Run II Upgrades PMG
May 2006

Agenda

- Technical Progress– Martens
- Cost and Schedule Performance- Sims
- 345 kv Transformer Vulnerabilities - Wolff

Technical Progress

Summary of Run II Projects

- Debuncher Kickers
  - **Many thanks to the TD for a great job with the unexpected kicker repair!**
  - Kicker module repair has been completed.
  - Re-installation will be completed by the weekend.
  - Testing will be done next week.

- Separators
  - Installed and tested.
  - Conditioning is the next step.

Summary of Run II Projects

- TEL-1
  - Is installed. Leak checking and bake-out to follow.
  - **Many thanks to the TD for a great job with the unexpected TEL-1 repair!**
- TEL-2
  - Leak between He and insulating vacuum
  - Got worse between ER4 and tunnel installation
  - Will cool down to 80k and leak check again.
  - If OK then cool down to 4K, other wise it will be removed.
- IPM and OTR
  - Installed and ready for startup

Summary of Run II Projects

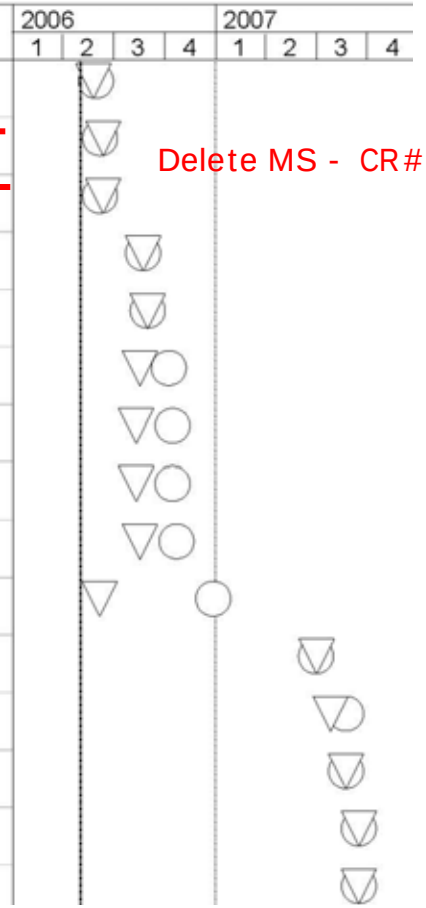
- Alignment
  - Dipole shimming – Completed.
  - D17 -- quad with incorrect fiducials rolled.
  - A3 -- quad with uncertain fiducials replaced.
  - Measured magnet rolls and corrected all rolls > 1 mrad
  - Surveyed CDF low beta quads
    - Waiting to replace steel in order to cool down A4 and B1 houses.

- BPMs and BLMs
  - Still on schedule
  - Will gradually incorporate the new BPM systems
  - BLMs ready in the summer

Cost and Schedule Performance

Remaining Milestones

WBS	Name	Finish	Base Fin	%	MS Class
1.5.6	Finish Summer 06 Shutdown	5/31/06	5/26/06	0%	C
~~1.3.3.1.2.4~~	~~Stacktail Reconfigured (option) (Milestone)~~	~~6/7/06~~	~~6/13/06~~	~~0%~~	~~C~~
~~1.6.5.6~~	~~Start Phase 4 (Milestone)~~	~~6/7/06~~	~~6/13/06~~	~~0%~~	~~A~~
1.4.2.1.4	TEL System Operational	8/25/06	8/25/06	0%	A
1.3.6.8	Rapid Transfers Operational (Milestone)	9/1/06	9/1/06	0%	A
1.1.3.2.6	MI BPM system complete	10/9/06	8/18/06	0%	B
2.2.4.4.4.1.6	Tevatron BLM System Operational	10/16/06	8/11/06	0%	B
2.2.4.4.4.2.4	MI BLM System Operational	10/16/06	8/11/06	0%	B
2.2.4.4.4.3.4	Booster BLM System Operational	10/23/06	8/18/06	0%	B
1.2.2.11	Intermediate AP2&DB Improvements Complete (Milestone)	12/28/06	6/6/06	0%	A
1.5.7	Start Summer 07 Shutdown	7/2/07	7/2/07	0%	C
1.2.2.12	Final AP2&DB Improvements Complete (Milestone)	8/24/07	7/27/07	0%	A
1.5.8	Finish Summer 07 Shutdown	8/24/07	8/24/07	0%	C
1.6.5.7	Start Phase 5 (Milestone)	9/17/07	9/17/07	0%	A
1.6.5.8	End Project	9/17/07	9/17/07	0%	A



Delete MS - CR#46

▽ Baseline Finish Date

◯ Forecast Date

Progress

WBS	Name	Actual %	Planned %	A/P %
0	**Run II**	**90%**	**92%**	**97%**
1	**Luminosity Upgrades**	**89%**	**92%**	**97%**
1.1	Protons on Pbar Target	87%	93%	93%
1.2	Pbar Acceptance	72%	76%	95%
1.3	Pbar Stacking & Cooling	97%	99%	99%
1.4	Tevatron High Luminosity	89%	92%	97%
1.5	Shutdowns	50%	50%	100%
1.6	Project Management	80%	79%	100%
2	**Maintenance & Reliability**	**93%**	**96%**	**96%**
2.1	2003 White Paper/Vulnerability Report	93%	94%	99%
2.2	Maintenance Improvements	92%	100%	92%

MI BPM Electronics and software

Debuncher BPM Instrumentation

Chromatic Control Cable Pulls

BLM Digitizer Deliveries

M&S Spending through April '06

M&S Spending		v4 Plan Estimate (then yr$)			FY06	Inception To date Costs			% Plan used	% Fy06 Budget Used
									ITD Obl+RIP	YTD Obl+RIP
		FY06	FY07	Total	Obl+RIP	Actual	Obligations	Obl+RIP	/Total Est	Allocation
0	**Run II Upgrades**	**4,148**	**239**	**18,160**	**1,354**	**15,915**	**16,140**	**16,220**	**89%**	**60%**
1	**Luminosity Upgrades**	**2,776**	**239**	**13,899**	**1,164**	**12,551**	**12,395**	**12,475**	**90%**	**57%**
1.1	**Protons on Target**	**398**	**0**	**1,859**	**447**	**2,188**	**1,682**	**1,682**	**90%**	**76%**
1.1.1	Slip Stacking	0	0	416	0	937	406	406	98%	
1.1.2	Pbar Target and Sweeping	12	0	55	13	33	33	33	61%	82%
1.1.3	MI Upgrades	314	0	1,074	397	876	900	900	84%	88%
1.1.4	Booster-MI Cogging	0	0	0	0	0	0	0		
1.1.5	OTR	0	0	174	0	255	255	255	147%	100%
1.1.6	Operational Improvements for Protons	71	0	140	37	87	87	87	62%	32%
1.2	**pbar Acceptance**	**454**	**239**	**1,415**	**97**	**951**	**984**	**984**	**70%**	**44%**
1.2.1	LiLens	271	0	513	46	342	367	367	72%	43%
1.2.2	AP2 and DB Acceptance	184	239	901	50	609	617	617	68%	46%
1.3	**pbar Stacking and Cooling**	**623**	**0**	**5,083**	**356**	**4,373**	**4,587**	**4,587**	**90%**	**62%**
1.3.1	S&C Task Force	0	0	0	0	0	0	0		
1.3.2	Debuncher Cooling	0	0	0	0	0	0	0		
1.3.3	Stacktail Upgrade	1	0	916	46	902	922	922	101%	100%
1.3.4	Recycler Commissioning	0	0	376	2	297	297	297	79%	100%
1.3.5	Electron Cooling	0	0	2,536	47	2,501	2,551	2,551	101%	91%
1.3.6	Rapid Transfers	26	0	582	22	535	535	535	92%	51%
1.3.7	Additional Recycler Upgrades	233	0	311	83	105	105	105	34%	49%
1.3.8	Additional E-Cool Upgrades	146	0	146	156	32	177	177	121%	64%
1.3.9	Pbar Stack Rate Task Force	217	0	217	0	0	0	0	0%	
1.4	**Tevatron High Luminosity**	**1,192**	**0**	**5,341**	**265**	**4,937**	**5,040**	**5,120**	**96%**	**48%**
1.4.1	Beam Studies and Simulation	81	0	119	46	87	87	87	73%	100%
1.4.2	Active BBC	498	0	1,125	81	961	1,064	1,144	102%	44%
1.4.3	Increased Helix Separation	395	0	1,268	31	1,048	1,059	1,059	83%	16%
1.4.4	Luminosity Leveling	110	0	110		28	90	90		89%
1.4.5	Improved Controls and Diagnostics	0	0	2,174	8	2,208	2,180	2,180	100%	55%
1.4.6	Tevatron Vacuum Improvements	41	0	235	26	254	254	254	108%	100%
1.4.7	Tevatron Alignment	66	0	309	27	350	307	307	99%	128%
1.6	**Management**	**108**	**0**	**201**	**0**	**102**	**102**	**102**	**51%**	
2	**Reliability Upgrades**	**1,372**	**0**	**4,261**	**190**	**3,364**	**3,745**	**3,745**	**88%**	**74%**
2.1	2003 White Paper/Vulnerability Report	1,085	0	2,598	-74	1,971	2,197	2,197	85%	46%
2.2	**Reliability Upgrades**	**287**	**0**	**1,663**	**264**	**1,393**	**1,548**	**1,548**	93%	109%

Effort for April 2006

Adjusted FTE		Division					Plan
		AD	TD	PPD	CD	Totals	3 MO rolling ave.
Run II Upgrades		**21.8**	**15.0**	**7.7**	**5.3**	**49.8**	**48.8**
1	Luminosity Upgrades	21.8	11.3	2.2	5.3	40.6	35.5
1.1	Protons on Target	3.9	0.0	0.0	5.3	9.2	7.9
1.2	pbar Acceptance	4.7	4.0	0.0	0.0	8.7	2.3
1.3	pbar Stacking and Cooling	4.1	0.0	0.0	0.0	4.1	7.1
1.4	Tevatron High Luminosity	8.1	7.3	2.2	0.0	17.6	15.0
1.6	Management	1.0	0.0	0.0	0.0	1.0	3.2
2	Reliability Upgrades	0.0	3.7	5.5	0.0	9.2	13.3

Deb Extraction Kicker Modifications

Change Requests

- CR 46 – Descope Stacktail Reconfiguration (1.3.3.1.2)
  - The Stochastic cooling pick up tank move was planned but not done during the shutdown. The tank move was thought to be needed to study stacking limits. Since we have not reached the planned stacking limits the study is not needed and it is unlikely that we will perform this study in the future.
  - This reconfiguration was the only predecessor to the Start Phase 4 Class A milestone which is also no longer applicable and was deleted.
  - Cost impact:
    - M&S = $0
    - Labor = $-2811
  - Schedule impact:
    - Remove Start Phase 4 Class A Milestone(1.6.6.3)

Contingency

- Potential M&S Contingency Needs –
  - Spare 345kv transformer – $1.1 Million
  - Alignment Subcontractors – $100k to $200k
  - Any overspending in recent shutdown efforts – Waiting to final close all 26 T&M reqs.