

ECP-04-005 Details
Attachment 1

WBS	CD-2 Estimate	ECP-04-005 Estimate	Delta ECP- CD-2	Delta FY2003 Actuals	Re-Estimate of R&D Tasks	Re-Estimate of Analyses & Design Tasks/Escalation	Revised M&S Estimate (Incl Prototype Contracts)	TOTALS ADDED (w/o Cont)
111 - Limiters	\$7.6K	\$0.1K	(\$7.5K)	(\$7.5K)				(\$7.5K)
Subtotal WBS 11	\$7.6K	\$0.1K	(\$7.5K)	(\$7.5K)	\$0.0K	\$0.0K	\$0.0K	(\$7.5K)
121 - Vacuum Vessel Assembly	\$5,378.0K	\$5,929.0K	\$551.0K					\$551.0K
122 - Vacuum Vessel Thermal Insulation	\$193.0K	\$174.9K	(\$18.1K)					(\$18.1K)
123 - Vacuum Vessel Heating and Cooling Distrib	\$387.0K	\$375.8K	(\$11.2K)					(\$11.2K)
124 - Vacuum Vessel Supports	\$82.0K	\$62.6K	(\$19.4K)					(\$19.4K)
125 - Vacuum Vessel Local I&C	\$26.0K	\$26.7K	\$0.7K					\$0.7K
Subtotal WBS 12	\$6,066.0K	\$6,569.0K	\$503.0K	\$83.7K	\$163.5K	\$256.0K	\$0.0K	\$503.0K
130 - General Conventional Coil Design	\$304.0K	\$407.1K	\$103.1K					\$103.1K
131 - TF Coils	\$1,529.0K	\$1,546.3K	\$17.3K					\$17.3K
132 - CS Solenoid/133-PF Ring Coils	\$1,800.0K	\$1,747.4K	(\$52.6K)					(\$52.6K)
133 - External Trim Coils	\$438.0K	\$372.0K	(\$66.0K)					(\$66.0K)
134 - Conventional Coil Local I&C	\$97.0K	\$85.5K	(\$11.5K)					(\$11.5K)
Subtotal WBS 13	\$4,168.0K	\$4,158.3K	(\$9.7K)	\$0.0K	\$0.0K	(\$10.1K)	\$0.0K	(\$9.7K)
141 - Modular Coil Winding Form	\$9,064.0K	\$9,171.9K	\$107.9K					\$107.9K
142 - Modular Coil Windings and Assembly	\$8,784.0K	\$8,683.4K	(\$100.6K)					(\$100.6K)
143 - Modular Coil Local I&C	\$121.0K	\$121.2K	\$0.2K					\$0.2K
144 - Modular Coil Winding Facility & Fixtures	\$2,579.0K	\$2,283.4K	(\$295.6K)					(\$295.6K)
Subtotal WBS 14	\$20,548.0K	\$20,259.9K	(\$288.1K)	\$0.0K	\$0.0K	(\$43.0K)	(\$245.2K)	(\$288.1K)
151 - Coil Support Structure	\$1,450.0K	\$1,435.9K	(\$14.1K)					(\$14.1K)
Subtotal WBS 15	\$1,450.0K	\$1,435.9K	(\$14.1K)	\$0.0K	\$0.0K	(\$13.9K)	\$0.0K	(\$14.1K)
161 - LN2 Distribution	\$338.0K	\$337.5K	(\$0.5K)					(\$0.5K)
162 - Electrical Leads	\$621.0K	\$621.3K	\$0.3K					\$0.3K
163 - Coil Protection System	\$78.0K	\$78.1K	\$0.1K					\$0.1K
Subtotal WBS 16	\$1,037.0K	\$1,036.9K	(\$0.1K)	\$0.0K	\$0.0K	\$0.0K	\$0.0K	(\$0.1K)
171 -Cryostat	\$864.0K	\$858.5K	(\$5.5K)					(\$5.5K)
172 - Base Support Structure	\$441.0K	\$438.2K	(\$2.8K)					(\$2.8K)
Subtotal WBS 17	\$1,305.0K	\$1,296.7K	(\$8.3K)	(\$8.6K)	\$0.0K	\$0.0K	\$0.0K	(\$8.3K)
181 - Field Period Assembly Planning/Oversight	\$1,371.0K	\$1,379.3K	\$8.3K					\$8.3K
182 - TFTR Test Cell Area preparations	\$93.0K	\$92.9K	(\$0.1K)					(\$0.1K)
183 - Receive Inspect and Test Coils	\$77.0K	\$77.4K	\$0.4K					\$0.4K
184 - Receive Inspect and Test VV	\$326.0K	\$326.3K	\$0.3K					\$0.3K
185 - Assemble Field Periods	\$1,357.0K	\$1,357.3K	\$0.3K					\$0.3K
186 - Tooling Design and Fabrication	\$1,338.0K	\$1,341.5K	\$3.5K					\$3.5K
187 - Measurement Systems	\$548.0K	\$588.8K	\$40.8K					\$40.8K
Subtotal WBS 18	\$5,110.0K	\$5,163.5K	\$53.5K	\$0.0K	\$0.0K	\$27.0K	\$26.1K	\$53.5K
191 - Stellarator Core Management & Oversight	\$1,083.0K	\$1,083.0K	\$0.0K					\$0.0K
192 - Stellarator Core Integration & Analysis	\$1,580.0K	\$1,581.6K	\$1.6K					\$1.6K
Subtotal WBS 19	\$2,663.0K	\$2,664.6K	\$1.6K	\$0.0K	\$0.0K	\$1.5K	\$0.0K	\$1.6K

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21 - Fueling Systems	\$140.0K	\$140.0K	(\$0.0K)					(\$0.0K)
Subtotal WBS 21	\$140.0K	\$140.0K	(\$0.0K)	\$0.0K	\$0.0K	\$0.0K	\$0.0K	(\$0.0K)
22 - Torus Vacuum Pumping Systems	\$384.0K	\$384.2K	\$0.2K					\$0.2K
Subtotal WBS 22	\$384.0K	\$384.2K	\$0.2K	\$0.0K	\$0.0K	\$0.0K	\$0.0K	\$0.2K
25 - Neutral Beam Injection System	\$1,103.0K	\$1,169.1K	\$66.1K					\$66.1K
Subtotal WBS 25	\$1,103.0K	\$1,169.1K	\$66.1K	\$37.9K	\$0.0K	\$16.0K	\$12.0K	\$66.1K
31 - Magnetic Diagnostics	\$454.0K	\$454.1K	\$0.1K					\$0.1K
Subtotal WBS 31	\$454.0K	\$454.1K	\$0.1K	\$0.0K	\$0.0K	\$0.0K	\$0.0K	\$0.1K
36 - Edge and Divertor Diagnostics	\$99.0K	\$99.3K	\$0.3K					\$0.3K
Subtotal WBS 36	\$99.0K	\$99.3K	\$0.3K	\$0.0K	\$0.0K	\$0.0K	\$0.0K	\$0.3K
38 - Electron Beam (EB) Mapping	\$292.0K	\$292.1K	\$0.1K					\$0.1K
Subtotal WBS 38	\$292.0K	\$292.1K	\$0.1K	\$0.0K	\$0.0K	\$0.0K	\$0.0K	\$0.1K
39 - Diagnostics Integration	\$836.0K	\$847.2K	\$11.2K					\$11.2K
Subtotal WBS 39	\$836.0K	\$847.2K	\$11.2K	\$11.3K	\$0.0K	\$0.0K	\$0.0K	\$11.2K
411 - Auxliary AC Power Systems	\$568.0K	\$569.3K	\$1.3K					\$1.3K
412 - Experimental AC Power Systems	\$43.0K	\$42.8K	(\$0.2K)					(\$0.2K)
Subtotal WBS 41	\$611.0K	\$612.1K	\$1.1K	\$0.0K	\$0.0K	\$1.1K	\$0.0K	\$1.1K
422 - D-Site AC/DC Converters	\$24.0K	\$23.5K	(\$0.5K)					(\$0.5K)
Subtotal WBS 42	\$24.0K	\$23.5K	(\$0.5K)	\$0.0K	\$0.0K	\$0.0K	\$0.0K	(\$0.5K)
431 - C-Site DC Systems	\$333.0K	\$326.7K	(\$6.3K)					(\$6.3K)
432 - D-to-C Site DC Systems	\$1,324.0K	\$1,328.7K	\$4.7K					\$4.7K
433 - D-Site DC Systems	\$491.0K	\$487.9K	(\$3.1K)					(\$3.1K)
Subtotal WBS 43	\$2,148.0K	\$2,143.3K	(\$4.7K)	\$0.0K	\$0.0K	(\$4.1K)	\$0.0K	(\$4.7K)
441 - Electrical Interlocks	\$575.0K	\$578.6K	\$3.6K					\$3.6K
442 - Kirk Key Interlocks	\$98.0K	\$98.0K	(\$0.0K)					(\$0.0K)
443 - Real Time Control Systems	\$38.0K	\$38.4K	\$0.4K					\$0.4K
444 - Instrument Systems	\$433.0K	\$433.2K	\$0.2K					\$0.2K
445 - Coil Protection Systems	\$281.0K	\$283.4K	\$2.4K					\$2.4K
446 - Ground Fault Monitoring System	\$167.0K	\$167.0K	\$0.0K					\$0.0K
Subtotal WBS 44	\$1,592.0K	\$1,598.6K	\$6.6K	\$0.0K	\$0.0K	\$5.4K	\$0.0K	\$6.6K
451 - System Design and Interfaces	\$579.0K	\$591.4K	\$12.4K					\$12.4K
452 - Electrical Systems Support	\$91.0K	\$91.4K	\$0.4K					\$0.4K
453 - System Testing (PTP's)	\$192.0K	\$192.0K	\$0.0K					\$0.0K
Subtotal WBS 45	\$862.0K	\$874.8K	\$12.8K	\$0.0K	\$0.0K	\$13.3K	\$0.0K	\$12.8K

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46 - FCPC Building Modifications	\$81.0K	\$78.6K	(\$2.4K)					(\$2.4K)
Subtotal WBS 46	\$81.0K	\$78.6K	(\$2.4K)	\$0.0K	\$0.0K	(\$2.3K)	\$0.0K	(\$2.4K)
51 - TCP/IP Infrastructure Systems	\$429.0K	\$429.0K	(\$0.0K)					(\$0.0K)
Subtotal WBS 51	\$429.0K	\$429.0K	(\$0.0K)	\$0.0K	\$0.0K	\$0.0K	\$0.0K	(\$0.0K)
52 - Central Instrumentation & Control	\$578.0K	\$578.0K	(\$0.0K)					(\$0.0K)
Subtotal WBS 52	\$578.0K	\$578.0K	(\$0.0K)	\$0.0K	\$0.0K	\$0.0K	\$0.0K	(\$0.0K)
53 - Data Acquisition & Facility Computing	\$408.0K	\$407.8K	(\$0.2K)					(\$0.2K)
Subtotal WBS 53	\$408.0K	\$407.8K	(\$0.2K)	\$0.0K	\$0.0K	\$0.0K	\$0.0K	(\$0.2K)
54 - Facility Timing & Synchronization	\$352.0K	\$352.0K	(\$0.0K)					(\$0.0K)
Subtotal WBS 54	\$352.0K	\$352.0K	(\$0.0K)	\$0.0K	\$0.0K	\$0.0K	\$0.0K	(\$0.0K)
55 - Real Time Plasma & Power Supply Control Sys	\$293.0K	\$293.3K	\$0.3K					\$0.3K
Subtotal WBS 55	\$293.0K	\$293.3K	\$0.3K	\$0.0K	\$0.0K	\$0.0K	\$0.0K	\$0.3K
56 - Central Safety Interlock Systems	\$400.0K	\$399.9K	(\$0.1K)					(\$0.1K)
Subtotal WBS 56	\$400.0K	\$399.9K	(\$0.1K)	\$0.0K	\$0.0K	\$0.0K	\$0.0K	(\$0.1K)
57 - Control Room Facility	\$120.0K	\$119.7K	(\$0.3K)					(\$0.3K)
Subtotal WBS 57	\$120.0K	\$119.7K	(\$0.3K)	\$0.0K	\$0.0K	\$0.0K	\$0.0K	(\$0.3K)
611 - C-Site Cooling System	\$153.0K	\$153.3K	\$0.3K					\$0.3K
612 - NB Water Cooling Systems	\$240.0K	\$239.9K	(\$0.1K)					(\$0.1K)
613 - Vacuum Pumping System	\$100.0K	\$100.0K	\$0.0K					\$0.0K
614 - Bakeout Water System	\$39.0K	\$38.5K	(\$0.5K)					(\$0.5K)
Subtotal WBS 61	\$532.0K	\$531.7K	(\$0.3K)	\$0.0K	\$0.0K	\$0.0K	\$0.0K	(\$0.3K)
621 - LN2-LHe Supply System	\$253.0K	\$252.9K	(\$0.1K)					(\$0.1K)
622 - LN2 Coil Cooling Supply	\$274.0K	\$274.4K	\$0.4K					\$0.4K
623 - 623 - GN2 Cryostat Cooling System	\$220.0K	\$220.2K	\$0.2K					\$0.2K
Subtotal WBS 62	\$747.0K	\$747.5K	\$0.5K	\$0.0K	\$0.0K	\$0.1K	\$0.0K	\$0.5K
63 - Utility Systems	\$121.0K	\$120.9K	(\$0.1K)					(\$0.1K)
Subtotal WBS 63	\$121.0K	\$120.9K	(\$0.1K)	\$0.0K	\$0.0K	\$0.4K	\$0.0K	(\$0.1K)
64 - PFC/VV Heating & Cooling	\$629.0K	\$628.9K	(\$0.1K)					(\$0.1K)
Subtotal WBS 64	\$629.0K	\$628.9K	(\$0.1K)	\$0.0K	\$0.0K	\$0.0K	\$0.0K	(\$0.1K)
65 - Facility Systems Integration	\$9.0K	\$41.6K	\$32.6K					\$32.6K
Subtotal WBS 65	\$9.0K	\$41.6K	\$32.6K	\$0.0K	\$0.0K	\$32.3K	\$0.0K	\$32.6K
71 - Shield Wall Reconfiguration	\$27.0K	\$32.2K	\$5.2K					\$5.2K
Subtotal WBS 71	\$27.0K	\$32.2K	\$5.2K	\$0.0K	\$0.0K	\$5.1K	\$0.0K	\$5.2K

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72 - Control Room Refurbishment	\$48.0K	\$47.6K	(\$0.4K)					(\$0.4K)
Subtotal WBS 72	\$48.0K	\$47.6K	(\$0.4K)	\$0.0K	\$0.0K	(\$0.4K)	\$0.0K	(\$0.4K)
73 - Platform Design & Fabrication	\$196.0K	\$159.6K	(\$36.4K)					(\$36.4K)
Subtotal WBS 73	\$196.0K	\$159.6K	(\$36.4K)	\$0.0K	\$0.0K	(\$36.5K)	\$0.0K	(\$36.4K)
741 - Planning Prior to Machine Assembly	\$343.0K	\$430.0K	\$87.0K					\$87.0K
742 - Construction Management	\$1,184.0K	\$1,184.2K	\$0.2K					\$0.2K
Subtotal WBS 74	\$1,527.0K	\$1,614.2K	\$87.2K	\$0.0K	\$0.0K	\$87.2K	\$0.0K	\$87.2K
75 - Test Cell and Basement Assembly Operations	\$2,234.0K	\$2,160.0K	(\$74.0K)					(\$74.0K)
Subtotal WBS 75	\$2,234.0K	\$2,160.0K	(\$74.0K)	\$0.0K	\$0.0K	(\$74.4K)	\$0.0K	(\$74.0K)
76 - Tooling Design & Fabrication	\$221.0K	\$223.7K	\$2.7K					\$2.7K
Subtotal WBS 76	\$221.0K	\$223.7K	\$2.7K	\$0.0K	\$0.0K	\$3.0K	\$0.0K	\$2.7K
77 - Measurement Systems	\$0.0K	\$0.0K	\$0.0K					\$0.0K
Subtotal WBS 77	\$0.0K	\$0.0K	\$0.0K	\$0.0K	\$0.0K	\$0.0K	\$0.0K	\$0.0K
81 - Project Management and Control	\$3,195.0K	\$3,354.3K	\$159.3K					\$159.3K
Subtotal WBS 81	\$3,195.0K	\$3,354.3K	\$159.3K	\$37.0K	\$0.0K	\$81.0K	\$40.9K	\$159.3K
82 - Project Engineering	\$4,689.0K	\$4,723.1K	\$34.1K					\$34.1K
Subtotal WBS 82	\$4,689.0K	\$4,723.1K	\$34.1K	\$34.0K	\$0.0K	\$0.0K	\$0.0K	\$34.1K
84 - Project Physics	\$501.0K	\$507.7K	\$6.7K					\$6.7K
Subtotal WBS 84	\$501.0K	\$507.7K	\$6.7K	\$15.0K	\$0.0K	(\$8.7K)	\$0.0K	\$6.7K
85 - Integrated Systems Testing	\$1,225.0K	\$1,225.0K	\$0.0K					\$0.0K
Subtotal WBS 85	\$1,225.0K	\$1,225.0K	\$0.0K	\$0.0K	\$0.0K	\$0.0K	\$0.0K	\$0.0K
AA - PPPL Allocations	\$956.0K	\$983.3K	\$27.3K					\$27.3K
Subtotal Allocations	\$956.0K	\$983.3K	\$27.3K	(\$24.0K)	\$0.0K	\$51.6K	\$0.0K	\$27.3K
CC - Contingency	\$15,910.0K	\$15,347.8K	(\$562.2K)					(\$562.2K)
Subtotal Contingency	\$15,910.0K	\$15,347.8K	(\$562.2K)	(\$178.8K)	(\$163.5K)	(\$387.6K)	\$166.3K	(\$562.2K)
Totals	\$86,327.8K	\$86,333.6K		\$0.0K	\$0.0K	\$0.0K	\$0.1K	\$0.1K