

PrincetonUniversity Plasma Physics Laboratory																	FEBRUARY 2006		
PPPL COST PERFORMANCE REPORT WORKBREAKDOWN STRUCTURE																			
NCSX																			
**** Cumulative to date FY03, FY04 , FY05 & FY06****																			
FEBRUARY 2006		CURRENT MONTH							CUMULATIVE TO DATE (from 4/1/03) (k)							ECP 39		Variance Explanation	
		BCWS	BCWP	ACWP	SV	SPI	CV	CPI	Budgeted Cost			VARIANCES				Budget	OVER	Schedule	Cost
		BCWS	BCWP	ACWP					BCWS	BCWP	ACWP	Sch Var	SPI	Cst Var	CPI	Thru FY06	BUDGET		
1 - Stellarator Core Systems		1,253	1,140	1,638	-113	0.91	-498	0.70	36,481	35,020	35,999	-1,462	.96	-980	.97	44,349			
12 Vacuum Vessel Systems		258	234	301	-24	0.91	-67	0.78	8,403	7,699	7,866	-705	.92	-167	.98	9,159			
CLOSED 1201 - Vacuum Vessel Prelim Dsn									424	424	424		1.00	0	1.00	424			
CLOSED 1202 - Vacuum Vessel R&D									1,770	1,770	1,771		1.00	-1	1.00	1,770			
1203 - Vacuum Vessel Final Dsn		2		59	-2		-59		1,099	1,033	1,110	-66	.94	-77	.93	1,098	(12)	Final assy requirements & assy drawings. Final design of heater tape and cooling tubes constrain procurement.	BUDGET EXCEEDED
1204-VV Sys Procurements (non VVSA)		64	7	35	-57		-29		65	32	89	-33	.49	-57	.36	193			Vsl supports and htg/clng flanges
CLOSED 1206 - VV Field Weld Joint R&D									16	16	16		1.00	0	1.00	16			
1250 - Vacuum Vessel Fabrication		193	227	207	34	1.17	20	1.10	5,030	4,424	4,457 (1)	-606	.88	-33	.99	5,658		VVSA Behind original plan. First sector delivery forecast April 06 (9 months off critical path), 2nd sector forecast June06 (12 months off critical path) and last sector forecast August 06 (12 months off critical path and 1 month ahead of Level II milestone.	Title III and vendor oversight
13 Conventional Coils		101	111	168	11	1.11	-57	0.66	2,140	1,865	2,008	-275	.87	-143	.93	2,765			
1301 - TF Design									946	945	964	-1	1.00	-19	.98	946			
1302 - PF Design									11			-11				11			
1303 - Central Solenoid Support Design			16	26	16		-9			27	33	27		-6	.81				
1350 - TF Coil Fabr Prep		49		8	-49		-8		732	501	545	-231	.68	-45	.92	743		All fabrication hardware placed on hold. Work to be outsourced and schedule to be revised.	
1351 - TF Coil Fabr Supplies		39	88	108	48	2.24	-20	0.81	392	357	397	-35	.91	-40	.90	811		Copper lead fabrication and insulation procurement behind.	Engr oversight
1361 - TF Fabrication		12	7	27	-5		-19	0.27	59	35	68	-25	.59	-33	.51	254		Work to be outsourced and schedule to be revised.	TF procurement process engr oversight
14 Modular Coils		743	676	1,018	-67	0.91	-342	0.66	22,065	21,691	22,305	-374	.98	-614	.97	27,311			
CLOSED 1401 - Mod Coil Prel.Dsn									304	304	304		1.00	0	1.00	304			
CLOSED 1402 - Mod.Coil Analyses									239	239	239		1.00	0	1.00	239			
1403 - Modular Coil Final Design (includes job 1421 coil interface hw dsn)		8	2	22	-7	0.19	-20	0.07	3,269	3,195	3,409	-74	.98			3,339		Final assy dwgs continue to slip. Now forecast for end of March.	Combined CPI for the design jobs (1403 & 1416) is .98 with a CV of -63.
1416 - Mod Coil Type A&B Final Design		133	54	24	-79	0.41		29	2.20	606	302	151	-304	.50	-214	.94	756	Type A and B lead assy and cladding. Lead HW and cladding dwgs behind now forecast for March completion. WITH A1 SCHEDULED TO BE SHIPPED MAY 17 THIS HARDWARE IS CONSIDERED CRITICAL AND COULD IMPACT FABRICATION. STAFFING LEVELS APPEAR INSUFFICIENT TO SUPPORT PLAN.	
CLOSED 1404-MCWF R&D & 1st Prod Casting									2,544	2,544	2,544		1.00	0	1.00	2,544			
CLOSED 1405-Mod Coil Winding R&D Prep									168	168	168		1.00		1.00	168			

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		BCWS	BCWP	ACWP					BCWS	BCWP	ACWP	Sch Var	SPI	Cst Var	CPI	Thru FY06	BUDGET		
CLOSED	1406 - Mod. Coil Winding Facility			17			-17		2,247	2,247	2,264		1.00	-17	.99	2,247			Overtime reconciliation
CLOSED	1407 -Mod Coil Winding Facility			26			-26		2,546	2,546	2,571		1.00	-25	.99	2,546			Overtime reconciliation
	1408-Mod Coil Winding Supplies	110	72	143	-39	0.65	-71	0.50	967	1,004	1,057 (3)	36	1.04	-53	.95	1,638		A1 cladding and lead hardware behind schedule.	
CLOSED	1409 - Mod. Coil Test Stand								916	916	916		1.00	0	1.00	916			
CLOSED	1410 MC Twisted Racetrack Fabr			1			-1		1,050	1,050	1,050		1.00	0	1.00	1,050			
	1411-MCWF Fabrication S005242	342	399	410	57	1.17	-11	0.97	5,515	5,593	5,556 (2)	78	1.01	37	1.01	8,098			
CLOSED	1412 - Complete Winding Facilities			5			-5		537	537	541		1.00	-4	.99	537			Overtime reconciliation
CLOSED	1413 - Mod Coil Fracture Analysis								28	28	28		1.00	0	1.01	28			
	1414 - Coil Testing	2	11	104	9		-93		223	209	310	-14	.94	-102	.67	276	(34)		Kickless cable testing new scope and not budgeted. Work completed.
CLOSED	1415 - Dimensional Control Testing								24	24	24		1.00	0	1.00	24			
CLOSED	1419 - Winding Facility Modification								48	48	54		1.00	-6	.88	48			
	1451 - Mod Coil Winding	149	140	236	-9	0.94	-96	0.59	834	738	1,046	-96	.88	-308	.71	2,553		C-1 Plan Completion 3/29/06 forecast 3/23/06 C-2 Started late due to late receipt of casting. Plan completion 4/17/06 forecast 4/18/06. C-3 Being prepared for cladding installation.	Unplanned work accounts for 22% of cost. Learning curve beginning to be seen on C2 and C3 (SEE ATTACHED DETAILED ANALYSIS)
	1459 - MC Unplanned rework			30			-30				73			-73					
15	Structures	19			-19				97	80	82	-17	.83	-2	.97	208			
	1501 - Structures Design	19			-19				97	80	82	-17	.83	-2	.97	208			
16	16 - Coil Services																		
17	Cryostat and Base			13			-13		377	368	409	-9	.98	-41	.90	377			
	1701-Cryostat&Base Sprt Strct Dsn			13			-13		377	368	409	-9	.98	-41	.90	377			Unplanned updates to the cryostat design.
18	Field Period Assembly	91	70	93	-20	0.78	-22	0.76	1,704	1,620	1,648	-84	.95	-28	.98	2,526			
CLOSED	1801-Field Period Assly								61	61	61		1.00	0	1.00	61			
	1802 - FP Assy Oversight&Support	31	31	25	0	1.00	6	1.26	483	483	471	0	1.00	12	1.03	718			
	1803- FP Assy Tooling/Constructability	48	27	29	-20	0.57	-2	0.94	673	627	618	-47	.93	8	1.01	933		Structural analysis of half period assy and MC turning fixture behind.	
	1804-FP Assy Measurement		12	39	12		-27	0.31	442	450	497	8	1.02	-48	.90	452			Unbudgeted purchase of 3rd Romer arm as well as repair to an existing arm.
	1810 - Field Period Assembly	12			-12				46		1	-46		-1		362			
19	1901 - Stellarator Core Mngt&Integr	41	49	45	8	1.19	4	1.10	1,695	1,697	1,680	2	1.00	17	1.01	2,003			
2	Plasma Heating, Fueling & Vac Sys			1			-1		349	349	348		1.00	1	1.00	349			
CLOSED	2001-VPS Gas& Cond Sys Oversight								64	64	63		1.00	1	1.02	64			
CLOSED	2501 - Neutral Beam Refurbishment			1			-1		285	285	285		1.00	0	1.00	285			
3	Diagnostics	15	106	57	91	7.22	49	1.87	591	595	641	5	1.01	-46	.93	770			
31	3101 Magnetic Diagnostics	9	100	52	91	####	49	1.94	288	293	343	5	1.02	-50	.85	425			Saddle loop layouts took 3 times longer than budgeted.
39	3901 - Diagnostics sys Integration	6	6	5	0	1.01	1	1.19	303	303	299	0	1.00	4	1.01	345			
4	Electrical Power Systems	19		36	-19		-36		682	571	703	-111	.84	-132	.81	742			
41	4101 - AC Power								107	107	107		1.00	0	1.00	107			
43	4301 - DC Systems	13		32	-13		-32		292	271	378	-21	.93	-107	.72	314			Unbudgeted redesign of C-site power systems
44	4401 - Control & Protection			4			-4		55	59	78	4	1.07	-19	.75	55			

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																Budget Thru FY06	OVER BUDGET	Schedule	Cost
		BCWS	BCWP	ACWP	SV	SPI	CV	CPI	Budgeted Cost BCWS	BCWP	ACWP	Sch Var	SPI	Cst Var	CPI				
45	4501 - Power Sys Dsn & Integr	5			-5				227	133	138	-94	.59	-5	.96	265		C-site cabling design behind. Planning FDR on _____.	
46	4601 - FCPC Bldg Mods								1	1	1	0	1.30		1.00	1			
5	Central I&C Systems								33	33	33		1.00	0	1.00	33			
58	5801 -Central I&C Integr								33	33	33		1.00	0	1.00	33			
6	Facility Systems								24	24	24		1.00	0	.99	24			
	6163 - Facility Systems Support FY04								15	15	15		1.00	0	1.01	15			
	62 - Cryogenic Systems															-			
	63 - Utility Systems															-			
CLOSED	6501 - Facility Systems Integration								9	9	9		1.00	0	.96	9			
7	Test Cell Prep & Machine Assy			9			-9		897	905	941	8	1.01	-36	.96	915			
CLOSED	7101 - Shield Wall Modif			0			0		32	32	33		1.00	-1	.98	32			
	7201 - Control Room Walls&Floors															-			
	7301 - Platform Design &								71	72	76	1	1.01	-4	.95	71			
	7401 - TC Prep & Mach Assy Planning			8			-8		794	801	833	7	1.01	-32	.96	812			
8	Project Oversight & Support	186	185	261	0	1.00	-76	0.71	7,266	7,266	7,483	1	1.00	-216	.97	8,665			
81	Project Management and Control	91	91	107	0	1.00	-16	0.85	3,439	3,439	3,512	0	1.00	-74	.98	4,126			
	8101 - Project Management & Control	51	51	61	0	1.00	-10	0.83	2,205	2,205	2,233	0	1.00	-28	.99	2,588			
	8102 - NCSX MIE Management ORNL	14	14	14	0	1.00	0	1.02	324	324	327	0	1.00	-3	.99	429			
	8998 - Allocations	26	26	33	0	1.00	-6	0.81	910	910	952	0	1.00	-42	.96	1,109			
82	Project Engineering	94	94	154	0	1.00	-59	0.61	3,357	3,358	3,500	1	1.00	-143	.96	4,069			
	8202 - Engr Mgmt & Sys Eng Support	50	50	55	0	1.00	-5	0.90	1,863	1,863	1,907		1.00	-44	.98	2,241			
	8203 - Design Integration	11	11	18	0	1.00	-7	0.62	742	742	733	0	1.00	9	1.01	826			
	8204 - Systems Analysis	18	18	54	0	1.00	-36	0.33	588	588	695	0	1.00	-106	.85	724		Unplanned integrated structural analysis of MC inboard connection and machine support locations.	
	8205 - Dimensional Control Coord.	15	15	26	0	1.00	-11	0.59	164	164	165	0	1.00	-1	.99	278			
84	Project Physics								470	470	470		1.00	0	1.00	470			
CLOSED	8401 - Project Physics								324	324	324		1.00	0	1.00	324			
CLOSED	8402 - Project Physics MIE ORNL								146	146	146		1.00	0	1.00	146			
Subtotal		1,472	1,432	2,001	-40	0.97	-569	0.72	46,323	44,763	46,172	-1,560	.97	-1,409	.97	55,848			
Contingency/Management Reserve																1,295			
Incremental Funding																1,291			
1% hold back on FY06 BA																(172)			
DCMA QA Inspection services																75			
TOTAL PROJECT																58,337			
	(1) Reflects accrual increase of \$ 89.78 k based on MTM's earned value report																		
	(2) Reflects accrual increase of \$ 42 k based on EIO's earned value report																		
	(3) Reflects accrual increase of \$ 24.94 k based on partial delivery of winding clamps																		
	Thru FY2004								20,640	19,652	19,744	-988	0.95	-92	1.00				
	Thru Oct								20,637	20,832	20,917	195	1.01	-85	1.00				
	Thru NOVEMBER								21,812	21,906	22,158	94	1.00	-252	0.99				
	Thru DECEMBER								23,813	23,042	23,434	-771	0.97	-392	0.98				
	Thru JANUARY (ecp-21)								25,866	24,310	24,639	-1556	0.94	-329	0.99				
	Thru Feb (ecp-24)								26,637	25,856	26,285	-781	0.97	-429	0.98				
	Thru Mar (ecp-29)								28,440	27,282	28,004	-1158	0.96	-722	0.97				
	Thru Apr (ecp-30)								29,588	28,736	29,416	-852	0.97	-680	0.98				
	Thru May (ecp-30)								31,301	29,903	30,889	-1398	0.96	-986	0.97				
	Thru June (ecp-30)								32,740	31,362	32,719	-1378	0.96	-1357	0.96				
	Thru July (ecp-36)								35,206	33,682	34,276	-1524	0.96	-594	0.98				
	Thru Aug (ecp-36)								36,914	35,480	36,416	-1434	0.96	-936	0.97				

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										BCWS	BCWP	ACWP	Sch Var	SPI	Cst Var	CPI	Thru FY06			BUDGET	
		Thru Sep (ecp-36)	Thru Sep (ecp-36)							38,562	36,721	38,314		-1841	0.95	-1593	0.96	BCWR		contingency remaining	
		PARS for OCT								1,710	3,061	1,485		-90	0.94	-17	0.98	for October only			
		Thru Oct (ecp-39)								40,272	39,782	39,799		-490	0.99	-17	1.00	43,018		9600	22.3%
		PARS for NOV								1,673	1,060	1,394		-613	0.63	-334	0.76				22.3%
		Thru NOV (ecp-39)								41,945	40,842	41,193		-1103	0.97	-351	0.99	41,958		9600	22.9%
		PARS for DEC								1,274	896	1,331		-378	0.70	-435	0.67				22.0%
		Thru DEC (ecp-39)								43,219	41,738	42,524		-1481	0.97	-786	0.98	41,062		9600	23.4%
		PARS for JAN								1,633	1,594	1,647		-39	0.98	-53	0.97				21.5%
		Thru JAN (ecp-39)								44,852	43,332	44,171		-1520	0.97	-840	0.98	39,468		9600	24.3%
		PARS for FEB								1,471	1,431	2,001		-40	0.97	-570	0.72				22.2%
		Thru FEB (ecp-39)								46,323	44,763	46,172		-1560	0.97	-1409	0.97	38,037		9600	25.2%