

Activity ID	Activity Description	Forecast Start	Forecast Duration (work days)	Forecast Finish	Budget									
						FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	
Cost Center 1805 - Facility Operations														
Program Research Plan														
MILEBASE01	First plasma		0	30DEC11*	0.00			▼						
MILEBASE02	Six week run - Magnetic Configuration Studies	16JAN12	43	14MAR12	0.00			■						
MILEBASE03	Begin FY13 Operations		0	01FEB13*	0.00				▼					
MILEBASE04	FY13 24 week run- Initial Heating Experiments	04FEB13	170	27SEP13	0.00				■					
MILEBASE05	Begin FY15 Operations		0	02FEB15*	0.00						▼			
MILEBASE06	FY15 24 week run - High Beta Experiments	03FEB15	171	29SEP15	0.00						■			
Administration and Management														
8190 - Administration and Management														
1805FY08	FY10-Administration/Proj mgnt	01OCT09*	259	28SEP10	469,137.88	■								
1805FY090	FY11-Administration/Proj mgnt	01OCT10*	259	28SEP11	719,440.42		■							
1805FY100	FY12-Administration/Proj mgnt	03OCT11*	259	27SEP12	1,228,813.52			■						
1805FY110	FY13-Administration/Proj mgnt	01OCT12*	259	26SEP13	1,270,619.62				■					
1805FY120	FY14-Administration/Proj mgnt	01OCT13*	259	26SEP14	1,313,827.03					■				
1805FY130	FY15-Administration/Proj mgnt	01OCT14*	259	28SEP15	1,358,491.91						■			
Post MIE PTP & sys caretaking														
8191 - Post PTP maintenance and sys caretaking														
1805FY0900	Post PTP maintenance & caretaking	07JUN11*	145	26DEC11	519,177.22			■						
Machine Operations														
8192 - Machine Operations														
1805FY0901	FY12-Engr ops	16JAN12*	40	09MAR12	121,851.34			■						
1805FY0904	FY12-Machine Ops	16JAN12*	40	09MAR12	344,167.04									
1805FY0905	FY12-Exp Pwr (FCPC)	16JAN12*	40	09MAR12	110,153.98									
1805FY0906	FY12-Facility Power (MG/AC)	16JAN12*	40	09MAR12	14,016.76									
<div style="display: flex; justify-content: space-between;"> <div> <p>Run Date 01AUG07 14:07</p> <p>© Primavera Systems, Inc.</p> </div> <div> <p>Forecast Progress Bar Critical Activity</p> </div> <div> <p>ETCU</p> <p>NCSX Program UPGRADES</p> </div> <div> <p>Sheet 1 of 18</p> </div> </div>														

Activity ID	Activity Description	Forecast Start	Forecast Duration (work days)	Forecast Finish	Budget	FY10 - FY17												
						FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17					
1808FY1402	FY15 Research mgt & oversight	03OCT14*	255	24SEP15	819,052.52													ZARNSTORFF =1,768hr ; ORNLRM =884r
Diagnostic Oversight																		
Job: 8184 - Diagnostic Oversight																		
1808DIAG	FY10 physics support of diag upgrades	01OCT10*	1,131	30JAN15	4,011,113.58													PPPLRM =8451hr ; ORNLRM = NOVA =2290 ; JHC = AUBURN =884 ; UCLA = LLNL =352 ;
Physics Analysis & Support																		
Job: 8185 - Physics analysis & support																		
1808FY0912	FY10 Research mgt & oversight	01OCT09*	250	15SEP10	818,832.00													TRAVEL =12\$K ; ZARNSTORFF =884hr ; PPPLRM =1,768hr 1 ; ORNLRM =884hr
1808FY0913	FY11 Research mgt & oversight	01OCT10*	255	22SEP11	596,474.52													TRAVEL =12\$K ; PPPLRM =1,768hr ; ORNLRM =884hr
1808FY0914	FY12 Research mgt & oversight	03OCT11*	255	21SEP12	614,568.20													TRAVEL =12\$K ; PPPLRM =1,768hr ; ORNLRM =884hr
1808FY0915	FY13 Research mgt & oversight	03OCT12*	255	24SEP13	633,227.64													TRAVEL =12\$K ; PPPLRM =1,768hr ; ORNLRM =884hr
1808FY0916	FY14 Research mgt & oversight	03OCT13*	255	24SEP14	652,468.00													TRAVEL =12\$K ; PPPLRM =1,768hr ; ORNLRM =884hr
1808FY0917	FY15 Research mgt & oversight	03OCT14*	255	24SEP15	672,291.80													TRAVEL =12\$K ; PPPLRM =1,768hr ; ORNLRM =884hr
1808FY11-1	Ops support, Anaysis, Theory (PPPL)	01OCT12*	261	30SEP13	6,353,851.84													r//rm2=29702 (17 fte)
1808FY11-2	Ops support, Anaysis, Theory (ORNL)	01OCT12*	261	30SEP13	3,053,579.05													omlrm=11,315 (6.5 fte)
1808FY15-1	Ops support, Anaysis, Theory (PPPL)	01OCT14*	261	30SEP15	8,491,544.88													r//rm2=37,128 (21 fte)
1808FY15-2	Ops support, Anaysis, Theory (ORNL)	01OCT14*	261	30SEP15	4,010,248.32													omlrm=14,144 (8 fte)
Collaborations																		
Job: 8186 - Collaborators																		
1808FY11-3	Ops support, Anaysis, Theory (OTHER)	01OCT12*	261	30SEP13	4,000,000.00													
1808FY15-3	Ops support, Anaysis, Theory (OTHER)	01OCT14*	261	30SEP15	5,000,000.00													
Cost Center 9405 - Diagnostic Equipment																		
3 - Diagnostics																		
310 - Magnetics																		
3102 - In-vessel Magnetics																		
3051	In-vessel magneticsDsn/fab	03OCT11*	96	13FEB12	88,462.90													EM/EM =36hr ; EA/SM =72 ; EM/TB =576hr ; 41=9.5\$K ;
3055	In-vessel magnetics-Fab./Install	14FEB12	17	07MAR12	37,421.28													EM/SM =144hr ; EM/TB =144hr ;
3058	In-vessel magnetics-Commission	08MAR12*	20	04APR12	23,294.88													EM/SM =144hr ;
3103 - Magnetic Instrumentation																		
2069	Magnetics system cable & raceway installation	27SEP11	100	13FEB12	156,267.75													ea/sb=256;em/tb=728;41=31.53

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Activity ID	Activity Description	Forecast Start	Forecast Duration (work days)	Forecast Finish	Budget													
						FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17					
3061	Magnetics instrumentation -Design/Procure	01MAR11*	150	26SEP11	907,879.68													
3065	Magnetics instrumentation -Fab./Install	27SEP11	100	13FEB12	210,590.44													
3068	Magnetics instrumentation -Commission	14FEB12	65	14MAY12	107,772.48													
3104 - Terminate ex-vessel magnetics sensors																		
3075	Complete Termination ex-vsl magn sensors	01OCT12*	65	28DEC12	62,831.52													
332 - UV Spectrometer																		
3320 - UV Spectrometer																		
3101	UV spectrometer-Design/Fab.	15MAY12*	45	16JUL12	35,319.60													
3105	UV spectrometer-Fab./Install	17JUL12	97	28NOV12	57,913.63													
3108	UV spectrometer-Commission	29NOV12*	40	23JAN13	13,735.44													
333 - Bolometer Array																		
3330 - Bolometer Array																		
3091	Bolometer array-Design/Fab.	01MAY12*	45	02JUL12	49,495.68													
3095	Bolometer array-Fab./Install	03JUL12	112	05DEC12	49,002.45													
3098	Bolometer array-Commission	06DEC12*	40	30JAN13	9,156.96													
3099	Bolometer array-Fab./Install	04AUG14*	81	24NOV14	102,658.99													
3100	Bolometer array-Commission	25NOV14*	40	19JAN15	19,581.12													
335 - Filterscopes																		
3350 - Filterscopes																		
3151	Filterscopes-Design/Fab.	02APR12*	45	01JUN12	24,747.84													
3155	Filterscopes-Fab./Install	04JUN12	117	13NOV12	75,247.50													
3158	Filterscopes-Commission	14NOV12*	40	08JAN13	37,822.32													
341 - Soft X-Ray Arrays																		
3410 - Soft X-Ray Arrays																		
3035	Soft X-Ray Arrays-Fab./Install	01APR14*	144	17OCT14	199,528.98													
3038	Soft X-Ray Arrays-Commission	20OCT14*	40	12DEC14	25,752.96													
342 - X-ray crystal spectroscopy																		
3420 - X-ray crystal spectroscopy																		
3039	X-ray crystal spectroscopy-Design,Fab,Install	01FEB12*	261	30JAN13	703,886.24													

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Activity ID	Activity Description	Forecast Start	Forecast Duration (work days)	Forecast Finish	Budget													
						FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17					
351 - Thomson Scattering																		
3510 - Thomson Scattering																		
3011	Thomson Scattering-Design/Fab.	01OCT10*	170	26MAY11	1,492,172.32													
3015	Thomson Scattering-Fab./Install	27MAY11*	228	10APR12	551,297.65													
3018	Thomson Scattering-Commission	01OCT12*	85	25JAN13	126,230.40													
352 - DNB																		
3520 - DNB Installation and servies																		
3081	DNB installation -Design/procure	01OCT13*	192	25JUN14	447,690.24													
3085	DNB installation -Fab./Install	26JUN14	138	05JAN15	264,996.72													
3088	DNB installation -Commission	06JAN15*	40	02MAR15	252,252.00													
353 - MSE																		
3530 - MSE																		
3530-1	MSE-Design/Procure	31JUL13*	151	26FEB14	632,927.15													
3530-2	MSE-Fab./Install	27FEB14	204	09DEC14	520,577.29													
3530-3	MSE-Commission	10DEC14*	73	20MAR15	291,242.88													
354 - CHERS																		
3540 - CHERS																		
3021	CHERS -Design/Procure	01OCT13*	165	19MAY14	648,989.28													
3025	CHERS -Fab./Install	20MAY14	138	27NOV14	268,345.88													
3028	CHERS -Commission	28NOV14*	40	22JAN15	29,371.68													
355 - ECE																		
3550 - ECE																		
3550-01	MSE-Design/Procure	01OCT13*	67	01JAN14	164,170.20													
3550-2	MSE-Fab./Install	02JAN14	65	02APR14	170,821.44													
3550-3	MSE-Commission	03APR14*	52	13JUN14	197,850.24													

EM//EM =432hr ; EE//EM =288hr ;
EA//SM =432 ; EM//SM =864hr ;
EE//SM =432hr ; EM//TB =864hr ;
41=680\$K ;

EM//EM =432hr ; EE//EM =144hr ;
EA//SM =432 ; EM//SM =864hr ;
EE//SM =432hr ; EM//TB =864hr ;
EC//EM =432hr ;

EM//TB =432hr ; EC//EM =432hr ;

EA//SM =288 ; EM//SM =576hr ;
EM//TB =576hr ; 41=153.6\$K ;

EA//SM =144 ; EM//SM =864hr ;
EM//TB =576hr ; EC//EM =144hr ;

EA//SM =144 ; EM//SM =864hr ;
EM//TB =144hr ; EC//EM =288hr ;

em//em=432;ea//sb=864
em//sm=576;em//tb=432;41=169

ea//sb=864;em//sm=1440
em//tb=720;ec//em=288

ea//sb=288;em//sm=864
em//tb=288;ec//em=288

EM//EM =288hr ; EA//SM =288 ;
EM//SM =576hr ; EE//SM =144hr ;
EM//TB =576hr ; 41=225.6\$K ;

EM//EM =288hr ; EA//SM =288 ;
EM//SM =576hr ; EM//TB =576hr ;

EC//EM =144hr ;

em//em=144;ee//em=144;ee//sm=144;41=47

em//em=144;ee//em=144;em//sm=288
ee//tb=144;em//tb=144;ec//em=144

em//em=144;ee//em=144;em//sm=288;ec//em=432

Activity ID	Activity Description	Forecast Start	Forecast Duration (work days)	Forecast Finish	Budget	Forecast									
						FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17		
356 - Interferometers															
3562 - Interferometer															
3041	Interferometer-Design/Procure	12MAR12*	127	04SEP12	117,220.68										
3045	Interferometer-Fab./Install	05SEP12*	48	09NOV12	156,718.37										
3048	Interferometer-Commission	12NOV12*	28	19DEC12	51,557.76										
357 - Reflectometer															
3570 - Reflectometer															
3040	Reflectometer-Design,Fab,Install	01JAN14*	261	31DEC14	1,018,525.13										
361 - Filtered Cameras															
3611 - Filtered 2-D cameras															
3125	Filtered 2-D cameras-Fab./Install	03OCT14*	65	01JAN15	170,697.60										
3612 - Filtered 1-D camera															
3135	Filtered 1-D camera -Fab./Install	01OCT14*	65	30DEC14	68,338.80										
364 - IR Camera															
3640 - IR Camera															
3141	IR-camera-Design/Fab.	02JUL12*	51	10SEP12	24,747.84										
3145	IR-camera-Fab./Install	11SEP12	93	17JAN13	45,934.72										
3148	IR-camera-Commission	18JAN13*	16	08FEB13	13,735.44										
366 - PFC mounted Langmiur Probes															
3660 - PFC mounted Langmiur probe															
3111	PFC-mounted Langmiur probes-Design/Fab.	03OCT11*	130	30MAR12	16,136.42										
3115	PFC-mounted Langmiur probes-Fab./Install	02APR12	212	22JAN13	31,095.92										
3118	PFC-mounted Langmiur probes-Commission	23JAN13*	40	19MAR13	27,463.44										
Cost Center 9406 - Facilities Upgrades															
1 - Stellarator Core Systems															
NB Armor & PFC's															
1100 - NB Armor															
U11-100	NB Armor- Design	03MAY10*	524	03MAY12	1,611,895.02										

EM/EM =144hr ; EA/SM =144 ;
41=45
EM/EM =144hr ; EM/SM =144hr ;
EM/TB =144hr ; 41=58.6
EM/SM =144hr ;
EC/EM =144hr ;

em/em=576;ec/em=576;em/tb=432;41=\$120k
ea/sb=432;ee/em=1726;ee/sm=432

EM/EM =72hr ; 41=56\$K ;
EA/SM =144 ; EM/SM =144hr ;
EE/TB =144hr ;

41=17.5\$K ; EM/EM =36hr ;
EA/SM =72 ; EM/SM =72hr ;
EE/TB =72hr ;

EM/EM =72hr ; EA/SM =72 ;
41=17.5\$K ; EM/SM =72hr ;
EE/TB =72hr ;
EC/EM =72hr ;

EM/EM =36hr ; EA/SM =36 ;
41=02.5\$K ;
EE/EM =72hr ; EM/SM =72hr ;
41=02.5\$K ;
EM/SM =72hr ; 41=10\$K ;

omlem analyst=1800;oml design=6500;omlem=3600

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Activity ID	Activity Description	Forecast Start	Forecast Duration (work days)	Forecast Finish	Budget	FY10 FY11 FY12 FY13 FY14 FY15 FY16 FY17											
						Gantt chart area with colored bars representing activity duration and budget allocation across fiscal years.											
U11-105	NB Armor- Procure/Fabricate	09NOV11*	257	01NOV12	1,422,171.61	[Gantt bar for U11-105]											
U11-110	NB Armor- Install	03AUG12*	130	31JAN13	67,455.20	[Gantt bar for U11-110]											
121 -Port Extensions & NB Port Covers																	
1211 - Port Extensions																	
U121-200	Port extensions-Design (none)	04JUL11*	65	30SEP11	0.00	[Gantt bar for U121-200]											
U121-205	Port extensions-Fabricate (66 ports)	03OCT11	130	30MAR12	346,150.00	[Gantt bar for U121-205]											
U121-210	Port extensions-Install	02APR12	65	29JUN12	51,796.80	[Gantt bar for U121-210]											
1212 - NB Ports & Covers																	
U121-100	NB ports (3) -design	03OCT11*	40	25NOV11	41,689.60	[Gantt bar for U121-100]											
U121-105	NB ports (3) -fabricate	28NOV11	129	24MAY12	227,556.00	[Gantt bar for U121-105]											
U121-110	NB ports (3) -install	25MAY12	20	21JUN12	35,316.00	[Gantt bar for U121-110]											
2 - Plasma Heating, Fueling & Vac Systems																	
211 - Gas Fueling Systems																	
2111 - 3 Gas Injectors																	
211-1	Design	01MAY12*	52	11JUL12	111,796.92	[Gantt bar for 211-1]											
211-2	Procure	12JUL12*	65	10OCT12	57,363.05	[Gantt bar for 211-2]											
211-3	Assy/Installation	11OCT12*	80	30JAN13	105,562.20	[Gantt bar for 211-3]											
220 - Torus Vacuum Pumping System																	
2202 - 2 pumps on one duct																	
U122-25	Design	01MAR12*	65	30MAY12	215,202.48	[Gantt bar for U122-25]											
U122-26	Procure	31MAY12*	100	17OCT12	170,608.53	[Gantt bar for U122-26]											
U122-27	Assy/Installation	18OCT12*	105	13MAR13	180,140.90	[Gantt bar for U122-27]											
231 - Glow Discharge Cleaning System																	
2310 - Glow Discharge Cleaning																	
U231-100	Design GDC system	01OCT12*	40	23NOV12	34,504.80	[Gantt bar for U231-100]											
U231-110	Fabricate GDC system	26NOV12*	40	18JAN13	112,834.80	[Gantt bar for U231-110]											
U231-120	Install & Test GDC system	21JAN13*	45	22MAR13	48,744.00	[Gantt bar for U231-120]											
251 - Neutral Beam #1																	
2505 - Beamline #1 Installation																	
Refurbishment																	
25-000#1	Begin NB#1 Refurb and Installation	02AUG10*	0		0.00	[Gantt bar for 25-000#1]											
25-090#1	Two HVST rebuilds	02AUG10	190	22APR11	58,386.53	[Gantt bar for 25-090#1]											
25-091#1	Source filament setup/bench test	02AUG10	190	22APR11	21,542.74	[Gantt bar for 25-091#1]											

Activity ID	Activity Description	Forecast Start	Forecast Duration (work days)	Forecast Finish	Budget	Forecast												
						FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17					
25-092#1	high voltage power supply troubleshooting/tuning	02AUG10	190	22APR11	29,698.52													
25-093#1	modulator wiring modifications	02AUG10	190	22APR11	14,641.33													
25-100#1	6) Drafting Support	02AUG10	190	22APR11	146,555.27													
25-105#1	7) Refurbish sources	02AUG10	190	22APR11	5,229.69													
25-110#1	8) Fabricate and install new filaments	02AUG10	190	22APR11	8,149.02													
25-115#1	9) Refurbish calorimeters as needed	02AUG10	190	22APR11	23,838.09													
25-130#1	12) Dsn,Fan,Instl NBI vac sys INCL NEW TURBO PMP	02AUG10	190	22APR11	93,673.02													
25-145#1	15)Upgrade/Calibr of telemetry, ptical links etc	02AUG10	190	22APR11	78,042.98													
25-155#1	17) Fab/Instl Front Box Nitrogen Cryopanel.	02AUG10	190	22APR11	121,277.42													
25-175#1	21) Sys Engr & Work Planning Procedures	02AUG10	190	22APR11	90,700.95													
Re-Install Beamline																		
25-180#1	31)Work Planning Procedures	25APR11	320	13JUL12	77,824.50													
25-185#1	32) EAD analysis of platform support capability	25APR11	320	13JUL12	3,891.23													
25-190#1	33) Fabr BL alignment measur fixture,	25APR11	320	13JUL12	33,177.90													
25-195#1	34) Fabr new bellows/electrical break	25APR11	320	13JUL12	21,538.92													
25-200#1	35) Perform alignment measurements	25APR11	320	13JUL12	1,076.95													
25-205#1	36) Prepare platform for base plate	25APR11	320	13JUL12	2,153.89													
25-210#1	37) Relocate base plate to NCSX location	25APR11	320	13JUL12	8,615.57													
25-215#1	38) Lift NB from Refurb location to NCSX locatio	25APR11	320	13JUL12	33,385.31													
25-220#1	39) Enclose platform around base plate	25APR11	320	13JUL12	4,307.79													
Re-Install Cables																		
25-225#1	Cabling-Design & WP Procedures	25APR11	320	13JUL12	31,129.80													
25-230#1	Cabling-Fabr and Install new Junction Box	25APR11	320	13JUL12	21,538.92													
25-235#1	Cabling-Hi-potting cable run and fixing problems	25APR11	320	13JUL12	10,769.46													
25-240#1	Cabling-Install Cable Trays	25APR11	320	13JUL12	43,077.83													
25-245#1	Cabling-Pull cables Arc Room to PVC Junction Box	25APR11	320	13JUL12	95,105.87													
25-250#1	Cabling- M&S // trays, fixtures, materials	25APR11	320	13JUL12	38,784.28													
Beamline Connections																		
25-255#1	Install weld cables Junction Box to lon.Source.	25APR11	320	13JUL12	11,664.48													
25-260#1	Connect BL to foreline and exhaust manifold.	25APR11	320	13JUL12	5,202.81													
25-265#1	New PLC. Test system after installation.	25APR11	320	13JUL12	4,307.79													
25-270#1	Connect BL to new manifold & test	25APR11	320	13JUL12	4,307.79													
25-275#1	Connect beamline to new manifold & test.	25APR11	320	13JUL12	4,307.79													
25-280#1	Connect beamline to new manifold and test	25APR11	320	13JUL12	2,153.89													

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Activity ID	Activity Description	Forecast Start	Forecast Duration (work days)	Forecast Finish	Budget	Forecast															
						FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17								
25-285#1	Install Water System	25APR11	320	13JUL12	35,440.95																
25-290#1	Fab & Install Water Cooled Aperture	25APR11	320	13JUL12	24,060.21																
25-295#1	New PLC for water sys & test	25APR11	320	13JUL12	2,153.89																
25-300#1	Diag Sys-Fab/install new cables	25APR11	320	13JUL12	2,153.89																
25-310#1	Drafting Labor Support	25APR11	320	13JUL12	69,645.23																
2506 - Beamline #1 Commissioning																					
Commissioning																					
25-119C#1	Begin Commissioning BL#1	01OCT12*	0		0.00																
25-120C#1	10) Maint& repair of cryogenic transfer system.	01OCT12	65	28DEC12	13,704.76																
25-125C#1	11) Fill LN2 supply tank.	01OCT12	65	28DEC12	1,619.10																
25-135C#1	13) Water system maintenance and calibration	01OCT12	65	28DEC12	12,887.50																
25-140C#1	14) Maint/calibration of auxiliary power supplie	01OCT12	65	28DEC12	7,253.30																
25-150C#1	16) New PLC ,Test & Calibrate	01OCT12	65	28DEC12	215,475.92																
25-160C#1	18) Subsystem integrated testing	01OCT12	65	28DEC12	33,805.20																
25-165C#1	19) NBI Computer Systems:	01OCT12	65	28DEC12	69,209.16																
25-170C#1	20) NBI Computer SystemsTune, debug	01OCT12	65	28DEC12	48,859.20																
25-305C#1	Neutral Beam Integrated Systems Testing	31DEC12	20	25JAN13	45,073.60																
252 - Neutral Beam #2																					
2507 - Beamline #2 Installation																					
Refurbishment																					
25-000#2	Begin NB#1 Refurb and Installation	02AUG10	0		0.00																
25-100#2	6) Drafting Support	02AUG10*	190	22APR11	73,277.63																
25-105#2	7) Refurbish sources	02AUG10*	190	22APR11	5,229.69																
25-110#2	8) Fabricate and install new filaments	02AUG10*	190	22APR11	8,149.02																
25-115#2	9) Refurbish calorimeters as needed	02AUG10*	190	22APR11	23,838.09																
25-130#2	12) Dsn,Fan,Instl NBI vac sys INCL NEW TURBO PMP	02AUG10*	190	22APR11	156,438.54																
25-145#2	15)Upgrade/Calibr of telemetry, ptical links etc	02AUG10*	190	22APR11	78,042.98																
25-155#2	17) Fab/Instl Front Box Nitrogen Cryopanel.	02AUG10*	190	22APR11	121,277.42																
25-175#2	21) Sys Engr & Work Planning Procedures	02AUG10*	190	22APR11	45,350.48																
Re-Install Beamline																					
25-180#2	31)Work Planning Procedures	25APR11*	350	24AUG12	77,904.34																
25-185#2	32) EAD analysis of platform support capability	25APR11*	350	24AUG12	0.00																
25-190#2	33) Fabr BL alignment measur fixture,	25APR11*	350	24AUG12	33,208.81																
25-195#2	34) Fabr new bellows/electrical break	25APR11*	350	24AUG12	21,561.02																

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Activity ID	Activity Description	Forecast Start	Forecast Duration (work days)	Forecast Finish	Budget	FY10 - FY17															
						FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17								
25-200#2	35) Perform alignment measurements	25APR11*	350	24AUG12	1,078.05																
25-205#2	36) Prepare platform for base plate	25APR11*	350	24AUG12	2,156.10																
25-210#2	37) Relocate base plate to NCSX location	25APR11*	350	24AUG12	8,624.41																
25-215#2	38) Lift NB from Refurb location to NCSX locatio	25APR11*	350	24AUG12	33,419.58																
25-220#2	39) Enclose platform around base plate	25APR11*	350	24AUG12	4,312.20																
Re-Install Cables																					
25-225#2	Cabling-Design & WP Procedures	25APR11*	350	24AUG12	31,161.74																
25-230#2	Cabling-Fabr and Install new Junction Box	25APR11*	350	24AUG12	21,561.02																
25-235#2	Cabling-Hi-potting cable run and fixing problems	25APR11*	350	24AUG12	10,780.51																
25-240#2	Cabling-Install Cable Trays	25APR11*	350	24AUG12	43,122.03																
25-245#2	Cabling-Pull cables Arc Room to PVC Junction Box	25APR11*	350	24AUG12	95,201.13																
25-250#2	Cabling- M&S f/ trays, fixtures, materials	25APR11*	350	24AUG12	38,813.91																
Beamline Connections																					
25-255#2	Install weld cables Junction Box to Ion Source.	25APR11*	350	24AUG12	11,676.22																
25-260#2	Connect bBL to foreline and exhaust manifold.	25APR11*	350	24AUG12	5,207.91																
25-265#2	New PLC. Test system after installation.	25APR11*	350	24AUG12	4,312.20																
25-270#2	Connect BL to new manifold & test	25APR11*	350	24AUG12	4,312.20																
25-275#2	Connect beamline to new manifold & test.	25APR11*	350	24AUG12	4,312.20																
25-280#2	Connect beamline to new manifold and test	25APR11*	350	24AUG12	2,156.10																
25-285#2	Install Water System	25APR11*	350	24AUG12	35,476.50																
25-290#2	Fab & Install Water Cooled Aperture	25APR11*	350	24AUG12	24,082.83																
25-295#2	New PLC for water sys & test	25APR11*	350	24AUG12	2,156.10																
25-300#2	Diag Sys-Fab/install new cables	25APR11*	350	24AUG12	2,156.10																
25-310#2	Drafting Labor Support	25APR11*	350	24AUG12	69,716.64																
2508 - Beamline #2 Commissioning																					
Refurbishment																					
25-119C#2	Begin Commissioning BL#2	01OCT12*	0		0.00																
25-120C#2	10) Maint& repair of cryogenic transfer system.	01OCT12*	65	28DEC12	13,704.76																
25-125C#2	11) Fill LN2 supply tank.	01OCT12*	65	28DEC12	1,619.10																
25-135C#2	13) Water system maintenance and calibration	01OCT12*	65	28DEC12	12,887.50																
25-140C#2	14) Maint/calibration of auxiliary power supplie	01OCT12*	65	28DEC12	7,253.30																
25-150C#2	16) New PLC ,Test & Calibrate	01OCT12*	65	28DEC12	215,475.92																
25-160C#2	18) Subsystem integrated testing	01OCT12*	65	28DEC12	33,805.20																
25-165C#2	19) NBI Computer Systems:	01OCT12*	65	28DEC12	69,209.16																
25-170C#2	20) NBI Computer SystemsTune, debug	01OCT12*	65	28DEC12	48,859.20																

Activity ID	Activity Description	Forecast Start	Forecast Duration (work days)	Forecast Finish	Budget									
						FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	
Beamline Connections														
25-305C#2	Neutral Beam Integrated Systems Testing	31DEC12*	20	25JAN13	45,073.60					EM/TB =160hr ; EE//SM =160hr ;				
254 - Neutral Beam #3 & 4														
Job: 2591 - 3rd and 4th Beamline-STEVENSON														
Refurbishment														
NB34-001	Begin NB#1 Refurb and Installation	01OCT13*	0		0.00					▼ =00 ;				
NB34-002	Procure 2 new power supplies	01OCT13	160	12MAY14	2,000,400.00					41=250\$k ; 48=1,350 ;				
NB34-004	6) Drafting Support	01OCT13	130	31MAR14	326,518.40					EA/SB =2,080hr ;				
NB34-005	7) Refurbish sources	01OCT13	130	31MAR14	11,651.60					EM/TB =40hr ; EE//SM =40hr ;				
NB34-007	8) Fabricate and install new filaments	01OCT13	130	31MAR14	17,975.60					41=04\$k ; EM/TB =40hr ; EE//SM =40hr ;				
NB34-010	9) Refurbish calorimeters as needed	01OCT13	130	31MAR14	52,930.40					41=04\$k ; EM/TB =160hr ; EE//SM =160hr ;				
NB34-013	12) Dsn,Fan,Instl NBI vac sys INCL NEW TURBO PMP	01OCT13	130	31MAR14	204,196.48					EM/TB =112hr ; EE//SM =112hr ; 41=100\$k ; EM//EM =64hr ;				
NB34-018	15)Upgrade/Calibr of telemetry, ptical links etc	01OCT13	130	31MAR14	171,625.40					EM/TB =260hr ; EE//SM =260hr ; EM//EM =80hr ; 41=50\$k ;				
NB34-022	17) Fab/Instl Front Box Nitrogen Cryopanel.	01OCT13	130	31MAR14	268,671.20					EM/TB =680hr ; EE//SM =680hr ; EM//EM =80hr ; 41=34\$k ;				
NB34-026	21) Sys Engr & Work Planning Procedures	01OCT13	130	31MAR14	202,080.00					EM//EM =960hr ;				
Re-Install Beamline														
NB34-027	31)Work Planning Procedures	01APR14	130	29SEP14	168,400.00					EM//EM =800hr ;				
NB34-028	32) EAD analysis of platform support capability	01APR14	130	29SEP14	8,420.00					EM//EM =40hr ;				
NB34-029	33) Fabr BL alignment measur fixture,	01APR14	130	29SEP14	71,265.00					EM/TB =100hr ; EE//SM =100hr ; EM//EM =80hr ; 41=16\$k ;				
NB34-033	34) Fabr new bellows/electrical break	01APR14	130	29SEP14	46,606.40					EM/TB =160hr ; EE//SM =160hr ;				
NB34-035	35) Perform alignment measurements	01APR14	130	29SEP14	2,330.32					EM/TB =08hr ; EE//SM =08hr ;				
NB34-037	36) Prepare platform for base plate	01APR14	130	29SEP14	4,660.64					EM/TB =16hr ; EE//SM =16hr ;				
NB34-039	37) Relocate base plate to NCSX location	01APR14	130	29SEP14	18,642.56					EM/TB =64hr ; EE//SM =64hr ;				
NB34-041	38) Lift NB from Refurb location to NCSX locatio	01APR14	130	29SEP14	72,239.92					EE//SM =248hr ; EM/TB =248hr ;				
NB34-043	39) Enclose platform around base plate	01APR14	130	29SEP14	9,321.28					EM/TB =32hr ; EE//SM =32hr ;				
Re-Install Cables														
NB34-045	Cabling-Design & WP Procedures	01APR14	130	29SEP14	67,360.00					EM//EM =320hr ;				
NB34-046	Cabling-Fabr and Install new Junction Box	01APR14	130	29SEP14	46,606.40					EM/TB =160hr ; EE//SM =160hr ;				
NB34-048	Cabling-Hi-potting cable run and fixing problems	01APR14	130	29SEP14	23,303.20					EM/TB =80hr ; EE//SM =80hr ;				
NB34-050	Cabling-Install Cable Trays	01APR14	130	29SEP14	93,212.80					EM/TB =320hr ; EE//SM =320hr ;				
NB34-052	Cabling-Pull cables Arc Room to PVC Junction Box	01APR14	130	29SEP14	205,397.60					EM/TB =640hr ; EE//SM =640hr ; 41=12\$k ;				
NB34-055	Cabling- M&S f/ trays, fixtures, materials	01APR14	130	29SEP14	82,212.00					41=52\$k ;				
Beamline Connections														
NB34-056	Install weld cables Juncton Box to lon Source.	01APR14	130	29SEP14	25,200.40					41=01\$k ; EM/TB =80hr ; EE//SM =80hr ;				
NB34-059	Connect BL to foreline and exhaust manifold.	01APR14	130	29SEP14	11,218.48					41=01\$k ; EM/TB =32hr ; EE//SM =32hr ;				

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Activity ID	Activity Description	Forecast Start	Forecast Duration (work days)	Forecast Finish	Budget															
						FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17							
4 - Electrical Power Systems																				
411 - Auxliary AC Power Systems																				
Auxliary AC Power Systems																				
U411-1	411 - Auxliary AC Power-DSN/PROCURE	03OCT11*	130	30MAR12	142,201.50															
U411-2	411 - Auxliary AC Power-Installation	02APR12	130	28SEP12	137,721.54															
U411-3	411 - Auxliary AC Power-Commissioning	01OCT12	81	21JAN13	76,962.93															
412 - Experimental AC Power Systems																				
Experimantal AC Power Systems																				
U412-1	412 - Experimental AC Power-DSN/PROCURE	03OCT11*	130	30MAR12	31,009.45															
U412-2	412 - Experimental AC Power-Installation	02APR12	130	28SEP12	29,235.36															
U412-3	412 - Experimental AC Power-Commissioning	01OCT12	76	14JAN13	19,054.60															
422 - D-Site AC/DC Converters																				
D-Site AC/DC Converters																				
U422-1	422 - D-site AC/DC Converters-DSN/PROCURE	03FEB12*	125	26JUL12	9,195.13															
U422-3	422 - D-site AC/DC Converters-Commissioning	27JUL12	125	17JAN13	61,614.83															
431 - C-Site DC Systems																				
C-Site DC Systems																				
U431-1	431 - C-site DC Systems-DSN/PROCURE	01FEB12*	125	24JUL12	229,315.48															
U431-2	431 - C-site DC Systems-Installation	25JUL12	119	07JAN13	983,920.17															
432 - D-to-C Site DC Systems																				
D to C Site DC Systems																				
U432-1	432 - D-to-C-Site DC Systems-DSN/PROCURE	01OCT10*	131	01APR11	629,436.42															
U432-2	432 - D-to-C-Site DC Systems-Installation	04APR11	190	23DEC11	2,044,327.36															
U432-3	432 - D-to-C-Site DC Systems-Commissioning	26DEC11	65	23MAR12	95,647.73															
433 - D-Site DC Systems																				
D Site DC Systems																				
U433-1	433 - D-site DC Systems-DSN/PROCURE	01OCT10*	131	01APR11	367,242.88															
U433-2	433 - D-site DC Systems-Installation	04APR11	190	23DEC11	487,072.67															
U433-3	433 - D-site DC Systems-Commissioning	26DEC11	65	23MAR12	58,844.74															

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Activity ID	Activity Description	Forecast Start	Forecast Duration (work days)	Forecast Finish	Budget										
						FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17		
441 - Electrical Interlocks															
Electrical Interlocks															
U441-1	441 - Electrical Interlocks-DSN/PROCURE	03OCT11*	125	23MAR12	310,845.82										
U441-2	441 - Electrical Interlocks-Installation	26MAR12	120	07SEP12	280,727.83										
U441-3	441 - Electrical Interlocks-Commissioning	10SEP12	72	18DEC12	58,711.00										
442 - Kirk Key Interlocks															
Kirk Key Interlocks															
U442-1	442 - Kirk Key Interlocks-DSN/PROCURE	03OCT11*	125	23MAR12	50,617.73										
U442-2	442 - Kirk Key Interlocks-Installation	26MAR12	119	06SEP12	31,986.04										
U442-3	442 - Kirk Key Interlocks-Commissioning	07SEP12	76	21DEC12	22,799.87										
443 - Real Time Control Systems															
Real Time Control Systems															
U443-1	443 - Real Time Control-DSN/PROCURE	03OCT11*	125	23MAR12	42,063.12										
444 - Instrument Systems															
Instrument Systems															
U444-1	444 - Instrumentation-DSN/PROCURE	03OCT11*	125	23MAR12	271,408.32										
U444-2	444 - Instrumentation-Installation	26MAR12	190	14DEC12	101,657.47										
U444-3	444 - Instrumentation-Commissioning	17DEC12	35	01FEB13	59,059.77										
445 - Coil protection Systems															
Coil Protection Systems															
U445-1	445 - Coil Protection-DSN/PROCURE	01NOV11*	125	23APR12	250,923.52										
U445-2	445 - Coil Protection-Installation	24APR12	156	27NOV12	140,399.40										
U445-3	445 - Coil Protection-Commissioning	28NOV12	25	01JAN13	57,441.46										
446 - Ground Fault Monitoring System															
Ground Fault Monitoring System															
U446-1	446 - Ground Fault Monitor-DSN/PROCURE	01DEC11*	125	23MAY12	217,168.71										
U446-2	446 - Ground Fault Monitor-Installation	24MAY12	159	01JAN13	120,470.93										
U446-3	446 - Ground Fault Monitor-Commissioning	02JAN13	10	15JAN13	6,580.73										

41=49\$K ; EE//EM =647hr ;
EA//SM =680 ;
EE//EM =350hr ; EE//SM =462hr ;
EE//TB =1,320hr ;
EE//EM =99hr ; EE//SM =99hr ;
EE//TB =198hr ;

41=10\$K ; EE//EM =99hr ;
EA//SM =99 ;
EE//EM =20hr ; EE//SM =33hr ;
EE//TB =231hr ;
EE//EM =33hr ; EE//SM =33hr ;
EE//TB =99hr ;

EE//EM =198hr ;

41=108\$K ; EA//SM =264 ;
EE//EM =330hr ;
EE//SM =86hr ; EE//EM =92hr ;
EE//TB =693hr ;
EE//SM =73hr ; EE//EM =106hr ;
EE//TB =231hr ;

41=50\$K ; EE//EM =462hr ;
EA//SM =528 ;
EE//EM =125hr ; EE//SM =356hr ;
EE//TB =528hr ;
EE//SM =79hr ; EE//EM =125hr ;
EE//TB =158hr ;

41=76\$K ; EE//EM =277hr ;
EA//SM =304 ;
EE//EM =165hr ; EE//SM =191hr ;
EE//TB =528hr ;
EE//EM =13hr ; EE//SM =13hr ;
EE//TB =13hr ;

Activity ID	Activity Description	Forecast Start	Forecast Duration (work days)	Forecast Finish	Budget									
						FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	
451 - System Design and Interfaces														
Sys design and interfaces														
U451-1	451 - System Design-DSN/PROCURE	03OCT11*	335	11JAN13	344,196.55									
452 - Electrical Systems Support														
Electrical Systems support														
U452-1	452 - Electrical Systems Support-DSN/PROCURE	03OCT11*	125	23MAR12	328,857.68									
U452-2	452 - Electrical Systems Support-Installation	26MAR12	156	29OCT12	364,885.90									
U452-3	452 - Electrical Systems Support-Commissioning	30OCT12	76	12FEB13	135,899.28									
453 - System Testing (PTP's)														
Systems Testing PTP's														
U453-1	453 - System Testing-DSN/PROCURE	01OCT12*	45	30NOV12	116,583.12									
U453-3	453 - System Testing-Commissioning	03DEC12	43	30JAN13	98,875.73									
460 - FCPC Mods														
FCPC Bldg Mods														
U460-1	46- FCPCBuilding Modifications-DSN/PROCURE	03OCT11*	65	30DEC11	39,844.58									
U460-2	46- FCPCBuilding Modifications-Installation	02JAN12	65	30MAR12	72,131.34									
5 - Central I&C Systems														
510 - TCP/IP Infrastructure Systems														
Job: 5101 - TCP/IP Infrastructure Systems														
5100		02JAN12*	274	17JAN13	206,433.03									
520 - Central Instrumentation & Control Systems														
5201 - I&C Systems														
5200		02JAN12*	274	17JAN13	318,475.14									
530 - Data Acquisition & Facility Computing Sys														
5301 - Data Acquisition														
5300		02JAN12*	274	17JAN13	128,809.89									
540 - Facility Timing and synchronization System														
Job: 5401 - Facility Timing & Synchronization														
5400		02JAN12*	274	17JAN13	244,093.46									

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Activity ID	Activity Description	Forecast Start	Forecast Duration (work days)	Forecast Finish	Budget									
						FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	
550 - Real Time Plasma & Power Supply Control														
5501 - Real Time Control System														
5500		02JAN12*	274	17JAN13	499,270.01									
560 - Central Safety Interlock Systems														
Job: 5601 - Central Safety Interlock Systems														
5600		02JAN12*	274	17JAN13	222,001.80									
570 - Control Room Facility														
Job: 5701 - Control Room Facility														
5700		01OCT12*	68	02JAN13	301,062.36									
6 - Facility Systems														
612 - NB Water Cooling Systems														
NB Cooling Water														
612	Design/Install-NB water sys	15JUN12*	148	08JAN13	363,861.74									
613 - Vacuum Pumping System														
Vacuum Pumping Cooling Water														
613	Design/Install-Vac pmp sys water	01OCT12*	85	25JAN13	97,428.55									
615 - Diagnostic Water Cooling System														
Diag Cooling Water														
615	Design/Install-Diag cooling water	01OCT12*	125	22MAR13	42,640.06									
Upgrades Contingency														
Upgrade Contingency														
Upgrade Contingency														
101	Contingency FY11	01OCT10*	257	26SEP11	2,249,000.00									
102	Contingency FY12	03OCT11*	257	25SEP12	3,508,000.00									
103	Contingency FY13	01OCT12*	257	24SEP13	1,547,000.00									
104	Contingency FY14	01OCT13*	257	24SEP14	2,854,000.00									
105	Contingency FY15	01OCT14*	257	24SEP15	1,082,000.00									

Activity ID	Activity Description	Forecast Start	Forecast Duration (work days)	Forecast Finish	Budget	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17
NON MIE Funding Profile													
FUND10	Funding fy10	01OCT09*	250	15SEP10	2,269,000.00	█							
FUND11	Funding fy11	01OCT10*	250	15SEP11	13,258,000.00		█						
FUND12	Funding fy12	03OCT11*	250	14SEP12	19,300,000.00			█					
FUND13	Funding fy13	01OCT12*	250	13SEP13	45,000,000.00				█				
FUND14	Funding fy14	01OCT13*	250	15SEP14	24,000,000.00					█			
FUND15	Funding fy15	01OCT14*	250	15SEP15	45,000,000.00						█		

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