

FY03 Run IIa Plan

Mike Church

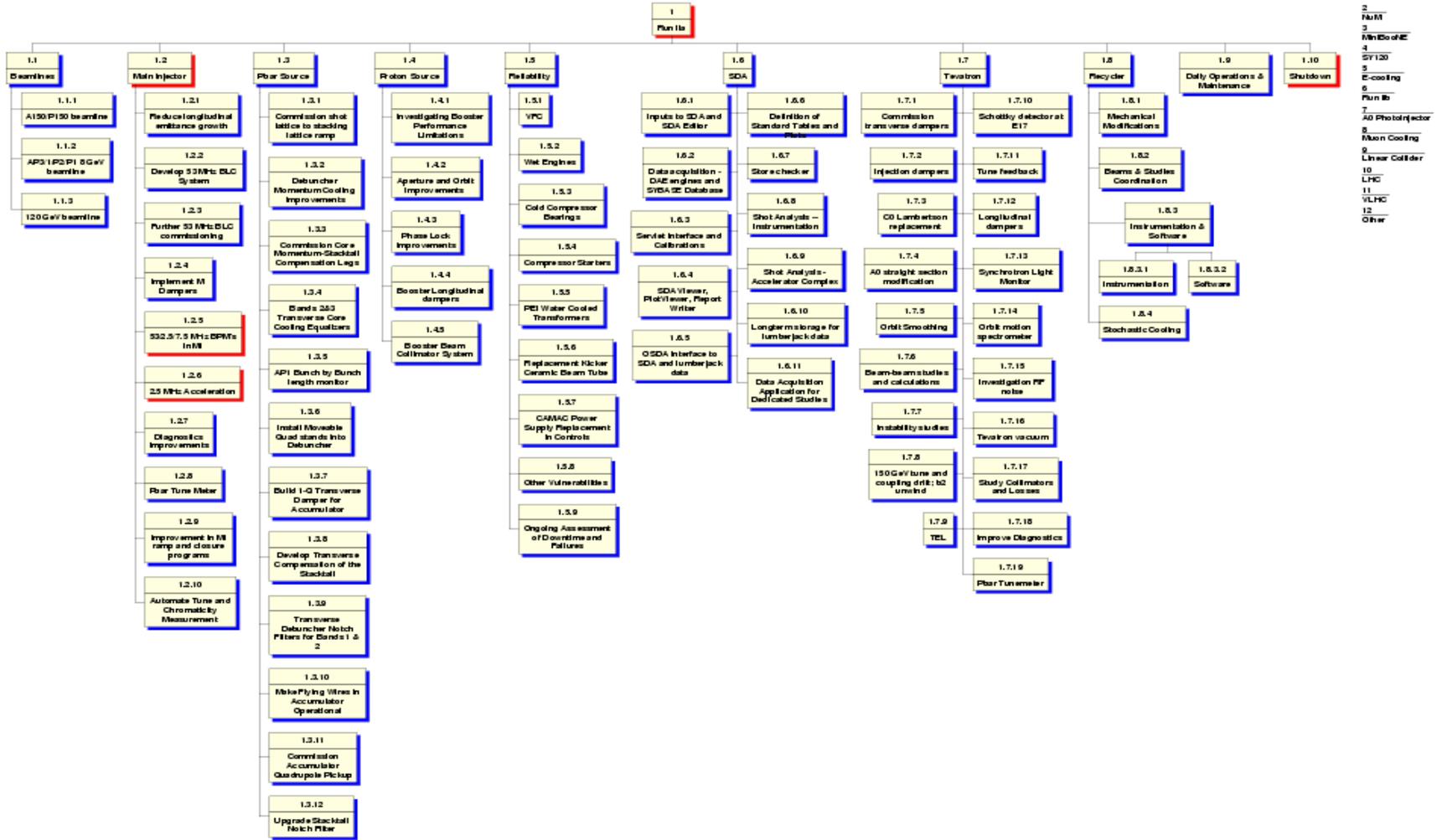
Director's Run II Review

Oct. 17, 2002



FY03 Run IIa Map

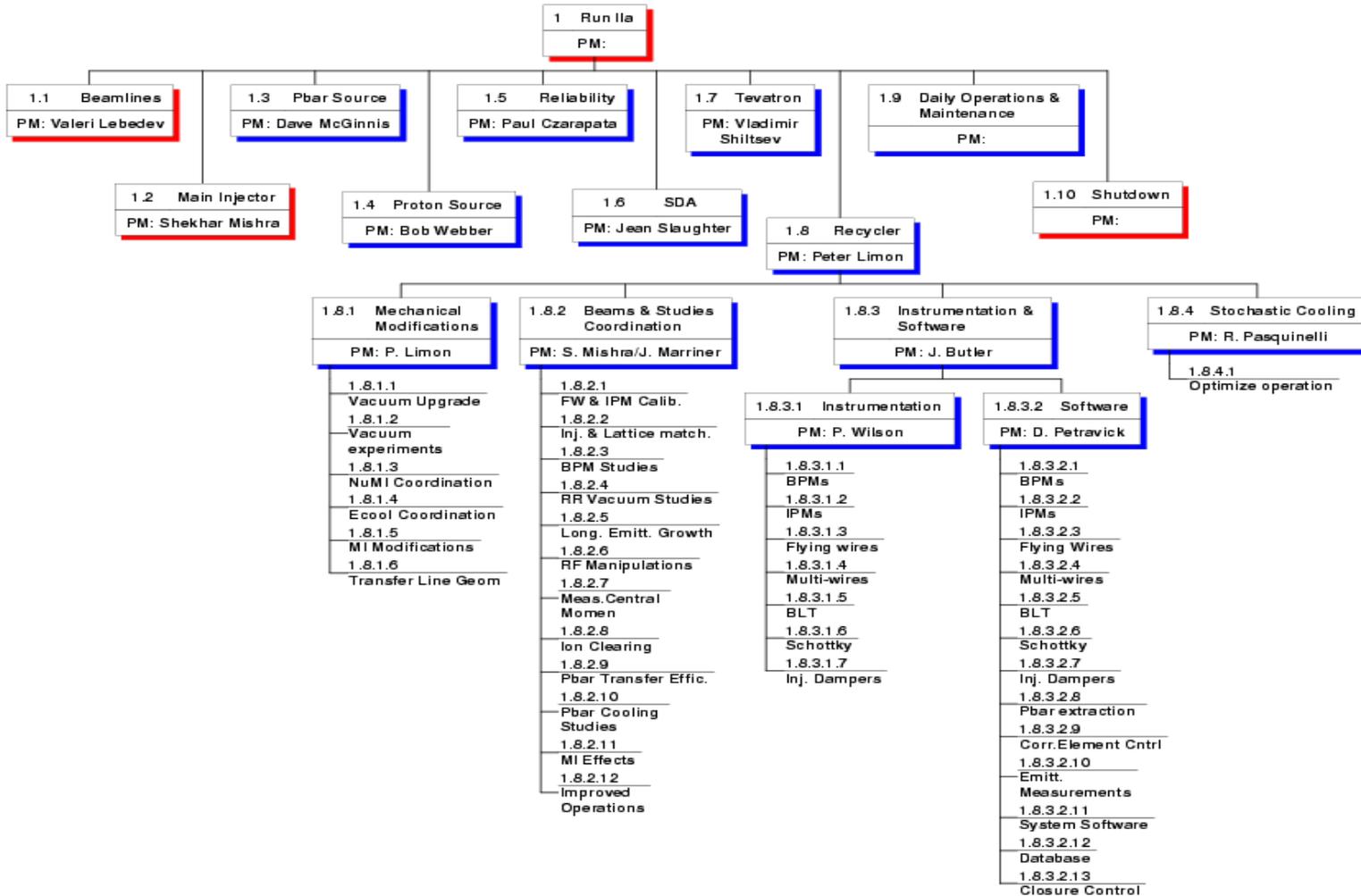
Run IIa





FY03 Recycler Map

Run IIa



- 2 NuMI
- 3 MiniBooNE
- 4 SY120
- 5 E-cooling
- 6 Run IIb
- 7 AO Photoinjector
- 8 Muon Cooling
- 9 Linear Collider
- 10 LHC
- 11 VLHC
- 12 Other



Methodology

- **Run IIa project divided into 8 level II projects with leaders:**
Tevatron (Shiltsev), Pbar Source (McGinnis), Proton Source (Webber), MI (Mishra), Beamlines (Lebedev), SDA (Slaughter), Reliability (Czarapata), RRR (Limon/Mishra)
- **Level II project leaders identify critical projects (level III) and leaders (RRR has additional level of management and level IV projects)**
- **Tasks are identified for each project and resources assigned to each task; start date and duration are estimated and dependence on other tasks are determined; priority is assigned**
- **Resources are: personnel (named or generic); \$\$'s; Tevatron, Pbar, Recycler, and MI shifts; alignment crews**
- **Reexamine, renegotiate, reprioritize tasks and resources**
- **Use MS Project to understand overall schedule and resource allocation -- adjust schedules and resources to make it work, at least on paper**



Sample Level III Project

Project 3.9.1: Transverse Debuncher Notch Filters for Bands 1&2

<u>Project Leader:</u>	Ralph Pasquinelli
<u>Status:</u>	Not started
<u>Motivation:</u>	Removal of longitudinal lines will allow larger transverse cooling gain, which will allow shorter stacking cycle times
<u>Uncertainties:</u>	Bad mixing at band edges due to phase slope of notch
<u>1.3.9.1:</u>	Begin procurement of BAWs
Resources:	E. Cullerton – 20%; 50K\$
Start Date:	10/1/02
Duration:	1 month
<u>1.3.9.2:</u>	Begin system design
Resources:	E. Cullerton – 60%; 50K\$
Start Date:	linked to task 1
Duration:	6 months
<u>1.3.9.3:</u>	Fabricate and assemble filters
Resources:	W. Mueller – 35%
Start Date:	linked to task 2
Duration:	3 months
<u>1.3.9.4:</u>	Installation
Resources:	W. Mueller – 20%; P. Seifrid – 20%; R. Pasquinelli – 5%; 5 pbar shifts
Start Date:	linked to task 3
Duration:	1 month
<u>1.3.9.5:</u>	Commission and phase system
Resources:	D. McGinnis – 20%; R. Pasquinelli – 20%; 4 pbar shifts
Start Date:	linked to task 4
Duration:	1 month



Timeline for Critical Projects

WBS	Name	Project Manager	Oct '02	Nov '02	Dec '02	Jan '03	Feb '03	Mar '03	Apr '03	May '03	Jun '03	Jul '03	Aug '03	Sep '03	Oct '03
1.1	Beamlines	Valeri Lebedev													
1.1.1	A150/P150 beamline	Valerie Lebedev													
1.1.2	AP3/1/P2/P1 8 GeV beamline	Valerie Lebedev													
1.2	Main Injector	Shekhar Mishra													
1.2.1	Reduce longitudinal emittance growth	Dave Wildman													
1.2.4	Implement MI Dampers	G. W. Foster													
1.3	Pbar Source	Dave McGinnis													
1.3.2	Debuncher Momentum Cooling Improvements	Paul Derwent													
1.3.3	Commission Core Momentum-Stacktail Compensation Legs	Paul Derwent													
1.3.4	Bands 2&3 Transverse Core Cooling Equalizers	Dave McGinnis													
1.3.8	Develop Transverse Compensation of the Stacktail	Steve Werkema													
1.3.9	Transverse Debuncher Notch Filters for Bands 1 & 2	Ralph Pasquinelli													
1.3.12	Upgrade Stacktail Notch Filter	Vladimir Nagaslaev													
1.7	Tevatron	Vladimir Shiltsev													
1.7.1	Commission transverse dampers	Jim Steimel													
1.7.3	C0 Lambertson replacement	Peter Garbincius													

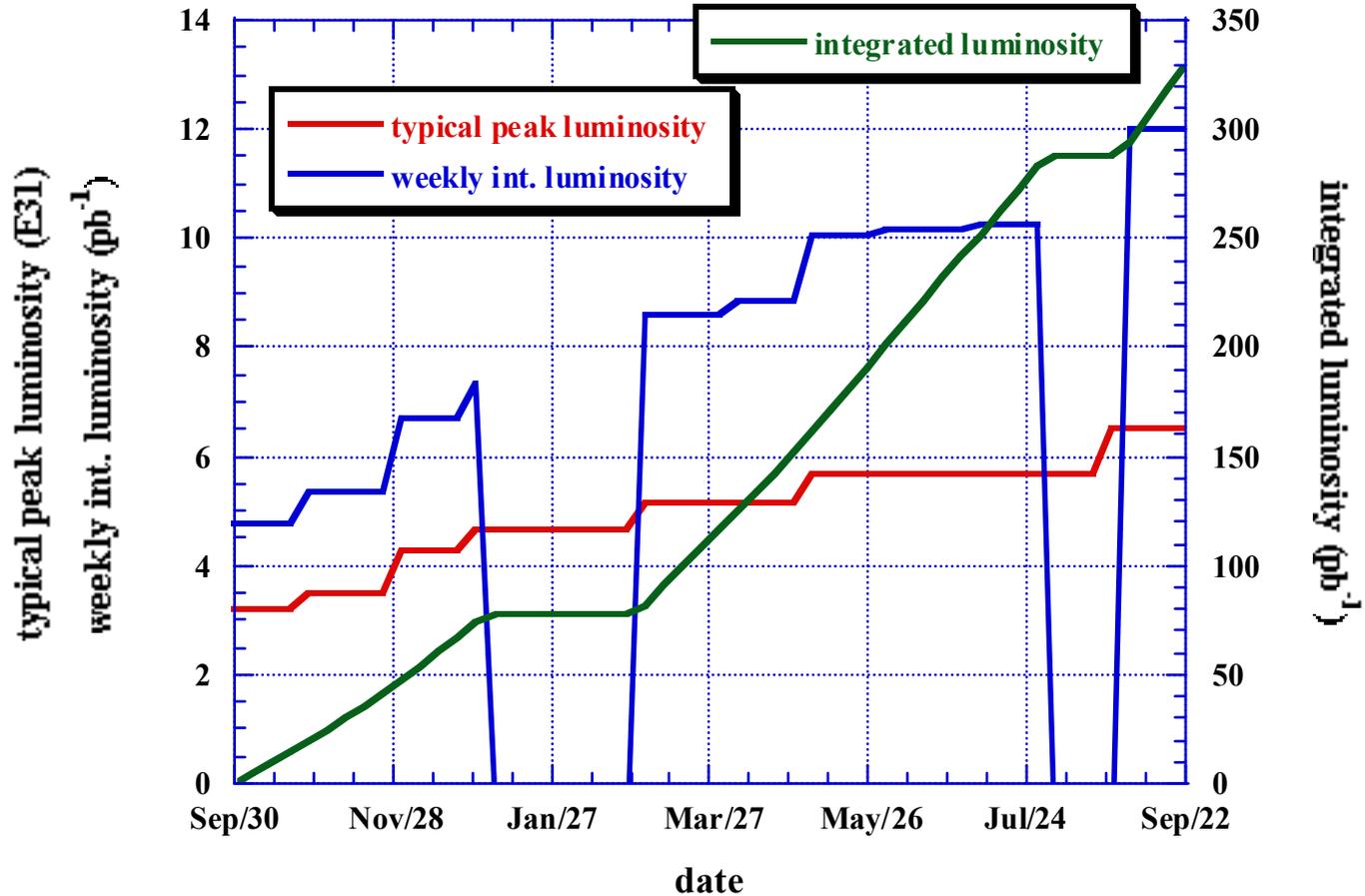


Estimated Luminosity Gain for Critical Projects

- **1.1.1 – A150/P150 beamlines – 20% in peak luminosity by 12/1/02**
- **1.7.1 – Tevatron transverse dampers – 20% in peak luminosity by 1/1/03**
- **1.7.3 – C0 Lambertson replacement – 10% in peak luminosity by 3/1/03**
- **1.3.4 – Accumulator bands 2&3 equalizers – 5% in peak luminosity by 5/1/03**
- **1.1.2 – AP3 beamline – 5% in peak luminosity by 5/1/03**
- **1.1.1 – MI longitudinal dampers – 15% in peak luminosity by 7/1/03**
- **1.5 – Reliability – 1.5%/month in integrated luminosity**
- **1.3 – Stacking upgrades – 1.5%/month in integrated luminosity**



"Stretch" Luminosity profile



The above profiles are consistent with current project completion dates



Resources

- **\$\$ -- M&S items ~>10K\$**
- **We assume 5 dedicated Tevatron shifts/2 weeks; 5 dedicated Pbar shifts/2 weeks; 15 Recycler shifts/week; 15 MI shifts/week**
- **We assume 6 week shutdown starting 1/6/03**
- **We assume no luminosity delivered for 2 weeks after the shutdown; we assume no luminosity delivered for a 2-4 week period in the summer for Recycler integration**
- **We will attempt to account for all BD personnel in one of the following categories:**

Run IIa, Operations/Administration, Maintenance, Run IIb, NUMI, MiniBooNE, SY120, E-cooling, muon cooling R&D, linear collider R&D, A0 photoinjector; LHC, VLHC, "other"

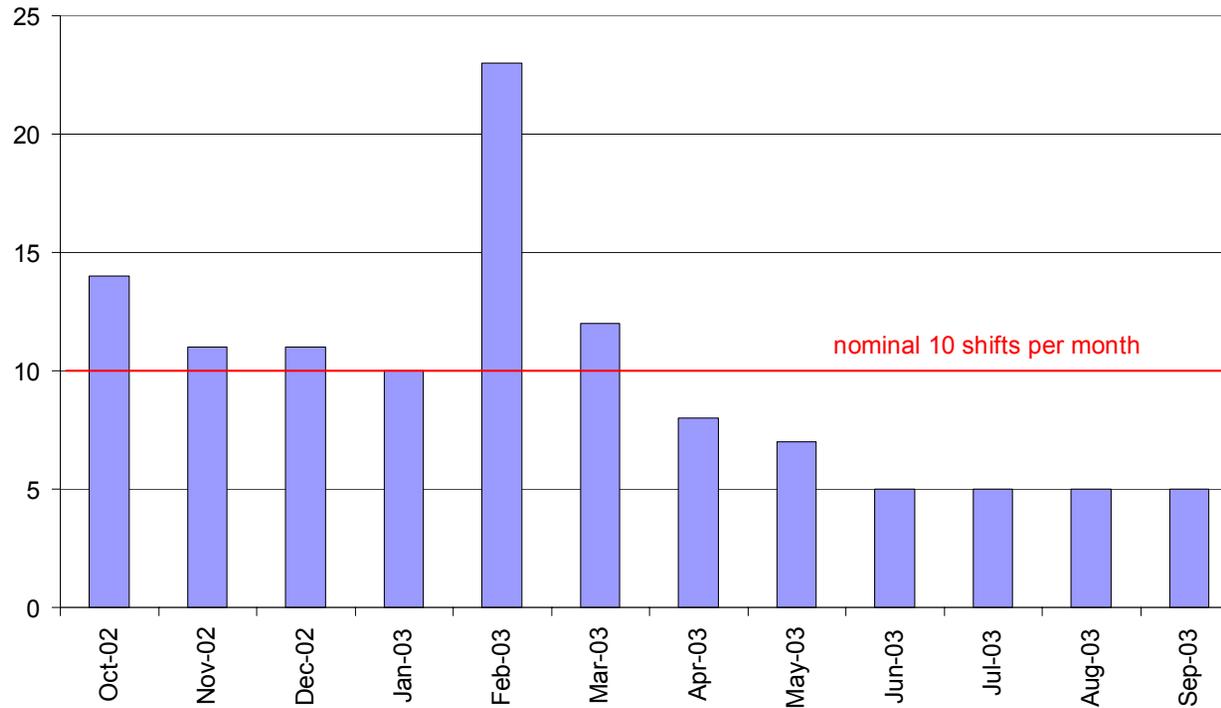
>45% of BD personnel resources committed to Ops/Admin/Maint

~20% of BD personnel resources committed to non-Run IIa projects
- **We will account for non-BD personnel contributions**



Tevatron Study Shifts

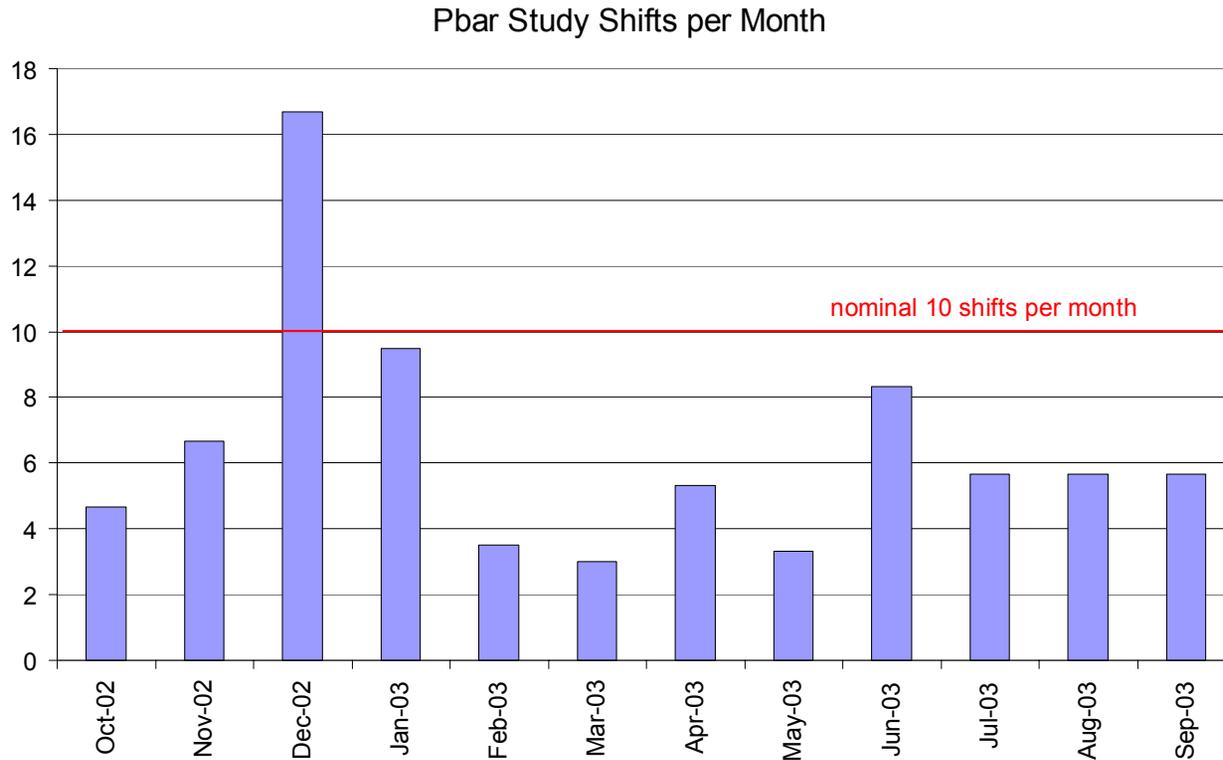
Tevatron Study Shifts (per month)



(1st pass at resource allocation)



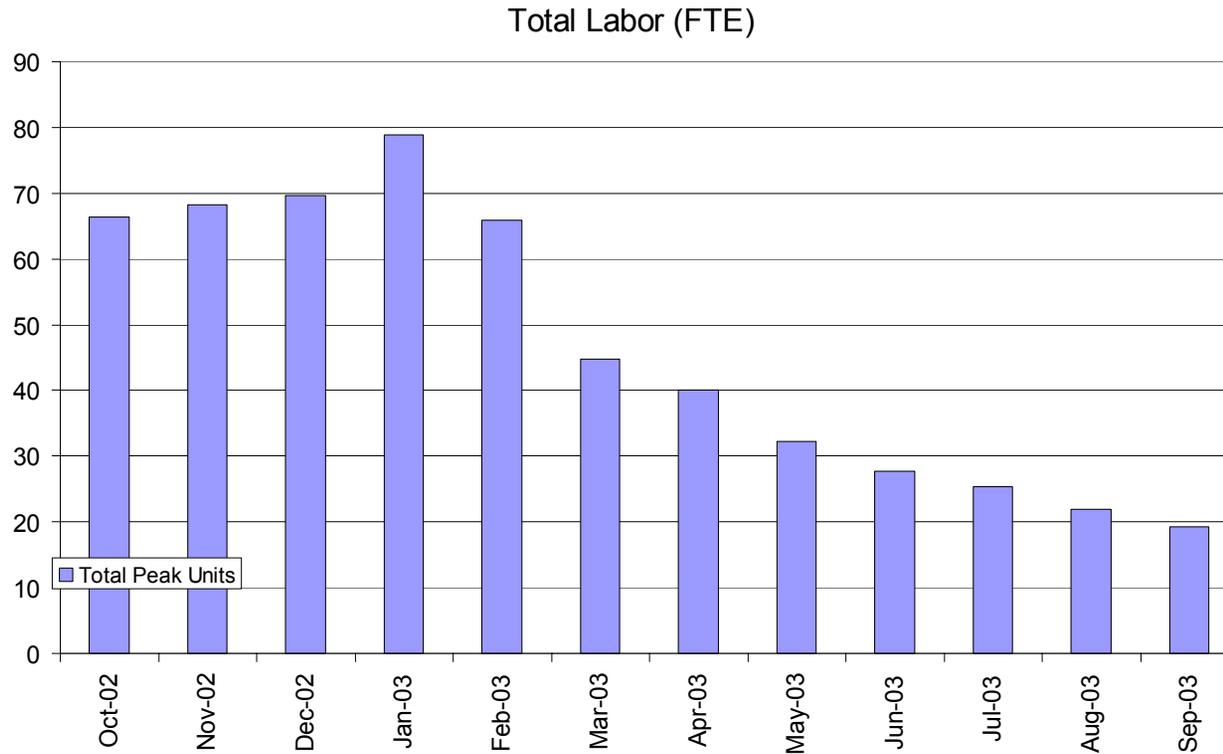
Pbar Study Shifts



(1st pass at resource allocation; does not yet include Recycler project)



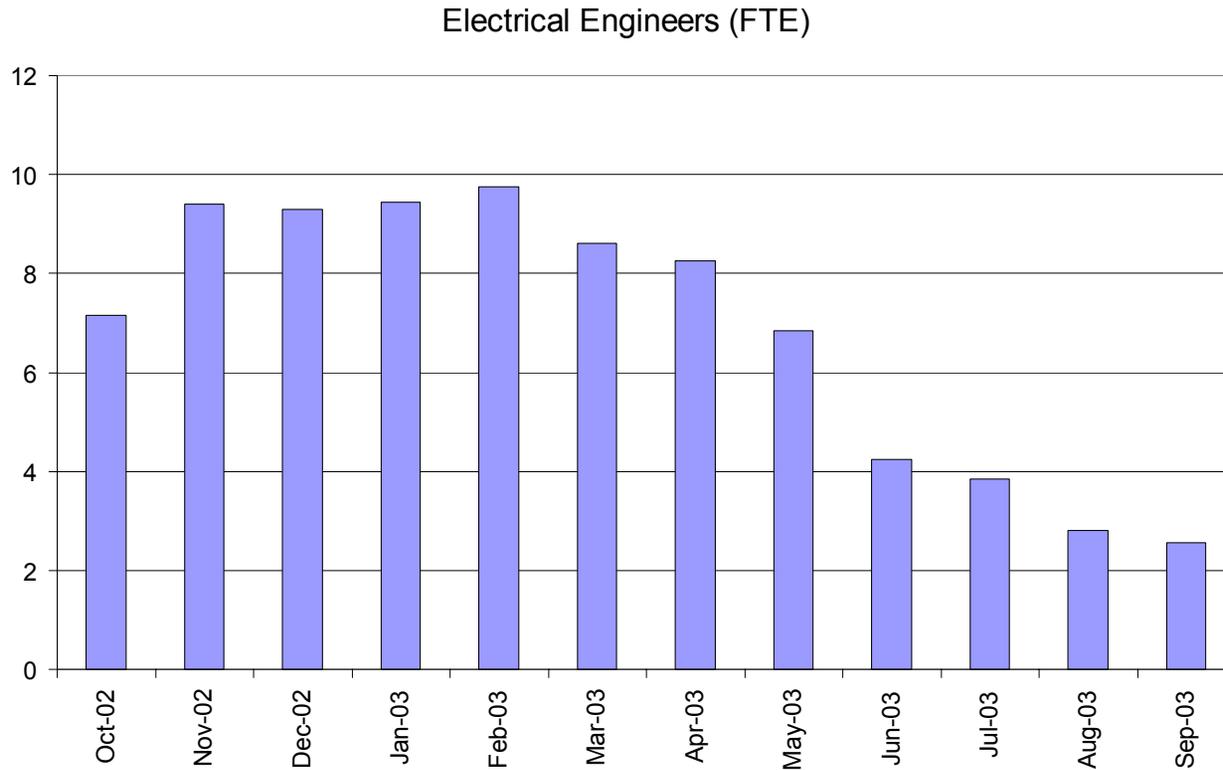
Total Labor Resource



(does not yet include Recycler project and some other shutdown work)



Electrical Engineering Resource



(does not yet include Recycler project and some other shutdown work)



Comments on Completeness and Uncertainties

- **Planning for 7 level II projects is complete at the “90% level”. Task identification is complete. We are working toward adjusting resources and schedules to make things fit.**
- **Recycler project resource allocation is in progress.**
- **“Shutdown” resources and “Run IIa Project” resources are being reconciled.**
- **For BD personnel the distinction between “Ops/Maint” and “Projects” is being re-examined.**
- **Scheduling and resource allocation for some projects is highly uncertain – eg., “Investigation of Tevatron Instabilities” – our understanding of the problem is incomplete, therefore the solution and future actions are unknown.**
- **Estimating luminosity gain from project completion is also uncertain.**
- **Projects that “end” on 10/1/03 don’t really end. (They are ongoing.)**



Project Tracking/Management

- **It is intended that this project management structure will be extended for the duration of Run II, not just FY03**
- **Project management by M. Church (90%) for FY03 + Level II managers + J. Spalding (next Run II manager) + D. Hoffer (MSProject) + Run Coordinator**
- **Project status will be updated every 2 months**