

	ECP 4	ECP 5	change
NCSX			
<u>ECP5 Summary</u>			
WBS 12 -Design & Analysis			256
FY03 Misc Actual vs Estimate Cost			180
FY04 Misc Re-Estimates			167
WBS 12 -R&D			164
WBS 81-Project management oversight			81
WBS 14 -Winding Materials			54
WBS 18-Instl He piping for FP assy			47
WBS 81 -PDR Outside reviewers			41
WBS 14 -R&D			-96
WBS 14 -Fixtures & Winding HW			<u>-284</u>
			610

NCSX								
ecp4 ecp5 reconciliation			ECP 4	ECP 5	change	Description (applies to WBS level II)		WBS II
11 - 11 - In-Vessel Components	111 - Limiters		8	0.1	-7.9	FY03 actual vs estimate	-7.9	-7.9
12 - 12 - Vacuum Vessel Systems	121 - Vacuum Vessel Assembly		5378	5929	551	Fy03 vv design actual cost vs estimate	59.0	503.0
12 - 12 - Vacuum Vessel Systems	122 - Vacuum Vessel Thermal Insulation		193	174.9	-18.1	FY03 vv R&D oversight c vs e	25.0	
12 - 12 - Vacuum Vessel Systems	123 - Vacuum Vessel Heating and Cooling		387		-11.2	vsl weld joint R&D increase	80.4	
	Distrib			375.8				
12 - 12 - Vacuum Vessel Systems	124 - Vacuum Vessel Supports		82	62.6	-19.4	FY04 vv R&D oversight increase	83.1	
12 - 12 - Vacuum Vessel Systems	125 - Vacuum Vessel Local I&C		26	26.7	0.7	VVSA final design analyses/design	256.0	
13 - 13 - Conventional Coils	130 - Conventional Coils Design		304	407.1	103.1	Misc. escalation	-10.0	-9.7
13 - 13 - Conventional Coils	131 - TF Coils		1529	1546.3	17.3			
13 - 13 - Conventional Coils	132 - PF Coils		1800	1747.4	-52.6			
13 - 13 - Conventional Coils	133 - External Trim Coils		438	372	-66			
13 - 13 - Conventional Coils	134 - Conventional Coil Local		97	85.5	-11.5			
14 - 14 - Modular Coils	141 - Modular Coil Winding Form		9064	9171.9	107.9	2nd winding line	-85.0	-288.1
14 - 14 - Modular Coils	142 - Modular Coil Windings and Assembly		8784	8683.4	-100.6	winding fixtures & autoclave	-158.0	
14 - 14 - Modular Coils	143 - Modular Coil Local I&C		121	121.2	0.2	fixtures & autoclave oversight	-41.0	
14 - 14 - Modular Coils	144 - Modular Coil Winding Facility &		2579	2283.4	-295.6	add'l materials & supplies for windings	54.0	
						Misc waf re-estimates	38.0	
						MCWF prototype EIO	-65.0	
						Prototype winding oversight	-31.0	
15 - 15 - Structures			1450	1435.9	-14.1	FY04 bottoms up waf estimate	-14.1	-14.1
16 - 16 - Coil Services	161 - LN2 Distribution		338	337.5	-0.5		-0.1	-0.1
16 - 16 - Coil Services	162 - Electrical Leads		621	621.3	0.3			
16 - 16 - Coil Services	163 - Coil Protection System		78	78.1	0.1			
17 - 17 - Cryostat and Base Support Structure	171 -Cryostat		864	858.5	-5.5	FY03 actual vs estimate	-8.3	-8.3
17 - 17 - Cryostat and Base Support Structure	172 - Base Support Structure		441	438.2	-2.8			
18 - 18 - Field Period Assembly	181 - Field Period Assembly		1371	1379.3	8.3	bottomsup waf reestimate	27.0	100.5
	Planning/Oversight							
18 - 18 - Field Period Assembly	182 - TFTR Test Cell Area preparations		93	92.9	-0.1			
18 - 18 - Field Period Assembly	183 - Receive Inspect and Test Coils		77	77.4	0.4			
18 - 18 - Field Period Assembly	184 - Receive Inspect and Test VV		326	326.3	0.3			
18 - 18 - Field Period Assembly	185 - Assemble Field Periods		1357	1357.3	0.3			
18 - 18 - Field Period Assembly	186 - Tooling Design and Fabrication		1338	1388.5	50.5	install He piping from NSTX to TFTR TC	47.0	
18 - 18 - Field Period Assembly	187 - Measurement Systems		548	588.8	40.8	increased M&S	26.0	
19 - 19 - Stellarator Core Management and Integration	191 - Stellarator Core Management & Oversight		1083	1083	0	Note +\$221k increase in FY04 waf's taken out		1.6
19 - 19 - Stellarator Core Management and Integration	192 - Stellarator Core Integration & Analysis		1580	1581.6	1.6	of future years.		
21 - 21 - Fueling Systems			140	140	0		0.2	0.2
22 - 22 - Torus Vacuum Pumping Systems			384	384.2	0.2			
25 - 25 - Neutral Beam Injection System			1103	1169.1	66.1	Fy03 c vs est +38;Power sys testing+16Control dev M&S \$12	66.0	66.1
31 - 31 - Magnetic Diagnostics			454	454.1	0.1		0.1	11.7
36 - 36 - Edge and Divertor Diagnostics			99	99.3	0.3		0.3	
38 - 38 - Electron Beam (EB) Mapping			292	292.1	0.1		0.1	
39 - 39 - Diagnostics Integration			836	847.2	11.2	FY03 actual vs estimate	11.2	
41 - 41 - AC Power	411 - Auxiliary AC Power Systems		568	569.3	1.3			12.9
41 - 41 - AC Power	412 - Experimental AC Power Systems		43	42.8	-0.2	misc escalation	12.9	
42 - 42 - AC/DC Converters			24	23.5	-0.5			
43 - 43 - DC Systems	431 - C-Site DC Systems		333	326.7	-6.3			
43 - 43 - DC Systems	432 - D-to-C Site DC Systems		1324	1328.7	4.7			
43 - 43 - DC Systems	433 - D-Site DC Systems		491	487.9	-3.1			
44 - 44 - Control and protection Systems	441 - Electrical Interlocks		575	578.6	3.6			
44 - 44 - Control and protection Systems	442 - Kirk Key Interlocks		98	98	0			

ecp4 ecp5 reconciliation		ECP 4	ECP 5	change	Description (applies to WBS level II)		WBS II
44 - 44 - Control and protection Systems	443 - Real Time Control Systems	38	38.4	0.4			
44 - 44 - Control and protection Systems	444 - Instrument Systems	433	433.2	0.2			
44 - 44 - Control and protection Systems	445 - Coil protection Systems	281	283.4	2.4			
44 - 44 - Control and protection Systems	446 - Ground Fault Monitoring	167	167	0			
45 - 45 - Power System Design and Integration	451 - System Design and Interfaces	579	591.4	12.4			
45 - 45 - Power System Design and Integration	452 - Electrical Systems Support	91	91.4	0.4			
45 - 45 - Power System Design and Integration	453 - System Testing (PTP's)	192	192	0			
46 - 46 - FCPC Building Modifications		81	78.6	-2.4			
51 - 51 - TCP/IP Infrastructure Systems		429	429	0		-0.3	-0.3
52 - 52 - Central Instrumentation & Control		578	578	0			
53 - 53 - Data Acquisition & Facility Computing		408	407.8	-0.2			
54 - 54 - Facility Timing & Synchronization		352	352	0			
55 - 55 - Real Time Plasma & Power Supply Control Sys		293	293.3	0.3			
56 - 56 - Central Safety Interlock Systems		400	399.9	-0.1			
57 - 57 - Control Room Facility		120	119.7	-0.3			
61 - 61 - Water Systems	611 - C-Site Cooling System	153	153.3	0.3		-0.3	-0.3
61 - 61 - Water Systems	612 - NB Water Cooling Systems	240	239.9	-0.1			
61 - 61 - Water Systems	613 - Vacuum Pumping System	100	100	0			
61 - 61 - Water Systems	614 - Bakeout Water System	39	38.5	-0.5			
62 - 62 - Cryogenic Systems	621 - LN2-LHe Supply System	253	252.9	-0.1		0.5	0.5
62 - 62 - Cryogenic Systems	622 - LN2 Coil Cooling Supply	274	274.4	0.4			
62 - 62 - Cryogenic Systems	623 - GN2 Cryostat Cooling System	220	220.2	0.2			
63 - 63 - Utility Systems		121	120.9	-0.1		-0.1	-0.1
64 - 64 - PFC/VV Heating & Cooling		629	628.9	-0.1		-0.1	-0.1
65 - 65 - Facility Systems Integration		9	41.6	32.6	FY04 LOE support due to stretchout	32.6	32.6
71 - 71 - Shield Wall Seismic Modifications		27	32.2	5.2			-15.7
72 - 72 - Control Room Refurbishment		48	47.6	-0.4	Task re-grouping and bottoms up waf reestimate	-15.7	
73 - 73 - Platform Design & Fabrication		196	159.6	-36.4			
74 - 74 - Machine Assembly Planning and Oversight		1527	1614.2	87.2			
75 - 75 - Test Cell and Basement Assembly Operations		2234	2160	-74.0			
76 - 76 - Tooling Design & Fabrication		221	223.7	2.7			
81 - 81 - Project Management and Control		3195	3354.3	159.3	Project mgt oversight	81.0	159.3
					FY03 c vs est pppl & ornl	37.0	
					PDR outside reviewers contracts	41.0	
82 - 82 - Project Engineering		4689	4723.1	34.1	FY03 cost vs estimate	34.0	34.1
84 - 84 - Project Physics		501	507.65	6.65	FY03 cost estimate +16k fy04 revised est -9k	6.7	6.7
85 - 85 - Integrated Systems Testing		1225	1225	0			0.0
AA - PPPL Allocations		956	983.3	27.3	FY03 est= -24k FY04 revised est =+51	27.3	27.3
		70,418	71,030	612		609.5	611.8
	CC - Contingency	15,910	15,300	(610)			
	TEC=	86,328	86,330				