Bake
11	5-Jun						Prep/HV Commision
12	12-Jun						Beam Commission
13	19-Jun						200kV Commission
14	26-Jun					Laser opportunity	Backout Point
15	4-Jul					Laser opportunity	
16	11-Jul		Float				
17	18-Jul					PQB Laser	
18	25-Jul					Beam #2 RTP	
19	7-Aug				Bubble Run		
20	14-Aug				Bubble Run		
21	21-Aug		Float				
22	28-Aug	INJ/NL HCO					
23	4-Sep	4-Beam Setup					
24	11-Sep	Restore CEBAF					

Bubble Chamber Experiment

I. Chamber has been modified to use only one liquid as both active and buffer – no more mercury
II. Testing has started and plan to be ready by end of March
III. Chamber is expected at JLab in April 2017

IV. April run plan:
- 1 week to install and 1 week of beam (day + swing)
- Active liquid is C_2F_6 (very similar operating parameters as N_2O)
- Beam energy: 4 – 6 MeV
- Beam current: 1 nA – 100 μA
- Prefer to run with RF at 2K but willing to try 4K

V. Keep chamber installed at 5D line
VI. Plan to run again C_2F_6 in August: 2 weeks of beam (day + swing)

Bubble Chamber Tasks:

1. Implement 5 MeV dipole precision DCCT current readback
2. Measure beam position on radiator – use x-ray fluorescent screen
3. Approved to run 10 μA CW and total energy of 10 MeV – needs approval to run at 100 μA
4. Calibrate BCM and measure nA beam currents
5. Re-isolate radiator to measure beam current
6. Survey 5D line (radiator and collimator)
7. Replace lead shielding with copper and iron bricks
8. Test the bubble chamber Gumby laser shutter