

NSTX UPGRADE CD-2 COST ESTIMATE		P3 file: CD2B		Outage Start= 4/1/2012		Early Finish= 9/30/2014		Risk		OUTAGE					
DESCRIPTION	CD-2 TOTAL	FY 2009 Actual Cost	FY 2010 Actual Cost	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	Gross \$	Weighted \$	Bottoms-up contin- gency\$	total cont	TOTAL TPC	cont % on etc from 10/1/2010	
Job: 1000 - CSU Analytical Support-TITUS	\$387		64.7	147.2	58.7	58.4	57.7		80	\$26	103	\$129	\$516	40%	
Job: 1001 - CS Plasma Facing Components-TRESEMER	\$2,175	64.6	288.2	461.6	627.6	657.6	75.2		421	\$126	410	\$536	\$2,711	29%	
Job: 1002 -Passive Plate Analysis &Upgrade-TITUS	\$253		169.9	83.2					20	\$12	17	\$29	\$282	34%	
Job: 1200 - Vacuum Vsl & Struct Support-SMITH	\$1,509	571.7	937.6						60	\$15		\$15	\$1,524		
Job: 1201 - Outer TF Structures-SMITH	\$704		19.6	125	56.2	502.7			-	\$0	160	\$160	\$863	23%	
Job: 1202 - Outer PF2 Coil Structures-SMITH	\$41		0.4	19.3	2.4	18.6			-	\$0	9	\$9	\$50	22%	
Job: 1203 - PF3 Support-SMITH	\$22		0.2	10.9	10.5				-	\$0	5	\$5	\$27	24%	
Job: 1204 - PF4/5 Leads & Radial Supports-SMITH	\$11		2.5	8.1					-	\$0	2	\$2	\$13	29%	
Job: 1205 - Umbrella-SMITH	\$630		25.4	170.3	7.7	426.2	0.3		-	\$0	78	\$78	\$707	13%	
Job: 1206 - Pedestal -SMITH	\$139		4.9	40.8		74.9	18.6		-	\$0	35	\$35	\$175	26%	
Job: 1207 - Vessel Legs -SMITH	\$17		2.7	5.6		8.7			-	\$0	3	\$3	\$20	21%	
Job: 1208 - PF4&5 Verticle Support-SMITH	\$256		21.7	97.5	8.7	128			-	\$0	64	\$64	\$320	27%	
Job: 1220 - Misc Structural Design-SMITH	\$196		40.3	155.8					-	\$0	68	\$68	\$264	43%	
Job: 1300 - Center Stack-CHRZANOWSKI	\$1,065		132.6	299.7	266.5	265.4	100.6		-	\$0	90	\$90	\$1,155	10%	
Job: 1301 - Outer TF Coils-CHRZANOWSKI	\$338		19.9		19.6	241.1	57.3		100	\$25	81	\$106	\$444	33%	
Job: 1303 - TF Joint Test Stand&Test-KOZUB	\$353		79.6	273.5					130	\$27	55	\$82	\$435	30%	
Job: 1304 - Inner TF Bundle (Ds/Fab)-CHRZANOWSKI	\$2,596		328.2	869	461.2	578.1	359.3		430	\$108	701	\$809	\$3,405	36%	
Job: 1305 - OHMIC Heating Coil (OH)-CHRZANOWSKI	\$4,557	1055.6	313.4	406.6	1284.7	1496.6			1,725	\$431	1107	\$1,538	\$6,095	48%	
Job: 1306 - Inner PF Coils-CHRZANOWSKI	\$668		99.5	75	312.1	181.4			100	\$25	140	\$165	\$833	29%	
Job: 1307 - CS Casing Assembly -CHRZANOWSKI	\$903		93.7	72.9	262	451.7	23.1		-	\$0	231	\$231	\$1,134	29%	
Job: 1310 - CSU Magnet Systems-CHRZANOWSKI	\$442		441.9						-	\$0		\$0	\$442		
Job: 1302 - Center Stack Assembly-CHRZANOWSKI	\$990				27.4	181.4	781.2		-	\$0	276	\$276	\$1,266	28%	
Job: 2300 - ECH Analysis-TITUS	\$84		26.6	57.8					125	\$48	12	\$60	\$144	103%	
Job: 2420 - 2nd NBI Sources-CROPPER	\$1,094			3.7		220.7	869.3		-	\$0	175	\$175	\$1,269	16%	
Job: 2425 - BL Relocation-DENAULT	\$1,859	15	28.3	57.7		1062.3	696		-	\$0	257	\$257	\$2,116	14%	
Job: 2430 - 2nd NBI Decontamination-STEVENSON	\$2,057	1238.5	800.5	18					-	\$0	3	\$3	\$2,060	15%	
Job: 2440 - 2nd NBI Beamline-DENAULT	\$2,588	28.6	12	494.6	769.6	1225.3	57.6		-	\$0	364	\$364	\$2,952	14%	
Job: 2450 - 2nd NBI Services-DENAULT	\$4,516	76.7	189.3	86.2	119.4	1169.4	2875.2		-	\$0	986	\$986	\$5,502	23%	
Job: 2460 - 2nd NBI Armor-PRINISKI	\$700	35.8	236.4	119.3		62.4	245.7		-	\$0	104	\$104	\$803	24%	
Job: 2470 - 2nd NBI Power-RAKI	\$3,335	115.2	98.6	39	87.8	1110.5	1883.6		-	\$0	557	\$557	\$3,892	18%	
Job: 2475 - 2nd NBI Controls-CROPPER	\$2,089		8.2	240.6	572.8	740.9	526.7		-	\$0	253	\$253	\$2,342	12%	
Job: 2480 - 2nd NBI/TVPS Duct	\$2,258	183.4	171.2	103.8	116.8	1313.3	369.9		-	\$0	480	\$480	\$2,739	25%	
Job: 2485 - Vacuum Pumping System-PRINISKI	\$387		42.7	47.3			297.4		-	\$0	54	\$54	\$442	16%	
Job: 2490 - NTC Equipmt Relocations-PERRY	\$3,618	143	135.2	2.8	916.2	792.4	1628.3		294	\$74	501	\$575	\$4,193	17%	
Job: 3200 - Water Cooling System Mods-DENAULT	\$195	5.4	10.2	58.5			121.1		-	\$0	18	\$18	\$213	10%	
Job: 3300 - Bakeout System Mods for CSU-RAKI	\$79			4.8			74.4		-	\$0	16	\$16	\$95	20%	
Job: 3400 - Gas Delivery System Mods-BLANCHARD	\$102		2.7	38.3			61.3		10	\$1	21	\$22	\$124	22%	
Job: 4100 - Center Stack Diagnostics-KAITA	\$836	11	80.7	91.4	213.6	439			-	\$0	126	\$126	\$962	17%	
Job: 4500 - MPTS VV Modification	\$942		125.1	510	245.8	57.4	4				268	\$268	\$1,210	33%	
Job: 5000 - CSU Power Systems-RAKI	\$1,103	385.8	717.3							\$0		\$0	\$1,103		
Job: 5001 - AC Power-RAKI	\$193			11.5		61.6	120.1				19	\$19	\$213	10%	
Job: 5002 - AC/DC Converters-RAKI	\$58					18	39.8				6	\$6	\$64	10%	
Job: 5003 - FCPC PF5 DC Systems-RAKI	\$0											\$0	\$0		
Job: 5004 - TA-NTC DC Systems-RAKI	\$114			7.5		33.7	72.6				28	\$28	\$142	25%	
Job: 5005 - FCPC DC PF1 & TF Systems-RAKI	\$1,690			31.2	297.4	252.4	1108.9				398	\$398	\$2,088	24%	
Job: 5006 - Control & Protection-RAKI	\$1,896			95.5	209.3	666.7	924.2				308	\$308	\$2,203	16%	
Job: 5007 - Systems Design & Integration-RAKI	\$681		36.2	166.1	94.3	93.9	290.3				64	\$64	\$745	10%	
Job: 5200 - Digital Coil Protection-HATCHER	\$2,493		83.4	363.2	437.2	664.7	944.3				997	\$997	\$3,490	41%	
Job: 5501 - Coil Bus Runs-SMITH	\$1,129		185	192.8		123.5	627.5		-	\$0	277	\$277	\$1,406	29%	
Job: 6100 - Control Sys Data Acquisition -SICHTA	\$918		40.7	127.7	6.9	33	709.7		375	\$89	88	\$177	\$1,095	20%	
Job: 7100 - Project Mgt & Integration-STRYKOWSKY	\$5,812	625.8	781.1	841.6	1009.7	1258.9	1294.8		150	\$37	440	\$477	\$6,289	11%	
Job: 7200 - Center Stack Management-DUDEK	\$1,540		222.2	320.5	335.1	325.5	336.2		107	\$27	171	\$198	\$1,738	15%	
Job: 7300 - NB2 Management-STEVENSON	\$1,450	63.3	137	269.6	295.7	425.6	258.8		75	\$19	162	\$181	\$1,631	14%	
Job: 7400 - Health Physics Support-STEVENSON	\$2,507		386.5	511.4	835.3	504.1	269.9		35	\$21	276	\$297	\$2,804	14%	
JOB: 7700 - NSTX-U HP Allocations-STRYKOWSKY	\$2,603	367.3	452.4	353.1	535	481.5	414		130	\$78	178	\$256	\$2,859	14%	
Job: 7710 - Upgrade Allocations-STRYKOWSKY	\$381	159	183.6	29.7	3.5	3.6	1.8		86	\$51	4	\$55	\$436	143%	
Job: 8200 - CS & Coil Sprt Struc Install- VIOLA	\$6,474		38.6	46.5	1452.2	1958	2978.5		1,120	\$786	1464	\$2,250	\$8,724	35%	
Job: 8250 - Remove/Install Centerstack-PERRY	\$1,174					366.2	807.4		287	\$61	176	\$237	\$1,411	20%	
Job: 7900 - Integrated System-GENTILE	\$78		4	1.8	1.8	1.8	68.9			\$0	19	\$19	\$97	25%	
schedule (months)			(OT and 2nd shift available to maintain schedule and supplement sched conting					8.0	months			\$1,999	\$1,999	\$1,999	
Base Estimate(early schedule)=	\$77,283	\$5,146	\$8,323	\$8,666	\$11,961	\$20,737	\$22,452	\$0	5,860	\$2,087	\$14,905	\$16,992	\$94,276		
Contingency % =				11%	22%	22%	23%								
Contingency	\$16,992		\$912	\$2,669	\$4,543	\$5,089	\$3,779		Contingency % of ETC =		27%				
Total =	\$94,276	\$5,146	\$8,323	\$9,578	\$14,630	\$25,280	\$27,540	\$3,779							
Guidance =			\$9,578	\$14,630	\$25,280	\$27,540	\$6,970								

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DESCRIPTION	FY 2011 (\$K)
Job: 1000 - CSU Analytical Support-TITUS	\$147
Job: 1001 - CS Plasma Facing Components-TRESEMER	\$462
Job: 1002 -Passive Plate Analysis &Upgrade-TITUS	\$83
Job: 1200 - Vacuum Vsl & Struct Support-SMITH	
Job: 1201 - Outer TF Structures-SMITH	\$125
Job: 1202 - Outer PF2 Coil Structures-SMITH	\$19
Job: 1203 - PF3 Support.-SMITH	\$11
Job: 1204 - PF4/5 Leads & Radial Supports-SMITH	\$8
Job: 1205 - Umbrella-SMITH	\$170
Job: 1206 - Pedestal -SMITH	\$41
Job: 1207 - Vessel Legs -SMITH	\$6
Job: 1208 - PF4&5 Verticle Support-SMITH	\$98
Job: 1220 - Misc Structural Design-SMITH	\$156
Job: 1300 - Center Stack-CHRZANOWSKI	\$300
Job: 1301 - Outer TF Coils-CHRZANOWSKI	
Job: 1303 - TF Joint Test Stand&Test-KOZUB	\$274
Job: 1304 - Inner TF Bundle (Ds/Fab)-CHRZANOWSKI	\$869
Job: 1305 - OHMIC Heating Coil (OH)-CHRZANOWSKI	\$407
Job: 1306 - Inner PF Coils-CHRZANOWSKI	\$75
Job: 1307 - CS Casing Assembly -CHRZANOWSKI	\$73
Job: 1310 - CSU Magnet Systems-CHRZANOWSKI	
Job: 1302 - Center Stack Assembly-CHRZANOWSKI	
Job: 2300 - ECH Analysis-TITUS	\$58
Job: 2420 - 2nd NBI Sources-CROPPER	\$4
Job: 2425 - BL Relocation-DENAULT	\$58
Job: 2430 - 2nd NBI Decontamination-STEVENSON	\$18
Job: 2440 - 2nd NBI Beamline-DENAULT	\$495
Job: 2450 - 2nd NBI Services-DENAULT	\$86
Job: 2460 - 2nd NBI Armor-PRINISKI	\$119
Job: 2470 - 2nd NBI Power-RAKI	\$39
Job: 2475 - 2nd NBI Controls-CROPPER	\$241
Job: 2480 - 2nd NBI/TVPS Duct	\$104
Job: 2485 - Vacuum Pumping System-PRINISKI	\$47
Job: 2490 - NTC Equipt Relocations-PERRY	\$3
Job: 3200 - Water Cooling System Mods-DENAULT	\$59
Job: 3300 - Bakeout System Mods for CSU-RAKI	\$5
Job: 3400 - Gas Delivery System Mods-BLANCHARD	\$38
Job: 4100 - Center Stack Diagnostics-KAITA	\$91
Job: 4500 - MPTS VV Modification	\$510
Job: 5000 - CSU Power Systems-RAKI	
Job: 5001 - AC Power-RAKI	\$12
Job: 5002 - AC/DC Converters-RAKI	
Job: 5003 - FCPC PF5 DC Systems-RAKI	
Job: 5004 - TA-NTC DC Systems-RAKI	\$8
Job: 5005 - FCPC DC PF1 & TF Systems-RAKI	\$31
Job: 5006 - Control & Protection-RAKI	\$96
Job: 5007 - Systems Design & Integration-RAKI	\$166
Job: 5200 - Digital Coil Protection-HATCHER	\$363
Job: 5501 - Coil Bus Runs-SMITH	\$193
Job: 6100 - Control Sys Data Acquisition -SICHTA	\$128
Job: 7100 - Project Mgt & Integration-STRYKOWSKY	\$842
Job: 7200 - Center Stack Management-DUDEK	\$321
Job: 7300 - NB2 Management-STEVENSON	\$270
Job: 7400 - Health Physics Support-STEVENSON	\$511
JOB: 7700 - NSTX-U HP Allocations-STRYKOWSKY	\$353
Job: 7710 - Upgrade Allocations-STRYKOWSKY	\$30
Job: 8200 - CS & Coil Sprt Struc Install- VIOLA	\$47
Job: 8250 - Remove/Install Centerstack-PERRY	
Job: 7900 - Integrated System-GENTILE	\$2
Base Estimate(early schedule)=	\$8,666