Run 2B Schedule and Cost

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AAC Meeting

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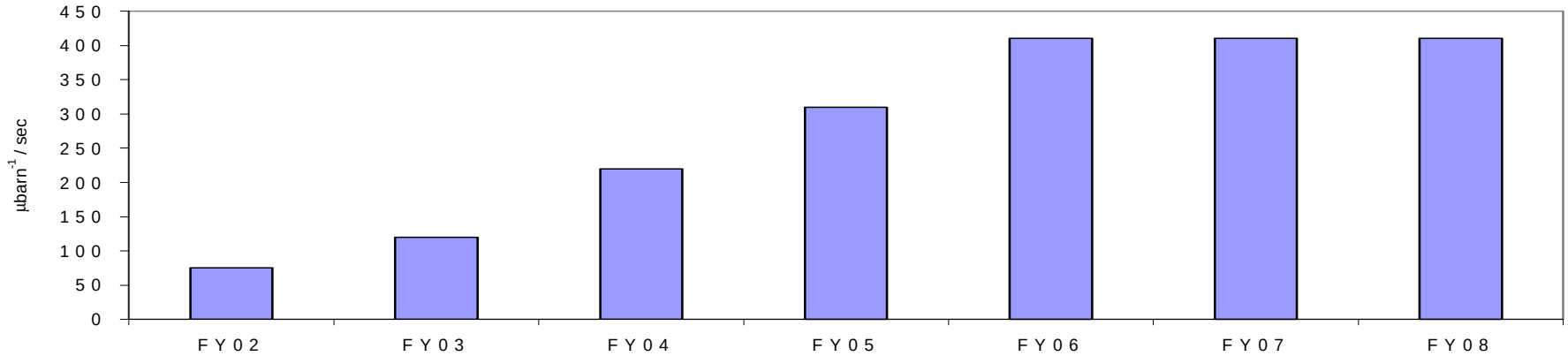
Run II Schedule

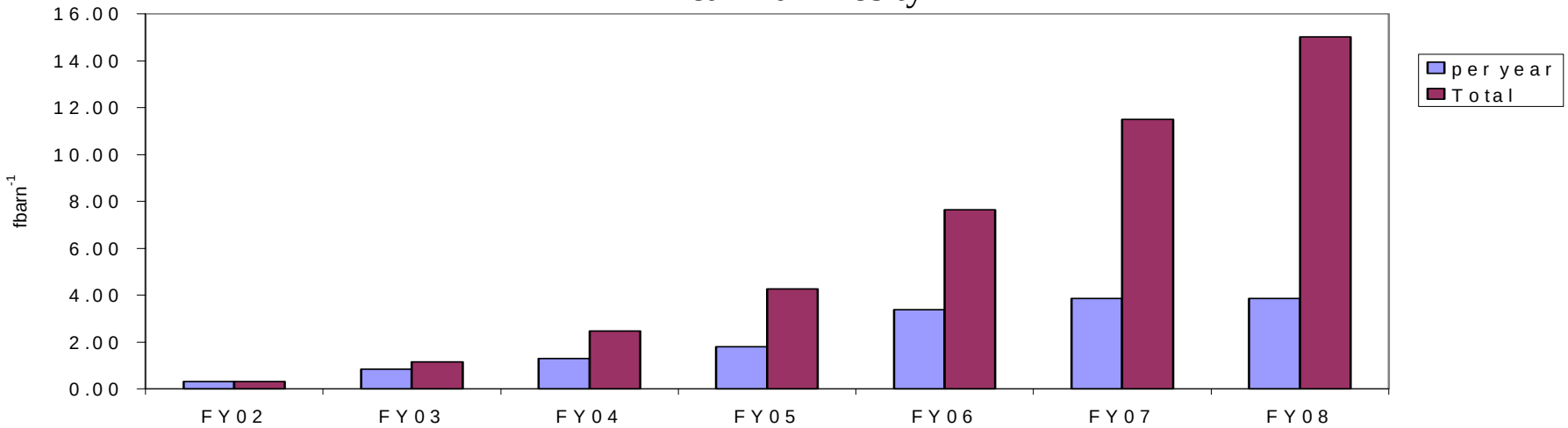
Fiscal Year	Luminosity $\mu barn^{-1}/sec$	$pbarn^{-1}$ per week	Months of Operations	Shutdowns (months)	$fbarn^{-1}$ per year	$fbarn^{-1}$ Total
FY02[1]	75	15	10	2	0.32	0.3
FY03[2]	120	24	10	2	0.83	1.2
FY04[3]	220	43	9	3	1.31	2.5
FY05[4]	310	61	8	4	1.81	4.3
FY06	410	81	11	1	3.38	7.6
FY07	410	81	11	1	3.85	11.5
FY08	410	81	11	1	3.85	15.0

- [1] Shutdown in October for Recycler alignment. Shutdown in September to install Electron Cooling push pipe.
- [2] Assume Recycler is working. Shutdown in August to install 132 nS hardware and Electron Cooling into the Recycler
- [3] Finish installation of 132 nS and Electron Cooling. Spend 1 month commissioning 132 nS.
- [4] Shutdown for Run IIb silicon and CO I-R. Initiate NUMI with 20% impact

Luminosity Schedule



Peak Luminosity



Integrated Luminosity

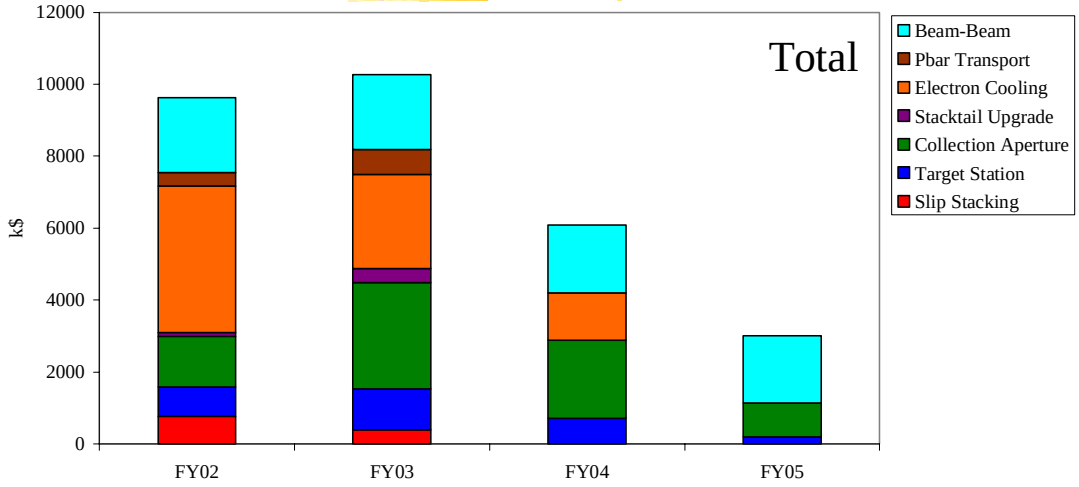
Project Cost by Fiscal Year

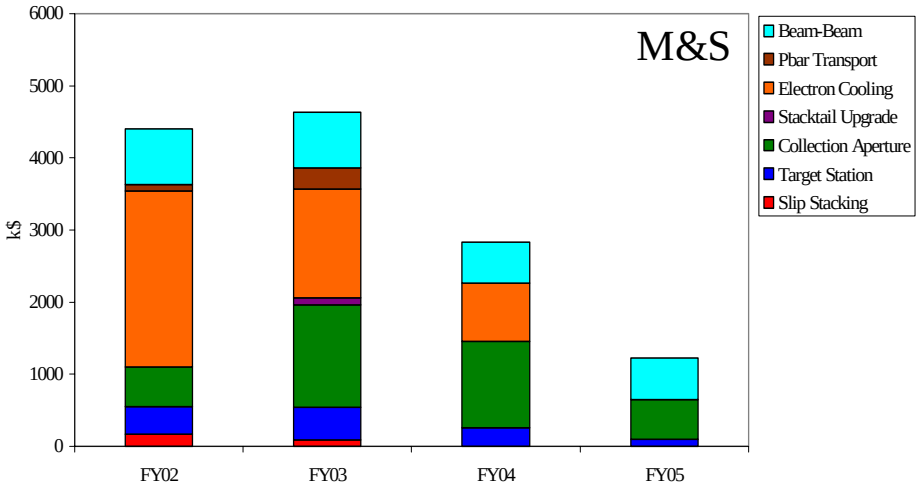
	Project Total	FYO2 Total	FYO3 Total	FYO4 Total	FYO5 Total
Slip Stacking	1160	770	390	0	0
Antiproton Target Station	2870	820	1140	710	200
Pbar Collection Aperture	7485	1410	2955	2180	940
Stacktail Upgrade	500	100	400	0	0
Electron Cooling	7995	4070	2605	1320	0
Pbar Transport	1080	380	700	0	0
Beam-Beam Compensation	7890	2070	2070	1875	1875
Total	28980	9620	10260	6085	3015

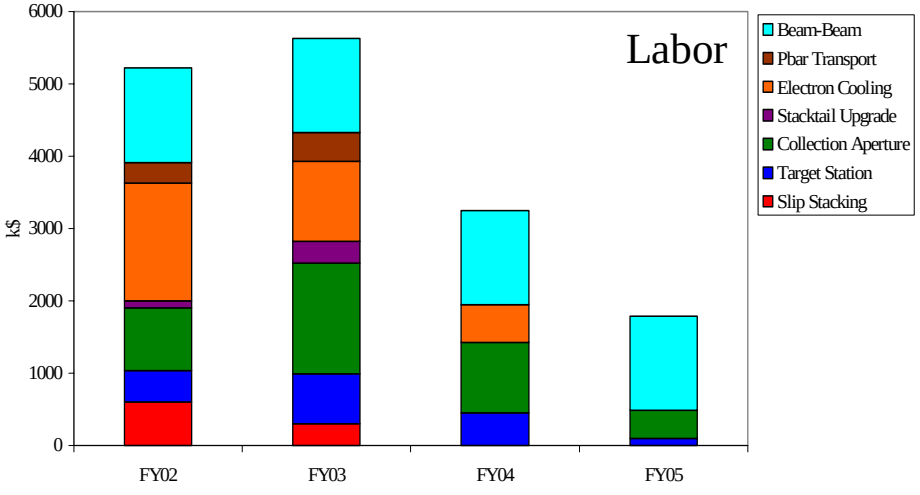
	Project M&S	FYO2 M&S	FYO3 M&S	FYO4 M&S	FYO5 M&S
Slip Stacking	260	170	90	0	0
Antiproton Target Station	1190	380	450	260	100
Pbar Collection Aperture	3725	550	1425	1200	550
Stacktail Upgrade	100	0	100	0	0
Electron Cooling	4745	2445	1500	800	0
Pbar Transport	390	90	300	0	0
Beam-Beam Compensation	2690	770	770	575	575
Total	13100	4405	4635	2835	1225

	Project Labor	FYO2 Labor	FYO3 Labor	FYO4 Labor	FYO5 Labor
Slip Stacking	900	600	300	0	0
Antiproton Target Station	1680	440	690	450	100
Pbar Collection Aperture	3760	860	1530	980	390
Stacktail Upgrade	400	100	300	0	0
Electron Cooling	3250	1625	1105	520	0
Pbar Transport	690	290	400	0	0
Beam-Beam Compensation	5200	1300	1300	1300	1300
Total	15880	5215	5625	3250	1790

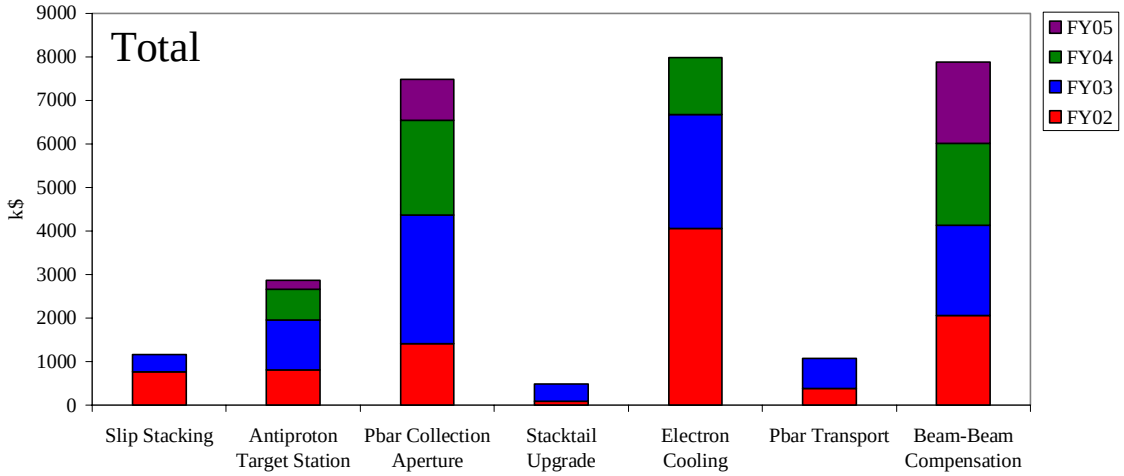
Project Cost by Fiscal Year

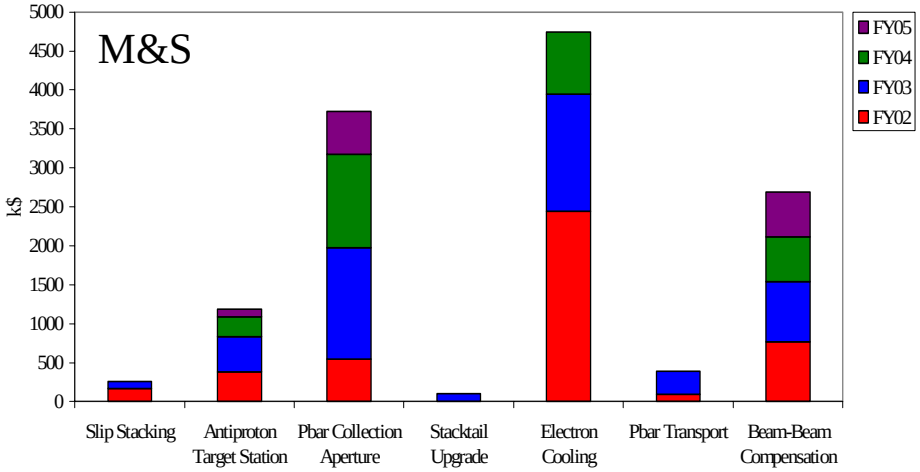


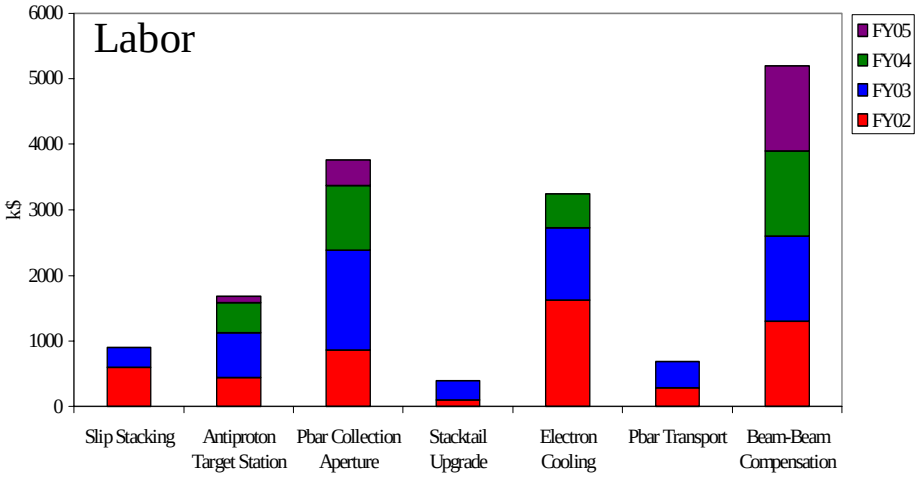




Project Cost



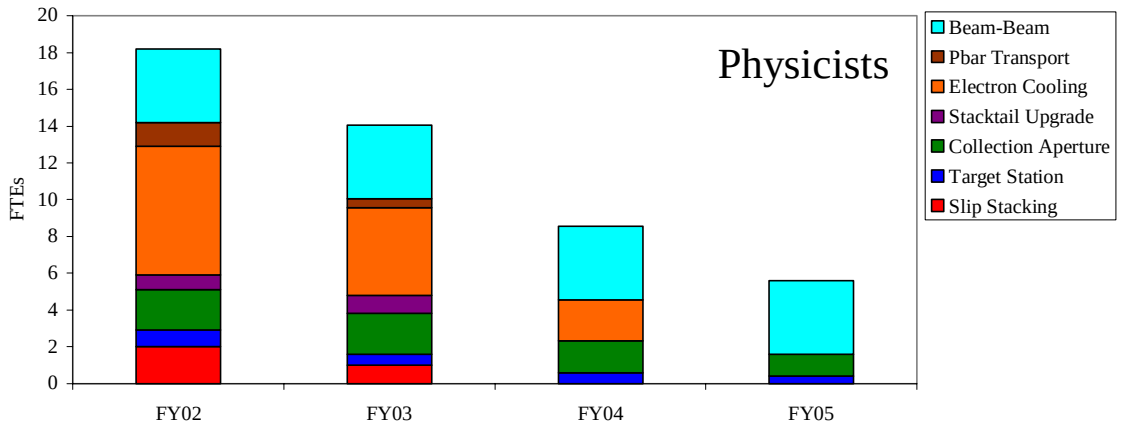


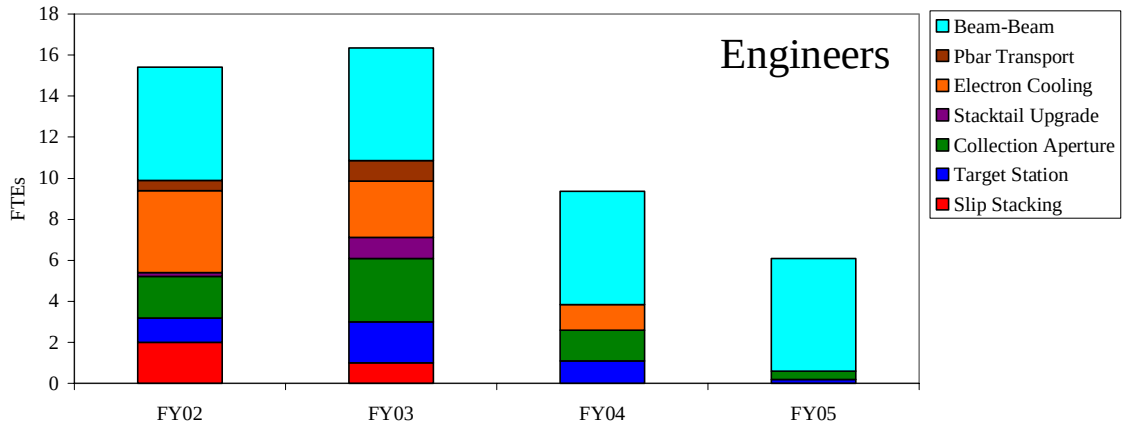


Resources

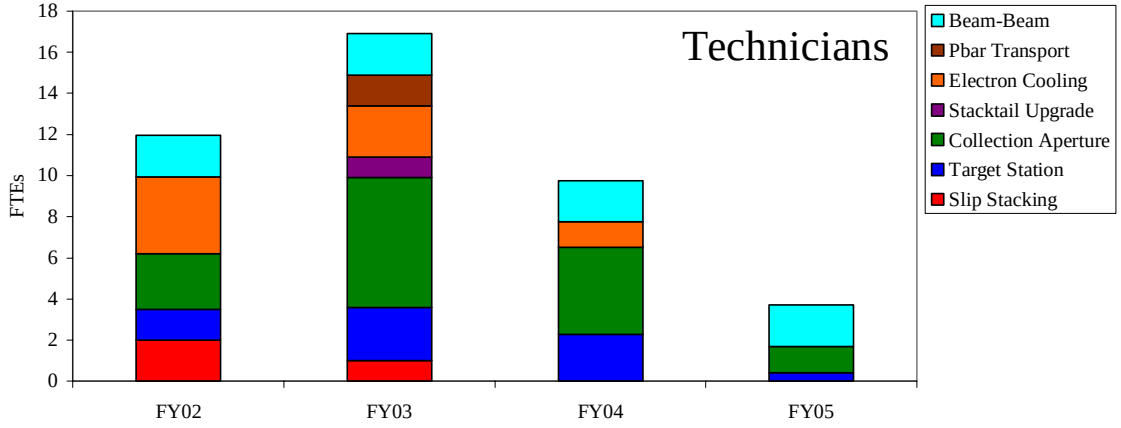
	Total	M&S	Labor	Phys.	Eng.	Draft	Tech	CP
FY02	9620	4405	5215	18.2	15.4	3.8	11.95	2.8
FY03	10260	4635	5625	14.05	16.35	4.95	16.9	4
FY04	6085	2835	3250	8.55	9.35	3.45	9.75	1.4
FY05	3015	1225	1790	5.6	6.1	1.5	3.7	1
Project	28980	13100	15880	46.4	47.2	13.7	42.3	9.2

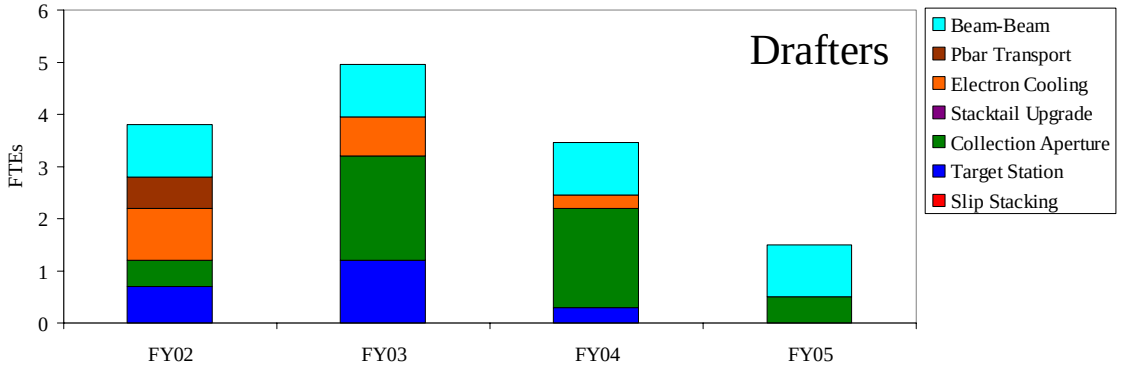
Resources


Physicists
FTEs
20
18
16
14
12
10
8
6
4
2
0
FY02
FY03
FY04
FY05
Beam-Beam
Pbar Transport
Electron Cooling
Stacktail Upgrade
Collection Aperture
Target Station
Slip Stacking


Engineers
FTEs
18
16
14
12
10
8
6
4
2
0
FY02
FY03
FY04
FY05
Beam-Beam
Pbar Transport
Electron Cooling
Stacktail Upgrade
Collection Aperture
Target Station
Slip Stacking

Resources


Technicians
FTEs
18
16
14
12
10
8
6
4
2
0
FY02
FY03
FY04
FY05
Beam-Beam
Pbar Transport
Electron Cooling
Stacktail Upgrade
Collection Aperture
Target Station
Slip Stacking


Drafters
FTEs
6
5
4
3
2
1
0
FY02
FY03
FY04
FY05
Beam-Beam
Pbar Transport
Electron Cooling
Stacktail Upgrade
Collection Aperture
Target Station
Slip Stacking

Manpower Allocation Example

(FY02)

Name	Dept.	Type	Total	Slip Stack	Pbar Trans.	AP2 Aper.	Solid Lens	Acc. Cool.	RR Cool.	BBC
CP Prof	Controls	CP	1		0.5					0.5
Kramper	Controls	CP	0.5						0.5	
Budlong	Pbar	CP	1			1				
MS Drafter	MS	Draft	2						1	1
O'Brien	MS	Draft	0.25				0.25			
Popper	MS	Draft	0.5				0.5			
Fuerst	Cryo	Engr	1							1
Martinez	Cryo	Engr	0.5							0.5
Hively	EE	Engr	0.5							0.5
Pfeffer	EE	Engr	0.5							0.5
Saewert	EE	Engr	1.8						0.8	1
Hurh	MS	Engr	0.5				0.5			
Leibfritz	MS	Engr	1						1	
McGee	MS	Engr	0.5						0.5	
Ryan	MS	Engr	0.25				0.25			
Anderson	Pbar	Engr	0.75			0.75				
Peterson	Pbar	Engr	0.75			0.75				
Tang	PPD	Engr	0.25				0.25			
Berenc	RF&I	Engr	0.25	0.25						
Chase	RF&I	Engr	0.1	0.1						
Crisp	RF&I	Engr	1							1
Dey	RF&I	Engr	0.35	0.35						
Meisner	RF&I	Engr	0.1	0.1						
Pasquinelli	RF&I	Engr	0.2					0.2		
Reid	RF&I	Engr	0.1	0.1						
RFI Engr	RF&I	Engr	1.05		0.55				0.5	
Wildman	RF&I	Engr	1							1
Steimel	TEV	Engr	0.75	0.75						
McLachlan	AP	Phys	0.25	0.25						
Bishofberger	BBC	Phys	1							1
Kuznetsov	BBC	Phys	1							1
Physicist	BBC	Phys	3							3
RA	BBC	Phys	2							2
Shiltsev	BBC	Phys	1							1
Zhang	BBC	Phys	1							1
Burov	EC	Phys	1						1	
Crawford	EC	Phys	1						1	
Grad student	EC	Phys	1						1	
Kroc	EC	Phys	0.5						0.5	
Nagaitsev	EC	Phys	1						1	

Name	Dept.	Type	Total	Slip Stack	Pbar Trans.	AP2 Aper.	Solid Lens	Acc. Cool.	RR Cool.	BBC
Shemyakin	EC	Phys	1						1	
Tupikov	EC	Phys	1						1	
Warner	EC	Phys	1						1	
Koba	MI	Phys	0.75	0.75						
Kourbonis	MI	Phys	0.15	0.15						
Derwent	Pbar	Phys	0.8					0.8		
Gollwitzer	Pbar	Phys	0.7			0.7				
Harms	Pbar	Phys	0.2		0.2					
Lebedev	Pbar	Phys	0.8		0.6	0.2				
Leveling	Pbar	Phys	0.25				0.25			
Morgan	Pbar	Phys	0.25				0.25			
Sondgeroth	Pbar	Phys	0.5		0.5					
Werkema	Pbar	Phys	0							
Dudnikov	PS	Phys	0.5						0.5	
Moehs	PS	Phys	0							
Schmidt	PS	Phys	0.5						0.5	
Tan	TEV	Phys	0							
Carlson	EC	Tech	0.5						0.5	
EE tech	EE	Tech	2.5						1	1.5
Frett	MS	Tech	0.25						0.25	
Kellett	MS	Tech	1						1	
Kelly	MS	Tech	0.75				0.75			
MS Tech	MS	Tech	0.7			0.2				0.5
Nelson	MS	Tech	1						1	
Dilday	Pbar	Tech	1			1				
Obie	Pbar	Tech	0.2		0.2					
Pbar Tech	Pbar	Tech	1			1				
Hren	PS	Tech	0							
Wendt	PS	Tech	0							
Holm	RF&I	Tech	0.15	0.15						
Olson	RF&I	Tech	0.5							0.5
RF&I Tech	RF&I	Tech	0.4		0.4					
VanBogaert	RF&I	Tech	0.15	0.15						
Zifko	RF&I	Tech	0.15	0.15						
Koch	TEV	Tech	0.5	0.5						
McCormack	TEV	Tech	0.35	0.35						