Run II Upgrades PMG
May 2006

Agenda

- Technical Progress– Martens
- Cost and Schedule Performance- Sims

Technical Progress

Finished Tasks

- Completed installation of 5 separators at A49, B48, and A17.
  - The separators are now used in operations
- TEL-1 and TEL-2 installed in tunnel.
  - TEL-1 working as abort gap cleaner
  - TEL-2 being commisioned.
- Tevatron Alignment
  - All dipole magnets have been shimmed.
  - All quadrupoles are rolled < 1 mrad.
  - A3 -- quad with uncertain fiducials replaced.
  - D17 -- quad with incorrect fiducials rolled (but the wrong way).
- Debuncher kicker magnet
  - Debuncher kickers re-assembled and installed.
  - Motorized stands installed.

Remaining Tasks

- MI BPMs
  - First new system being installed in 1/7 of ring this week.
- BLMs
  - Work continues towards completion this summer.
- Stacktail Cooling Upgrade
  - Prototype tank installed in debuncher for characterization
  - Test were completed and results will be analyzed
- Li Lens Upgrade
  - Two Prototype 1 lenses completes
  - One Prototype 2 lens complete and beginning bench testing
  - One Prototype 2 lens nearing completion in several months.

Milestone Changes

- Stacktail Cooling Upgrade Milestones (Decision Points)
  - Changed to reflect latest understanding of collider complex
  - Assumes 8 months build time, and summer '07 shutdown installation

- Class C Milestone Sept 1, 2006

  Reach 25 mA/hr and start construction of stacktail tanks

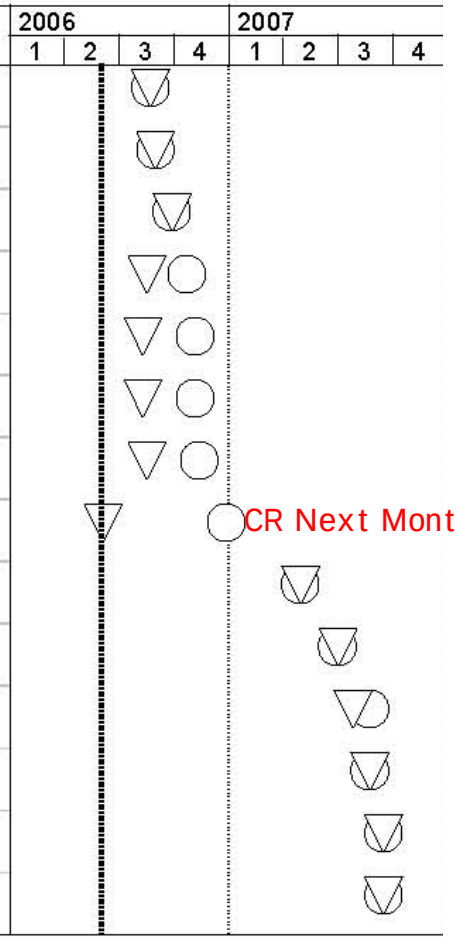
- Class C Milestone May 1, 2007

  Reach 30 mA/hr and prepare tanks for installation

Cost and Schedule Performance

Remaining Milestones

WBS	Name	Finish	Base Fin	%	MS Class
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
1.3.3.1.3.10 *	Reach 25 Ma/Hour Stack Rate - Decision to Build Pickup Tanks for Stacktail Cooling Upgrade	9/29/06	9/29/06	0%	C
1.1.3.2.6	MI BPM system complete	10/23/06	8/18/06	0%	B
2.2.4.4.4.1.6	Tevatron BLM System Operational	11/6/06	8/11/06	0%	B
2.2.4.4.4.2.4	MI BLM System Operational	11/6/06	8/11/06	0%	B
2.2.4.4.4.3.4	Booster BLM System Operational	11/13/06	8/18/06	0%	B
1.2.2.11	Intermediate AP2&DB Improvements Complete (Milestone)	12/28/06	6/6/06	0%	A
1.3.3.1.3.11 *	Reach 30 Ma/Hour Stack Rate - Decision to Install Pickup Tanks for Stacktail Cooling Upgrade	5/1/07	5/1/07	0%	C
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



* New MS to kick off Stacktail Cooling Upgrades

▽ Baseline Finish Date

◯ Forecast Date

Progress

WBS	Name	Actual %	Planned %	A/P %
0	Run II	91.3%	93.8%	97.4%
1	Luminosity Upgrades	90.3%	93.2%	96.9%
1.1	Protons on Pbar Target	90.0%	95.6%	94.1%
1.2	Pbar Acceptance	72.1%	77.5%	93.0%
1.3	Pbar Stacking & Cooling	99.0%	99.7%	99.3%
1.4	Tevatron High Luminosity	90.1%	93.5%	96.3%
1.5	Shutdowns	75.0%	75.0%	100.0%
1.6	Project Management	80.9%	80.9%	100.1%
2	Maintenance & Reliability	93.0%	97.0%	95.9%
2.1	2003 White Paper/Vulnerability Report	98.0%	94.7%	103.5%
2.2	Maintenance Improvements	98.5%	99.9%	98.6%

M&S Spending through May '06

M&S Spending		v4 Plan Estimate (then yr$)			FY06	Inception to Date		% Plan used ITD Obl+RIP /Total Est	% Fy06 Budget Used YTD Obl+RIP Allocation
		FY06	FY07	Total	Obl+RIP	Obligations	Obl+RIP		
0	**Run II Upgrades**	**4,148**	**239**	**18,160**	**2,186**	**16,449**	**16,488**	**91%**	**69%**
1	**Luminosity Upgrades**	**2,776**	**239**	**13,899**	**1,616**	**12,571**	**12,610**	**91%**	**62%**
1.1	**Protons on Target**	**398**	**0**	**1,859**	**438**	**1,688**	**1,688**	**91%**	**77%**
1.1.1	Slip Stacking	0	0	416	0	406	406	98%	
1.1.2	Pbar Target and Sweeping	12	0	55	21	33	33	61%	82%
1.1.3	MI Upgrades	314	0	1,074	380	906	906	84%	90%
1.1.4	Booster-MI Cogging	0	0	0	0	0	0		
1.1.5	OTR	0	0	174	0	255	255	147%	
1.1.6	Operational Improvements for Protons	71	0	140	37	87	87	62%	32%
1.2	**pbar Acceptance**	**454**	**239**	**1,415**	**186**	**996**	**1,035**	**73%**	**61%**
1.2.1	LiLens	271	0	513	73	368	372	72%	45%
1.2.2	AP2 and DB Acceptance	184	239	901	113	628	663	74%	77%
1.3	**pbar Stacking and Cooling**	**623**	**0**	**5,083**	**453**	**4,614**	**4,614**	**91%**	**66%**
1.3.1	S&C Task Force	0	0	0	0	0	0		
1.3.2	Debuncher Cooling	0	0	0	0	0	0		
1.3.3	Stacktail Upgrade	1	0	916	46	922	922	101%	100%
1.3.4	Recycler Commissioning	0	0	376	2	297	297	79%	100%
1.3.5	Electron Cooling	0	0	2,536	43	2,551	2,551	101%	91%
1.3.6	Rapid Transfers	26	0	582	56	538	538	92%	53%
1.3.7	Additional Recycler Upgrades	233	0	311	107	107	107	35%	50%
1.3.8	Additional E-Cool Upgrades	146	0	146	199	199	199	136%	72%
1.3.9	Pbar Stack Rate Task Force	217	0	217	0	0	0	0%	
1.4	**Tevatron High Luminosity**	**1,192**	**0**	**5,341**	**537**	**5,172**	**5,172**	**97%**	**53%**
1.4.1	Beam Studies and Simulation	81	0	119	47	87	87	73%	100%
1.4.2	Active BBC	498	0	1,125	261	1,170	1,170	104%	49%
1.4.3	Increased Helix Separation	395	0	1,268	40	1,057	1,057	83%	15%
1.4.4	Luminosity Leveling	110	0	110	113	113	113		112%
1.4.5	Improved Controls and Diagnostics	0	0	2,174	7	2,180	2,180	100%	55%
1.4.6	Tevatron Vacuum Improvements	41	0	235	26	254	254	108%	100%
1.4.7	Tevatron Alignment	66	0	309	43	310	310	100%	140%
1.6	**Management**	**108**	**0**	**201**	**0**	**102**	**102**	**51%**	
2	**Reliability Upgrades**	**1,372**	**0**	**4,261**	**571**	**3,878**	**3,878**	**91%**	**96%**
2.1	2003 White Paper/Vulnerability Report	1,085	0	2,598	290	2,335	2,335	90%	87%
2.2	**Reliability Upgrades**	**287**	**0**	**1,663**	**281**	**1,544**	**1,544**	93%	107%

Effort for May 2006

Adjusted FTE		Division					Plan
		AD	TD	PPD	CD	Totals	3 MO rolling ave.
Run II Upgrades		**24.1**	**4.6**	**9.9**	**6.9**	**45.5**	**38.6**
1	Luminosity Upgrades	24.1	4.6	3.2	6.9	38.8	34.3
1.1	Protons on Target	3.8	0.0	0.0	6.9	10.7	10.0
1.2	pbar Acceptance	3.8	3.2	0.9	0.0	7.9	2.5
1.3	pbar Stacking and Cooling	6.6	0.0	0.0	0.0	6.6	5.1
1.4	Tevatron High Luminosity	8.8	1.4	2.3	0.0	12.5	13.6
1.6	Management	1.1	0.0	0.0	0.0	1.1	3.1
2	Reliability Upgrades	0.0	0.0	6.7	0.0	6.7	4.3

Deb Extraction Kicker

Change Requests

- CR 47 – Add Stacktail Cooling MS (Approved)
  - Adds two class C milestones to identify decision points regarding the stacktail cooling upgrade. No Cost or schedule implications.
- CR 48 – Move 1.2.2.11 – Intermediate AP2 and Deb Improvements complete MS (next month).
  - Moves this class A MS out 6 months. This is due to the moving of the FY06 Shutdown from Fall 2005 to Spring 2006.
- CR 49 – Add Scope to reliability upgrades relating to response of a 40 MVA transformer failure.
  - Adds about $500k of M&S to install a new feeder from AP to Kautz Road Substation and procures a spare Booster Brentford Transformer.
- CR-50 – Subcontract Alignment Labor for 2006 Shutdown
  - Adds about $100k of M&S needed to cover the subcontract alignment personnel used int eh recent shutdown.