

HERA- Experiments Coordination Meeting

October 5, 2004

Shutdown progress

Plans for restart

Accelerator improvement program

Shutdown progress

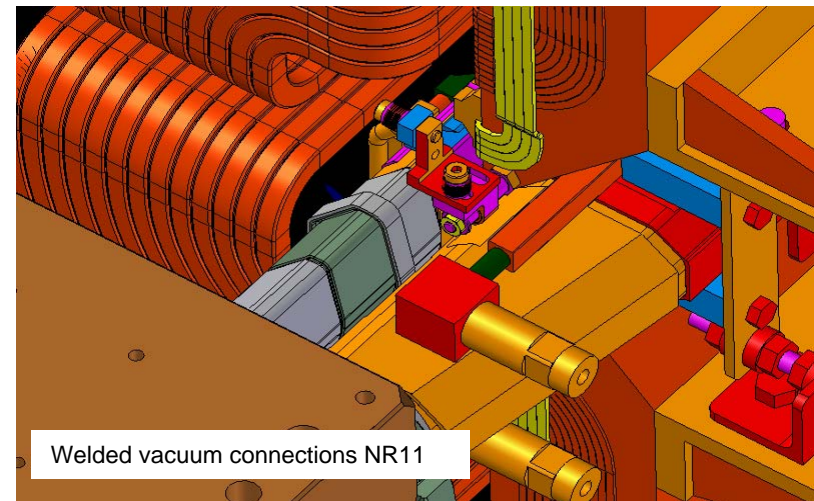
Delays in exchanging the BU coils NL
of 3 days could not be recovered so
far

→ Schedule late by 3 days

early EL-Weg and p-Ring start-up on
weekends planned

Present problem: Needed to
exchange the NEG pumps in the
modified GM chamber for NR

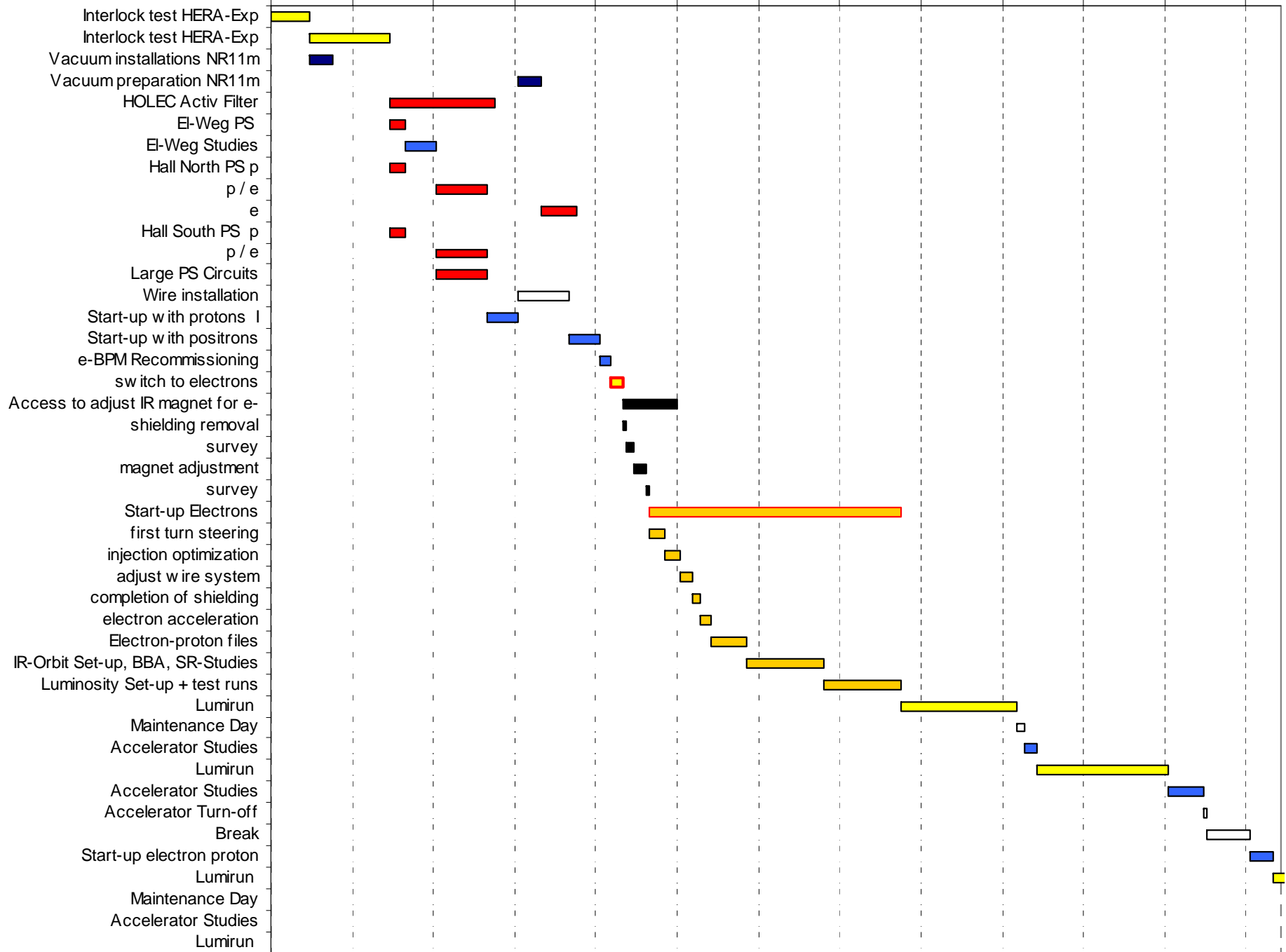
→ further delays



HERA electron proton Schedule 2004

	Start	Δt / day	End				
Interlock test HERA-Exp	30.09.2004 07:00	7,0	07.10.2004 07:00	Start-up Electrons	05.11.2004 15:00	21,7	27.11.2004 07:00
Interlock test HERA-Exp	07.10.2004 07:00	7,0	14.10.2004 07:00	first turn steering	05.11.2004 15:00	1,3	06.11.2004 23:00
Vacuum installations NR11m	07.10.2004 07:00	2,0	09.10.2004 07:00	injection optimization	06.11.2004 23:00	1,3	08.11.2004 07:00
Vacuum preparation NR11m	25.10.2004 07:00	2,0	27.10.2004 07:00	adjust wire system	08.11.2004 07:00	1,0	09.11.2004 07:00
HOLEC Activ Filter	14.10.2004 07:00	9,0	23.10.2004 07:00	completion of shielding	09.11.2004 07:00	0,7	09.11.2004 23:00
El-Weg PS	14.10.2004 07:00	1,3	15.10.2004 15:00	electron acceleration	09.11.2004 23:00	1,0	10.11.2004 23:00
El-Weg Studies	15.10.2004 15:00	2,7	18.10.2004 07:00	Electron-proton files	10.11.2004 23:00	3,0	13.11.2004 23:00
Hall North PS p	14.10.2004 07:00	1,3	15.10.2004 15:00	IR-Orbit Set-up, BBA, SR-Studies	13.11.2004 23:00	6,7	20.11.2004 15:00
p / e	18.10.2004 07:00	4,3	22.10.2004 15:00	Luminosity Set-up + test runs	20.11.2004 15:00	6,7	27.11.2004 07:00
e	27.10.2004 07:00	3,0	30.10.2004 07:00	Lumirun	27.11.2004 07:00	11,0	07.12.2004 07:00
Hall South PS p	14.10.2004 07:00	1,3	15.10.2004 15:00	Maintenance Day	08.12.2004 07:00	0,7	08.12.2004 23:00
p / e	18.10.2004 07:00	4,3	22.10.2004 15:00	Accelerator Studies	08.12.2004 23:00	1,0	09.12.2004 23:00
Large PS Circuits	18.10.2004 07:00	4,3	22.10.2004 15:00	Lumirun	09.12.2004 23:00	10,3	20.12.2004 07:00
Wire installation	25.10.2004 07:00	4,3	29.10.2004 15:00	Accelerator Studies	20.12.2004 07:00	3,0	23.12.2004 07:00
Start-up with protons I	22.10.2004 15:00	2,7	25.10.2004 07:00	Accelerator Turn-off	23.12.2004 07:00	0,3	23.12.2004 15:00
Start-up with positrons	29.10.2004 15:00	2,7	01.11.2004 07:00	Break	23.12.2004 15:00	3,7	27.12.2004 07:00
e-BPM Recommissioning	01.11.2004 07:00	1,0	02.11.2004 07:00	Start-up electron proton	27.12.2004 07:00	2,0	29.12.2004 07:00
switch to electrons	02.11.2004 07:00	1,0	03.11.2004 07:00	Lumirun	29.12.2004 07:00	35,0	02.02.2005 07:00
Access to adjust IR magnet for e-	03.11.2004 07:00	4,7	09.11.2004 23:00	Maintenance Day	02.02.2005 07:00	0,7	02.02.2005 23:00
shielding removal	03.11.2004 07:00	0,3	03.11.2004 15:00	Accelerator Studies	02.02.2005 23:00	1,0	03.02.2005 23:00
survey	03.11.2004 15:00	0,7	04.11.2004 07:00	Lumirun	03.02.2005 23:00	26,3	02.03.2005 07:00
magnet adjustment	04.11.2004 07:00	1,0	05.11.2004 07:00				
survey	05.11.2004 07:00	0,3	05.11.2004 15:00				

04. Okt 11. Okt 18. Okt 25. Okt 01. Nov 08. Nov 15. Nov 22. Nov 29. Nov 06. Dez 13. Dez 20. Dez 27. Dez



Maintenance days in 2004/5

Every first Wednesday in each month

No maintenance day in November

December 8 2004

January 5 2005

February 2 2005

March 2 2005

April 6 2005

May 4 2005

June 8 2005

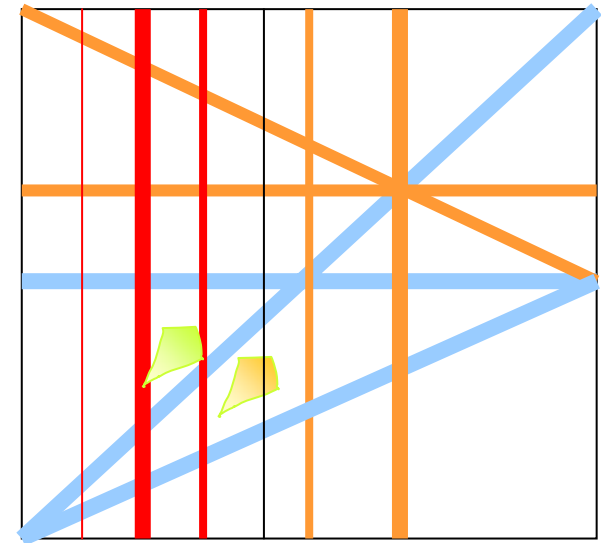
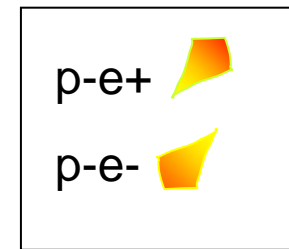
July 6 2005

August 3 2005

Electron Run Preparations

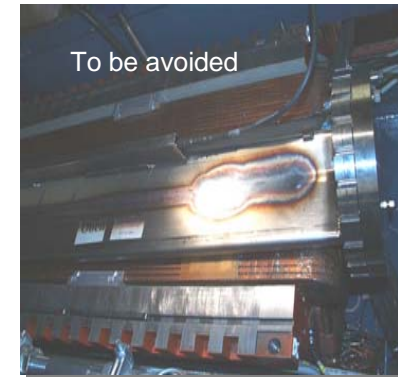
November 10-29

- Machine Files for Injection and Ramping
- Beam Based Alignment of the IRs
- Test of Temperature Sensors
 - $T(x_{co}, y_{co})$,
 - tolerances,
 - correspondence to BTOF
- Luminosity Tune Study
 - Polarization tunes
 - mirror tunes



Operational Improvements

- Improved Temperature Monitoring GI NR (SR)
- New optical match from EL line into HERA-e
- New BPMs in the Beam Line
- Injection Studies
- Tables for nonlinear Ramp of GI-Magnets
 - better transfer to low beta optics
 - correction of non-linear saturation effects
- New BPM data acquisition system for HERA-e (single turn, multi turn measurements, injection triggered data taking → Test of hardware and software)
- Decoupling of optic transfer and saturation effects: 22GeV file with luminosity optics
- RF frequency change by +70Hz (10% emittance reduction)
- Systematic horizontal IP bump ($160\mu\text{rad}$) to aim at Luminosity detector included into dispersion matching



Dedicated Vacuum Conditioning with Beam

Expect to need a few day of dedicated 27.5GeV scrubbing with electron beam

Decisions made after Accelerator studies by the end of November

Electron Lifetime Problems

There are no concrete plans for studies or measures → need evaluate the behavior of intense electron beams

Expect serious problems in January 05 at earliest

Beam Loss Monitor system HERA-e available

