

HERA-Shutdown planning

1. What has to be achieved before start of shutdown?

Prior.	Topic	est. time
1	H1 and ZEUS have understood backgrounds in a quantitative way
1	H1 and ZEUS have a solution for the background problem
1	Preparations for shutdown are ready
1	Demonstrated improvement of dynamic vacuum (beam bake-out)	2? weeks
1	HERA has demonstrated high specific luminosity for high bunch currents with understanding of background conditions	2 weeks
2	HERA can run with polarisation tunes	1 week
2	HERA has demonstrated polarisation	4 weeks
2	HERA has demonstrated high positron currents $I_e > 40\text{mA}$, end of running period (in case of damage)	1 week
3	HERA has demonstrated high electron currents (canc. in plan)	6 weeks
2	HERA has demonstrated high proton currents	1 week
1	All 4 experiments have sufficient data to demonstrate that the individual components are running or that it is understood what has to be changed to make them running
2	HERAb has obtained x % of their promised running
3	Physics data for HERMES
3	Physics data for H1/ZEUS
Sum (without any contingency) (2+xx + 8 + 7)		17+xx weeks

2. Work list shutdown? (incomplete)

-	Inerlock tests	
-	HERA work	
-	H1 repairs/installations	16 weeks
-	Modification of collimators	
-	Repair of CIP electronics;	
-	Installation of VFPS	
-	ZEUS repairs/installations	12 (20) weeks
-	Modification of collimators	
-	Long shutdown: repair of STT (in schedule 16 weeks!)	(20 weeks)
-	HERMES repairs/installations	6 weeks
-	Survey of beam elements	1 week
-	Modification of Lambda Wheel Si Detector	2 weeks
-	Removal/mapping of transverse target magnet	6 weeks
-	Changes to Atomic Beam source	
-	HERAb repairs/installations	
-	Installation of cavity for longitudinal polarimeter	
Total		16 (20) weeks

3. Milestones for decision making:

- 16.9. distribute H1 and ZEUS report on understanding of the background and its solution
- 16.9. distribute list of shutdown work: HERA, H1, ZEUS, HERMES, HERAb
- 18.9. tentative plan of running + shut-down (discussion DIR meeting on 19.9)
- 23.9. distribute tentative planning to HERA and experiments
- 26.9. HERA-experiments co-ordination meeting – try to find compromise on schedule
- 27.9. DIR decision on tentative schedule (tentative = changes may result on the basis of the refereeing process below)
- 30.10. (PRC) have technical solutions checked before by referees
(Workshop with referees planned for 21-23.10)
- 7.11. confirm (finalise) DIR decision on schedule and shutdown work

4. Tentative Schedule: (still quantized in units if weeks – to be refined)

dates	weeks	main task	comments
w 38-39 16.9-29.9.	2	high L_{spec} for high bunch currents	> 2 fills/week for HERAb
w 40-41 30.9-13.10.	2	running with polarisation tunes polarisation with H1/ZEUS sol. off	> 2 fills/week for HERAb
w 42 14.10-20.10	1	high L_{spec} for high bunch currents	> 2 fills/week for HERAb
w 43-44 21.10-3.11.	2	polarisation tuning	> 2 fills/week for HERAb
w 45-51 4.11-22.12.	7	HERAb/HERMES running improve vacuum – high e currents	e and p not colliding 2 day/w for machine + BG studies
w 52-1 27.12-1.1.	?1	HERAb running	p only still under study if feasible
w 1-4 2.1-26.1.	3.5	HERAb running	(reserve HERMES/ep-Lumi?) 2 day/w for machine + BG studies
w 5 27.1-2.2.	1	high p currents	p-only – (HERAb running possible)
w 6 3.2-9.2.	1	high e currents	HERMES running possible
w 7-8 10.2.-23.2.	2	RESERVE	
w 9 24.2-2.3.	1	improvement dynamic vacuum	
w 10-25 3.3.-22.6	16	Shutdown	

Easter: 20-21.4.

Summerholidays: S-H 30.6-9.8., HH 3.7-13.8.