

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	01MAR13*	0.00
MILEBASE04	FY13 18 week run- Initial Heating Experiments	04MAR13*	151*	30SEP13	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

NEILSON =1122hr .65fte; REIERSEN =259hr 15%  
STRYKOWSKY=259hr .15fte; HAMPTON =1040hr

NEILSON =1409hr .81fte; REIERSEN =259hr 15%  
STRYKOWSKY=1064 .6fte; HAMPTON =1040hr

NEILSON =1,553hr; REIERSEN =1,553hr  
STRYKOWSKY =1,553hr; HAMPTON =1,872hr

NEILSON =1553hr; REIERSEN =1553hr  
STRYKOWSKY =1553hr; HAMPTON =1872hr

NEILSON =1553hr; REIERSEN =1553hr  
STRYKOWSKY =1553hr; HAMPTON =1872hr

## Post MIE PTP & sys caretaking

### 8191 - Post PTP maintenance and sys caretaking

1805FY0900	Post PTP maintenance & caretaking	07JUN11*	145	26DEC11	519,177.22
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EM/EM =856hr ; EM/SM =856hr  
EM/TB =1726hr ; 41=35\$K ;

## 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

EM/EM =410hr ; EA/EM =136hr ;  
EA/SM =68 ;

COE =273hr ; MACH TECH =273hr ;  
VAC TECH =136hr ; MACH TECH =273hr ;  
VAC TECH =546hr ; WATER TECH =273hr ;  
LN2 =20\$K ; 41=13\$K ;  
36=59 ;

EE/EM =414hr ; EE/TB =828hr ;

AC =69hr ; AC =69hr ;

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	Forecast
	Progress Bar
	Critical Activity

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NCSX Program  
UPGRADES


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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																					
1808FY1402	FY15 Research mgt & oversight	03OCT14*	255	24SEP15	819,052.52																																		ZARNSTORFF =1,768hr ; ORNLRM =884r																																																																	
<b>Diagnostic Oversight</b>																																																																																																								
<b>Job: 8184 - Diagnostic Oversight</b>																																																																																																								
DIAGOVER	FY10 physics support of diag upgrades	01APR11*	1,149	26AUG15	5,449,843.47																																																																														PPPL RM =11880hr ; ORNOVA =2900 ; JHC AUBURN =1200 ; ULLNL =600 ;																					
<b>Physics Analysis &amp; Support</b>																																																																																																								
<b>Job: 8185 - Physics analysis &amp; support</b>																																																																																																								
1808FY0912	FY10 Research mgt & oversight	01OCT09*	250	15SEP10	466,734.24																																																																																																			
1808FY0913	FY11 Research mgt & oversight	01OCT10*	255	22SEP11	339,990.48																																																																																																			
1808FY0914	FY12 Research mgt & oversight	03OCT11*	255	21SEP12	614,568.20																																																																																																			
1808FY0915	FY13 Research mgt & oversight	03OCT12*	255	24SEP13	633,227.64																																																																																																			
1808FY0916	FY14 Research mgt & oversight	03OCT13*	255	24SEP14	652,468.00																																																																																																			
1808FY0917	FY15 Research mgt & oversight	03OCT14*	255	24SEP15	672,291.80																																																																																																			
1808FY11-1	Ops support, Anaysis, Theory (PPPL)	01OCT12*	261	30SEP13	6,353,851.84																																																																																																			
1808FY11-2	Ops support, Anaysis, Theory (ORNL)	01OCT12*	261	30SEP13	3,053,579.05																																																																																																			
1808FY15-1	Ops support, Anaysis, Theory (PPPL)	01OCT14*	261	30SEP15	8,491,544.88																																																																																																			
1808FY15-2	Ops support, Anaysis, Theory (ORNL)	01OCT14*	261	30SEP15	4,010,248.32																																																																																																			
<b>Collaborations</b>																																																																																																								
<b>Job: 8186 - Collaborators</b>																																																																																																								
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																																																																																																			
<b>Cost Center 9405 - Diagnostic Equipment</b>																																																																																																								
<b>3 - Diagnostics</b>																																																																																																								
<b>310 - Magnetics</b>																																																																																																								
<b>3102 - In-vessel Magnetics</b>																																																																																																								
3051	In-vessel magneticsDsn/fab	02MAY11*	96	12SEP11	85,669.88																																																																																																			
3055	In-vessel magnetics-Fab./Install	13SEP11	17	05OCT11	36,407.35																																																																																																			
3058	In-vessel magnetics-Commission	06OCT11*	20	02NOV11	23,294.88																																																																																																			
<b>3103 - Magnetic Instrumentation</b>																																																																																																								
2069	Magnetics system cable & raceway installation	20AUG12	100	04JAN13	159,865.74																																																																																																			

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 Forecast  
 Progress Bar  
 Critical Activity

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**NCSX Program UPGRADES**

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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	
<b>351 - Thomson Scattering</b>														
<b>3510 - Thomson Scattering</b>														
3011	Thomson Scattering-Design/Fab.	13MAY11*	243	17APR12	1,516,687.86									
3015	Thomson Scattering-Fab./Install	02OCT12	109	01MAR13	577,615.68									
3018	Thomson Scattering-Commission	04MAR13	85	28JUN13	126,230.40									
<b>352 - DNB</b>														
<b>3520 - DNB Installation and servies</b>														
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									
<b>353 - MSE</b>														
<b>3530 - MSE</b>														
3530-1	MSE-Design/Procure	02OCT13*	171	28MAY14	638,291.40									
3530-2	MSE-Fab./Install	29MAY14	120	12NOV14	520,823.17									
3530-3	MSE-Commission	13NOV14*	73	23FEB15	291,242.88									
<b>354 - CHERS</b>														
<b>3540 - CHERS</b>														
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									
<b>355 - ECE</b>														
<b>3550 - ECE</b>														
3550-01	MSE-Design/Procure	25JUN14	67	25SEP14	164,170.20									
3550-2	MSE-Fab./Install	26SEP14	65	25DEC14	176,558.70									
3550-3	MSE-Commission	26DEC14	52	09MAR15	204,783.84									

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						
<b>356 - Interferometers</b>																			
<b>3562 - Interferometer</b>																			
3041	Interferometer-Design/Procure	08OCT12	57	25DEC12	120,567.60														
3045	Interferometer-Fab./Install	26DEC12*	48	01MAR13	158,369.52														
3048	Interferometer-Commission	04MAR13	28	10APR13	51,557.76														
<b>357 - Reflectometer</b>																			
<b>3570 - Reflectometer</b>																			
3040	Reflectometer-Design	19JUN12	83	11OCT12	191,468.87														
3040A	Reflectometer-Fab./Install	12OCT12	101	01MAR13	659,439.36														
3040B	Reflectometer-Commission	04MAR13	65	31MAY13	122,368.32														
<b>361 - Filtered Cameras</b>																			
<b>3611 - Filtered 2-D cameras</b>																			
3125	Filtered 2-D cameras-Fab./Install	04MAR13	65	31MAY13	161,155.68														
<b>3612 - Filtered 1-D camera</b>																			
3135	Filtered 1-D camera -Fab./Install	04MAR13	65	31MAY13	64,386.84														
<b>364 - IR Camera</b>																			
<b>3640 - IR Camera</b>																			
3141	IR-camera-Design/Fab.	02OCT12	25	05NOV12	25,588.80														
3145	IR-camera-Fab./Install	06NOV12	68	07FEB13	46,126.92														
3148	IR-camera-Commission	08FEB13	16	01MAR13	13,735.44														
<b>366 - PFC mounted Langmuir Probes</b>																			
<b>3660 - PFC mounted Langmuir probe</b>																			
3111	PFC-mounted Langmuir probes-Design/Fab.	15OCT12	20	09NOV12	16,649.40														
3115	PFC-mounted Langmuir probes-Fab./Install	12NOV12	65	08FEB13	31,714.68														
3118	PFC-mounted Langmuir probes-Commission	11FEB13*	40	05APR13	27,463.44														

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 ;

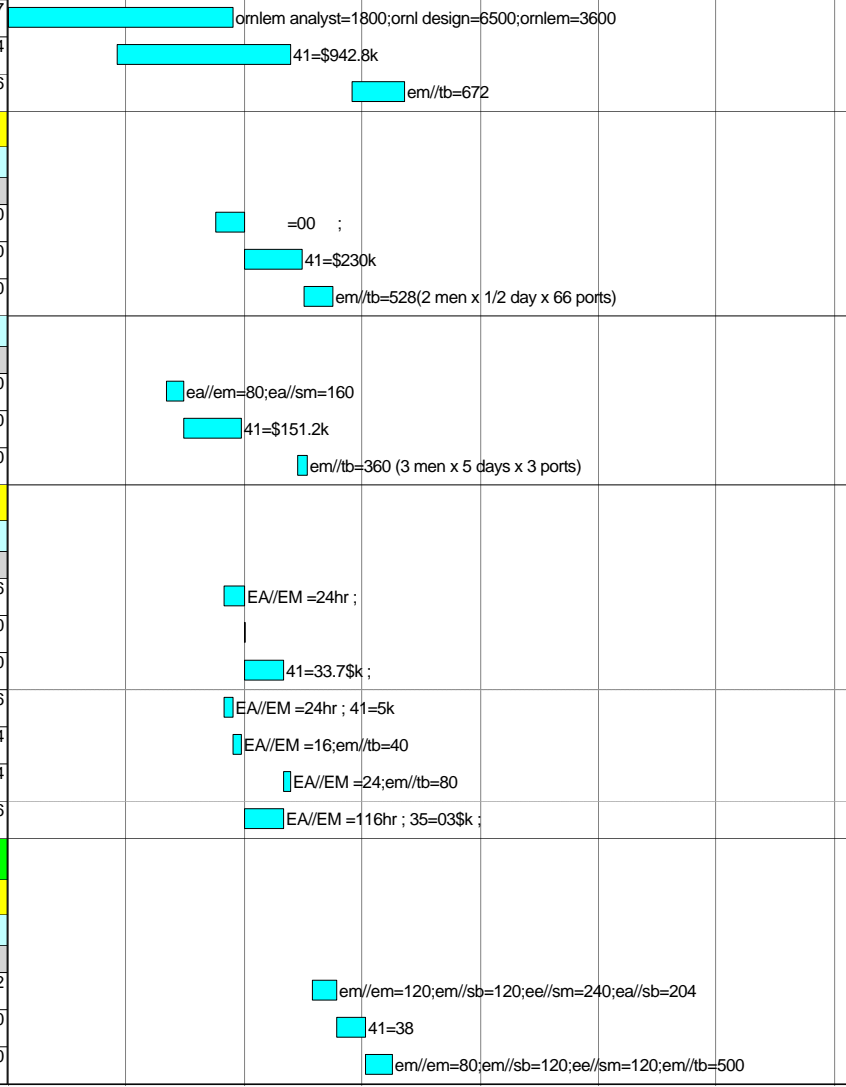
EM/EM =72hr ; 41=56\$K ;  
EA/SM =144 ; EM/SM =144hr ;  
EE/TB =144hr ;

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 ;

Activity ID	Activity Description	Forecast Start	Forecast Duration (work days)	Forecast Finish	Budget								
						FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17
<b>Cost Center 9406 - Facilities Upgrades</b>													
<b>1 - Stellarator Core Systems</b>													
<b>NB Armor &amp; PFC's</b>													
<b>1100 - NB Armor</b>													
U11-100	NB Armor- Design	01OCT09*	496	25AUG11	1,578,494.47								
U11-105	NB Armor- Procure/Fabricate	03SEP10*	385	23FEB12	1,391,690.34								
U11-110	NB Armor- Install	27AUG12*	120	08FEB13	67,694.76								
<b>121 -Port Extensions &amp; NB Port Covers</b>													
<b>1211 - Port Extensions</b>													
U121-200	Port extensions-Design (none)	04JUL11*	65	30SEP11	0.00								
U121-205	Port extensions-Fabricate ( 66 ports)	03OCT11	130	30MAR12	346,150.00								
U121-210	Port extensions-Install	02APR12	65	29JUN12	51,796.80								
<b>1212 - NB Ports &amp; Covers</b>													
U121-100	NB ports (3) -design	01FEB11*	40	28MAR11	40,319.20								
U121-105	NB ports (3) -fabricate	29MAR11	129	23SEP11	221,961.60								
U121-110	NB ports (3) -install	15MAR12	20	11APR12	35,316.00								
<b>133 - External Trim Coils</b>													
<b>1330 - Trim Coils</b>													
184-035	Bid & Award Ext Trim Coils	01AUG11*	45	30SEP11	5,279.76								
184-036	Award External Trim Coils	03OCT11	0	30SEP11	0.00								
184-037	External Trim Coil & Supports Procurement	03OCT11	88	01FEB12	50,718.50								
1303-040	Procure materials for supports	01AUG11	20	26AUG11	12,619.76								
1303-041	Fabricate Supports	29AUG11	20	23SEP11	7,314.64								
1303-042	Install supports onto coils	02FEB12	15	22FEB12	13,307.04								
184-015	Title III WBS 133 Rxt Trim Coils	03OCT11	88	01FEB12	29,730.36								
<b>2 - Plasma Heating, Fueling &amp; Vac Systems</b>													
<b>211 - Gas Fueling Systems</b>													
<b>2111 - 3 Gas Injectors</b>													
211-1	Design	01MAY12*	52	11JUL12	111,796.92								
211-2	Procure	12JUL12*	65	10OCT12	58,596.00								
211-3	Assy/Installation	11OCT12*	58	31DEC12	105,562.20								





Activity ID	Activity Description	Forecast Start	Forecast Duration (work days)	Forecast Finish	Budget	Forecast																
						FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17									
<b>220 - Torus Vacuum Pumping System</b>																						
<b>2202 - 2 pumps on one duct</b>																						
U122-25	Design	27FEB12*	65	25MAY12	215,202.48																	
U122-26	Procure	28MAY12*	100	12OCT12	174,246.00																	
U122-27	Assy/Installation	15OCT12*	50	21DEC12	180,140.90																	
<b>231 - Glow Discharge Cleaning System</b>																						
<b>2310 - Glow Discharge Cleaning</b>																						
U231-100	Design GDC system	13AUG12*	25	14SEP12	33,370.80																	
U231-110	Fab/Assemble GDC system	17SEP12*	20	12OCT12	111,391.20																	
U231-120	Install GDC system	15OCT12*	45	14DEC12	48,744.00																	
<b>251 - Neutral Beam #1</b>																						
<b>2505 - Beamline #1 Installation</b>																						
Refurbishment																						
25-000#1	Begin NB#1 Refurb and Installation	28JUL10*	0		0.00																	
25-090#1	Two HVST rebuilds	28JUL10	190	19APR11	58,363.79																	
25-091#1	Source filament setup/bench test	28JUL10	190	19APR11	21,531.48																	
25-092#1	high voltage power supply troubleshooting/tuning	28JUL10	190	19APR11	29,682.99																	
25-093#1	modulator wiring modifications	28JUL10	190	19APR11	14,633.68																	
25-100#1	6) Drafting Support	28JUL10	190	19APR11	146,478.58																	
25-105#1	7) Refurbish sources	28JUL10	190	19APR11	5,226.95																	
25-110#1	8) Fabricate and install new filaments	28JUL10	190	19APR11	8,145.14																	
25-115#1	9) Refurbish calorimeters as needed	28JUL10	190	19APR11	23,826.02																	
25-130#1	12) Dsn,Fan,Instl NBI vac sys INCL NEW TURBO PMP	28JUL10	190	19APR11	93,633.79																	
25-145#1	15)Upgrade/Calibr of telemetry, ptical links etc	28JUL10	190	19APR11	78,007.05																	
25-155#1	17) Fab/Instl Front Box Nitrogen Cryopanel.	28JUL10	190	19APR11	121,217.32																	
25-175#1	21) Sys Engr & Work Planning Procedures	28JUL10	190	19APR11	90,653.51																	
Re-Install Beamline																						
25-180#1	31)Work Planning Procedures	20APR11	340	07AUG12	77,856.42																	
25-185#1	32) EAD analysis of platform support capability	20APR11	340	07AUG12	3,892.82																	
25-190#1	33) Fabr BL alignment measur fixture,	20APR11	340	07AUG12	33,190.25																	
25-195#1	34) Fabr new bellows/electrical break	20APR11	340	07AUG12	21,547.75																	
25-200#1	35) Perform alignment measurements	20APR11	340	07AUG12	1,077.39																	
25-205#1	36) Prepare platform for base plate	20APR11	340	07AUG12	2,154.77																	
25-210#1	37) Relocate base plate to NCSX location	20APR11	340	07AUG12	8,619.10																	

em/em=400;em/sb=240;ee/sm=320  
ea/sb=280;ee/em=32

41=113

em/em=160;em/sb=280;ee/sm=200;em/tb=710

em/em=80;ea/sm=120

em/em=40;em/tb=120;41=\$60k

em/em=80em/tb=320

▽ =00 ;  
41=40

ee/em=40;ee/sm=80

ee/em=80;ee/sm=80

ee/tb=160

EA/SB =1,040hr ;

EM/TB =20hr ; EE/SM =20hr ;

41=02\$K ; EM/TB =20hr ;

EE/SM =20hr ;

41=02\$K ; EM/TB =80hr ;

EE/SM =80hr ;

EM/TB =56hr ; EE/SM =56hr ;

41=50\$K ; EM/EM =32hr ;

EM/TB =130hr ; EE/SM =130hr ;

EM/EM =40hr ; 41=25\$K ;

EM/TB =340hr ; EE/SM =340hr ;

EM/EM =40hr ; 41=17\$K ;

EM/EM =480hr ;

EM/EM =400hr ;

EM/EM =20hr ;

EM/TB =50hr ; EE/SM =50hr ;

EM/EM =40hr ; 41=08\$K ;

EM/TB =80hr ; EE/SM =80hr ;

EM/TB =04hr ; EE/SM =04hr ;



EM/TB =08hr ; EE/SM =08hr ;

EM/TB =32hr ; EE/SM =32hr ;



Activity ID	Activity Description	Forecast Start	Forecast Duration (work days)	Forecast Finish	Budget	FY10								FY11								FY12								FY13								FY14								FY15								FY16								FY17							
						FY10		FY11		FY12		FY13		FY14		FY15		FY16		FY17		FY10		FY11		FY12		FY13		FY14		FY15		FY16		FY17		FY10		FY11		FY12		FY13		FY14		FY15		FY16		FY17																	
<b>252 - Neutral Beam #2</b>																																																																					
<b>2507 - Beamline #2 Installation</b>																																																																					
Refurbishment																																																																					
25-000#2	Begin NB#1 Refurb and Installation	01OCT10*	0		0.00	=00 ;																																																															
25-100#2	6) Drafting Support	01OCT10*	190	23JUN11	73,840.00	EA/sm =520hr ;																																																															
25-105#2	7) Refurbish sources	01OCT10*	190	23JUN11	5,269.80	EE//SM =20hr ; EM//TB =20hr ;																																																															
25-110#2	8) Fabricate and install new filaments	01OCT10*	190	23JUN11	8,205.80	41=02\$k ; EE//SM =20hr ; EM//TB =20hr ;																																																															
25-115#2	9) Refurbish calorimeters as needed	01OCT10*	190	23JUN11	24,015.20	41=02\$k ; EE//SM =80hr ; EM//TB =80hr ;																																																															
25-130#2	12) Dsn,Fan,Instl NBI vac sys INCL NEW TURBO PMP	01OCT10*	190	23JUN11	157,372.56	EM//EM =32hr ; 41=43\$k ; EE//SM =56hr ; EM//TB =56hr ; turbo pmp=\$50k																																																															
25-145#2	15)Upgrade/Calibr of telemetry, ptical links etc	01OCT10*	190	23JUN11	78,570.10	41=25\$k ; EM//EM =40hr ; EE//SM =130hr ; EM//TB =130hr ;																																																															
25-155#2	17) Fab/Instl Front Box Nitrogen Cryopanel.	01OCT10*	190	23JUN11	122,159.00	41=17\$k ; EM//EM =40hr ; EE//SM =340hr ; EM//TB =340hr ;																																																															
25-175#2	21) Sys Engr & Work Planning Procedures	01OCT10*	190	23JUN11	45,698.40	EM//EM =240hr ;																																																															
Re-Install Beamline																																																																					
25-180#2	31)Work Planning Procedures	24JUN11*	380	06DEC12	78,616.77	EM//EM =400hr ;																																																															
25-185#2	32) EAD analysis of platform support capability	24JUN11*	380	06DEC12	0.00	EM//EM =0 hr ;																																																															
25-190#2	33) Fabr BL alignment measur fixture,	24JUN11*	380	06DEC12	33,483.37	41=08\$k ; EM//EM =40hr ; EE//SM =50hr ; EM//TB =50hr ;																																																															
25-195#2	34) Fabr new bellows/electrical break	24JUN11*	380	06DEC12	21,758.14	EE//SM =80hr ; EM//TB =80hr ;																																																															
25-200#2	35) Perform alignment measurements	24JUN11*	380	06DEC12	1,087.90	EE//SM =04hr ; EM//TB =04hr ;																																																															
25-205#2	36) Prepare platform for base plate	24JUN11*	380	06DEC12	2,175.82	EE//SM =08hr ; EM//TB =08hr ;																																																															
25-210#2	37) Relocate base plate to NCSX location	24JUN11*	380	06DEC12	8,703.26	EE//SM =32hr ; EM//TB =32hr ;																																																															
25-215#2	38) Lift NB from Refurb location to NCSX locatio	24JUN11*	380	06DEC12	33,725.12	EE//SM =124hr ; EM//TB =124hr ;																																																															
25-220#2	39) Enclose platform around base plate	24JUN11*	380	06DEC12	4,351.62	EE//SM =16hr ; EM//TB =16hr ;																																																															
Re-Install Cables																																																																					
25-225#2	Cabling-Design & WP Procedures	24JUN11*	380	06DEC12	31,446.71	EM//EM =160hr ;																																																															
25-230#2	Cabling-Fabr and Install new Junction Box	24JUN11*	380	06DEC12	21,758.14	EE//SM =80hr ; EM//TB =80hr ;																																																															
25-235#2	Cabling-Hi-potting cable run and fixing problems	24JUN11*	380	06DEC12	10,879.08	EE//SM =40hr ; EM//TB =40hr ;																																																															
25-240#2	Cabling-Install Cable Trays	24JUN11*	380	06DEC12	43,516.28	EE//SM =160hr ; EM//TB =160hr ;																																																															
25-245#2	Cabling-Pull cables Arc Room to PVC Junction Box	24JUN11*	380	06DEC12	96,049.73	41=06\$k ; EE//SM =320hr ; EM//TB =320hr ;																																																															
25-250#2	Cabling- M&S f/ trays, fixtures, materials	24JUN11*	380	06DEC12	39,074.31	41=26\$k ;																																																															
Beamline Connections																																																																					
25-255#2	Install weld cables Juncton Box to Ion Source.	24JUN11*	380	06DEC12	11,780.79	41=01\$k ; EE//SM =40hr ; EM//TB =40hr ;																																																															
25-260#2	Connect bBL to foreline and exhaust manifold.	24JUN11*	380	06DEC12	5,253.33	41=01\$k ; EE//SM =16hr ; EM//TB =16hr ;																																																															
25-265#2	New PLC. Test system after installation.	24JUN11*	380	06DEC12	4,351.62	EE//SM =16hr ; EM//TB =16hr ;																																																															
25-270#2	Connect BL to new manifold & test	24JUN11*	380	06DEC12	4,351.62	EE//SM =16hr ; EM//TB =16hr ;																																																															
25-275#2	Connect beamline to new manifold & test.	24JUN11*	380	06DEC12	4,351.62	EE//SM =16hr ; EM//TB =16hr ;																																																															

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 Forecast  
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**NCSX Program  
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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							
25-280#2	Connect beamline to new manifold and test	24JUN11*	380	06DEC12	2,175.82																																																																
25-285#2	Install Water System	24JUN11*	380	06DEC12	35,793.22																																																																
25-290#2	Fab & Install Water Cooled Aperture	24JUN11*	380	06DEC12	24,283.75																																																																
25-295#2	New PLC for water sys & test	24JUN11*	380	06DEC12	2,175.82																																																																
25-300#2	Diag Sys-Fab/install new cables	24JUN11*	380	06DEC12	2,175.82																																																																
25-310#2	Drafting Labor Support	24JUN11*	380	06DEC12	70,354.08																																																																
<b>2508 - Beamline #2 Commissioning</b>																																																																					
Refurbishment																																																																					
25-119C#2	Begin Commissioning BL#2	07DEC12*	0		0.00																																																																
25-120C#2	10) Maint& repair of cryogenic transfer system.	07DEC12*	95	18APR13	13,704.76																																																																
25-125C#2	11) Fill LN2 supply tank.	07DEC12*	95	18APR13	1,619.10																																																																
25-135C#2	13) Water system maintenance and calibration	07DEC12*	95	18APR13	12,887.50																																																																
25-140C#2	14) Maint/calibration of auxiliary power supplie	07DEC12*	95	18APR13	7,253.30																																																																
25-150C#2	16) New PLC ,Test & Calibrate	07DEC12*	95	18APR13	215,475.92																																																																
25-160C#2	18) Subsystem integrated testing	07DEC12*	95	18APR13	33,805.20																																																																
25-165C#2	19) NBI Computer Systems:	07DEC12*	95	18APR13	69,209.16																																																																
25-170C#2	20) NBI Computer SystemsTune, debug	07DEC12*	95	18APR13	48,859.20																																																																
Beamline Connections																																																																					
25-305C#2	Neutral Beam Integrated Systems Testing	19APR13*	20	16MAY13	45,073.60																																																																
<b>254 - Neutral Beam #3 &amp; 4</b>																																																																					
<b>Job: 2591 - 3rd and 4th Beamline-STEVENSON</b>																																																																					
Refurbishment																																																																					
NB34-001	Begin NB#1 Refurb and Installation	01OCT13*	0		0.00																																																																
NB34-002	Procure 2 new power supplies	04FEB13*	160	13SEP13	1,951,500.00																																																																
NB34-004	6) Drafting Support	01OCT13	130	31MAR14	326,518.40																																																																
NB34-005	7) Refurbish sources	01OCT13	130	31MAR14	11,651.60																																																																
NB34-007	8) Fabricate and install new filaments	01OCT13	130	31MAR14	17,975.60																																																																
NB34-010	9) Refurbish calorimeters as needed	01OCT13	130	31MAR14	52,930.40																																																																
NB34-013	12) Dsn,Fan,Instl NBI vac sys INCL NEW TURBO PMP	01OCT13	130	31MAR14	204,196.48																																																																
NB34-018	15)Upgrade/Calibr of telemetry, ptical links etc	01OCT13	130	31MAR14	171,625.40																																																																
NB34-022	17) Fab/Instl Front Box Nitrogen Cryopanel.	01OCT13	130	31MAR14	268,671.20																																																																
NB34-026	21) Sys Engr & Work Planning Procedures	01OCT13	130	31MAR14	202,080.00																																																																
Re-Install Beamline																																																																					
NB34-027	31)Work Planning Procedures	01APR14	130	29SEP14	168,400.00																																																																
NB34-028	32) EAD analysis of platform support capability	01APR14	130	29SEP14	8,420.00																																																																

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**NCSX Program  
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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				
NB34-029	33) Fabr BL alignment measur fixture,	01APR14	130	29SEP14	71,265.00												
NB34-033	34) Fabr new bellows/electrical break	01APR14	130	29SEP14	46,606.40												
NB34-035	35) Perform alignment measurements	01APR14	130	29SEP14	2,330.32												
NB34-037	36) Prepare platform for base plate	01APR14	130	29SEP14	4,660.64												
NB34-039	37) Relocate base plate to NCSX location	01APR14	130	29SEP14	18,642.56												
NB34-041	38) Lift NB from Refurb location to NCSX locatio	01APR14	130	29SEP14	72,239.92												
NB34-043	39) Enclose platform around base plate	01APR14	130	29SEP14	9,321.28												
<b>Re-Install Cables</b>																	
NB34-045	Cabling-Design & WP Procedures	01APR14	130	29SEP14	67,360.00												
NB34-046	Cabling-Fabr and Install new Junction Box	01APR14	130	29SEP14	46,606.40												
NB34-048	Cabling-Hi-potting cable run and fixing problems	01APR14	130	29SEP14	23,303.20												
NB34-050	Cabling-Install Cable Trays	01APR14	130	29SEP14	93,212.80												
NB34-052	Cabling-Pull cables Arc Room to PVC Junction Box	01APR14	130	29SEP14	205,397.60												
NB34-055	Cabling- M&S f/ trays, fixtures, materials	01APR14	130	29SEP14	82,212.00												
<b>Beamline Connections</b>																	
NB34-056	Install weld cables Junction Box to Ion Source.	01APR14	130	29SEP14	25,200.40												
NB34-059	Connect BL to foreline and exhaust manifold.	01APR14	130	29SEP14	11,218.48												
NB34-062	New PLC. Test system after installation.	01APR14	130	29SEP14	9,321.28												
NB34-064	Connect BL to new manifold & test	01APR14	130	29SEP14	9,321.28												
NB34-066	Connect beamline to new manifold & test.	01APR14	130	29SEP14	9,321.28												
NB34-068	Connect beamline to new manifold and test	01APR14	130	29SEP14	4,660.64												
NB34-070	Install Water System	01APR14	130	29SEP14	76,549.80												
NB34-073	Fab & Install Water Cooled Aperture	01APR14	130	29SEP14	51,713.40												
NB34-076	New PLC for water sys & test	01APR14	130	29SEP14	4,660.64												
NB34-078	Diag Sys-Fab/install new cables	01APR14	130	29SEP14	4,660.64												
NB34-080	Drafting Labor Support	01APR14	130	29SEP14	150,700.80												
<b>Commissioning</b>																	
NB34-081	Begin Commissioning BL#1	30SEP14	0		0.00												
NB34-084	10) Maint& repair of cryogenic transfer system.	30SEP14	65	29DEC14	29,201.11												
NB34-087	11) Fill LN2 supply tank.	30SEP14	65	29DEC14	3,400.74												
NB34-088	13) Water system maintenance and calibration	30SEP14	65	29DEC14	27,484.55												
NB34-091	14) Maint/calibration of auxiliary power supplie	30SEP14	65	29DEC14	15,442.64												
NB34-094	16) New PLC ,Test & Calibrate	30SEP14	65	29DEC14	457,905.24												
NB34-097	18) Subsystem integrated testing	30SEP14	65	29DEC14	72,251.41												



Activity ID	Activity Description	Forecast Start	Forecast Duration (work days)	Forecast Finish	Budget														
						FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17						
<b>431 - C-Site DC Systems</b>																			
<b>C-Site DC Systems</b>																			
U431-1	431 - C-site DC Systems-DSN/PROCURE	30JAN12*	125	20JUL12	229,315.48														
U431-2	431 - C-site DC Systems-Installation	23JUL12	119	03JAN13	983,498.22														
U432-X	2 additional D-site circuits	23JUL12	119	03JAN13	419,835.85														
<b>432 - D-to-C Site DC Systems</b>																			
<b>D to C Site DC Systems</b>																			
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	185	16DEC11	2,599,365.60														
U432-3	432 - D-to-C-Site DC Systems-Commissioning	19DEC11	65	16MAR12	95,647.73														
<b>433 - D-Site DC Systems</b>																			
<b>D Site DC Systems</b>																			
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	368,697.93														
U433-2A	Additional 2 power supplies for 2 trim coils	03OCT11*	190	22JUN12	406,350.00														
U433-3	433 - D-site DC Systems-Commissioning	25JUN12	65	21SEP12	58,844.74														
<b>441 - Electrical Interlocks</b>																			
<b>Electrical Interlocks</b>																			
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														
<b>442 - Kirk Key Interlocks</b>																			
<b>Kirk Key Interlocks</b>																			
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														
<b>443 - Real Time Control Systems</b>																			
<b>Real Time Control Systems</b>																			
U443-1	443 - Real Time Control-DSN/PROCURE	03OCT11*	125	23MAR12	42,063.12														

Activity ID	Activity Description	Forecast Start	Forecast Duration (work days)	Forecast Finish	Budget									
						FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	
<b>444 - Instrument Systems</b>														
<b>Instrument Systems</b>														
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									
<b>445 - Coil protection Systems</b>														
<b>Coil Protection Systems</b>														
U445-1	445 - Coil Protection-DSN/PROCURE	03OCT11*	125	23MAR12	250,923.52									
U445-2	445 - Coil Protection-Installation	26MAR12	156	29OCT12	139,763.04									
U445-3	445 - Coil Protection-Commissioning	30OCT12	25	03DEC12	57,441.46									
<b>446 - Ground Fault Monitoring System</b>														
<b>Ground Fault Monitoring System</b>														
U446-1	446 - Ground Fault Monitor-DSN/PROCURE	03OCT11*	125	23MAR12	217,168.71									
U446-2	446 - Ground Fault Monitor-Installation	26MAR12	159	01NOV12	119,379.23									
U446-3	446 - Ground Fault Monitor-Commissioning	02NOV12	10	15NOV12	6,580.73									
<b>451 - System Design and Interfaces</b>														
<b>Sys design and interfaces</b>														
U451-1	451 - System Design-	03OCT11*	335	11JAN13	344,196.55									
<b>452 - Electrical Systems Support</b>														
<b>Electrical Systems support</b>														
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									
<b>453 - System Testing (PTP's)</b>														
<b>Systems Testing PTP's</b>														
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									

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 ;

EA/SM =799 ; EE/EM =1,056hr ;

41=70\$K ; EE/EM =231hr ;  
 EA/SM =1,188 ;  
 41=120\$K ; EE/EM =165hr ;  
 EE/SM =198hr ; EE/TB =1,188hr ;  
 EE/EM =66hr ; EE/SM =132hr ;  
 EE/TB =990hr ;

41=25\$K ; EA/SM =132 ;  
 EE/EM =264hr ;  
 EE/SM =66hr ; EE/EM =251hr ;  
 EE/TB =323hr ;



Activity ID	Activity Description	Forecast Start	Forecast Duration (work days)	Forecast Finish	Budget									
						FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	
<b>460 - FCPC Mods</b>														
<b>FCPC Bldg Mods</b>														
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									
<b>5 - Central I&amp;C Systems</b>														
<b>510 - TCP/IP Infrastructure Systems</b>														
<b>Job: 5101 - TCP/IP Infrastructure Systems</b>														
5100		02JAN12*	274	17JAN13	206,433.03									
<b>520 - Central Instrumentation &amp; Control Systems</b>														
<b>5201 - I&amp;C Systems</b>														
5200		02JAN12*	274	17JAN13	318,475.14									
<b>530 - Data Acquisition &amp; Facility Computing Sys</b>														
<b>5301 - Data Acquisition</b>														
5300		05OCT12*	75	17JAN13	131,645.76									
<b>540 - Facility Timing and synchronization System</b>														
<b>Job: 5401 - Facility Timing &amp; Synchronization</b>														
5400		02JAN12*	274	17JAN13	244,093.46									
<b>550 - Real Time Plasma &amp; Power Supply Control</b>														
<b>5501 - Real Time Control System</b>														
5500		21MAY12*	173	16JAN13	501,701.23									
<b>560 - Central Safety Interlock Systems</b>														
<b>Job: 5601 - Central Safety Interlock Systems</b>														
5600		02JAN12*	274	17JAN13	222,001.80									
<b>570 - Control Room Facility</b>														
<b>Job: 5701 - Control Room Facility</b>														
5700		01OCT12*	68	02JAN13	301,062.36									

41=09\$K ; EE/EM =73hr ;  
EA/SM =79 ;  
41=04\$K ; EE/EM =46hr ;  
EE/SM =59hr ; EE/TB =482hr ;

ec/em=92;ec/tb=184;em/tb=360  
ea/sb=80;ee/tb=40;41=80

ec/em=904;ec/tb=288;em/tb=240  
ea/sb=200;ee/tb =40;41=44

ec/em=488; 41=25

ec/em=172;ec/tb=224;em/tb=440;ea/sb=80  
ee/em=120;ee/tb=440;41=45

ec/em=856;ec/tb=96;em/tb=160  
ea/sb=80;ee/em=408;ee/tb=164;41=132

ec/em=548;em/tb=480;ea/sb=120;41=36

ec/tb=24;em/tb=116;ea/sb=24;41=165

Activity ID	Activity Description	Forecast Start	Forecast Duration (work days)	Forecast Finish	Budget																	
						FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17									
<b>6 - Facility Systems</b>																						
<b>612 - NB Water Cooling Systems</b>																						
<b>NB Cooling Water</b>																						
612	Design/Install-NB water sys	16JUL12*	127	08JAN13	364,743.08																	
<b>613 - Vacuum Pumping System</b>																						
<b>Vacuum Pumping Cooling Water</b>																						
613	Design/Install-Vac pmp sys water	01OCT12*	85	25JAN13	97,428.55																	
<b>615 - Diagnostic Water Cooling System</b>																						
<b>Diag Cooling Water</b>																						
615	Design/Install-Diag cooling water	01OCT12*	125	22MAR13	42,640.06																	

41=86.51;em/em=476;em/tb=1013;ea/sb=240

41=2.97;em/em=168;em/tb=207;ea/sb=248

41=\$2.11k;em/em=80;em/tb=108;ea/sm=80