

PPPL COST PERFORMANCE REPORT WORKBREAKDOWN STRUCTURE

5/18/05

NCSX

**** Cumulative to date FY03, FY04 & FY05 ****

APRIL FY05

	CUMULATIVE TO DATE (from 4/1/03) (k)								ECP30		EAC		Variance Explanation	
	Budgeted Cost			VARIANCES					Budget	ETC	(acwp + etc)	UNDER	Schedule	Cost
	BCWS	BCWP	ACWP	Sch Var	SPI	Cst Var	CPI	Thru FY05	Thru FY05	Thru FY05	(OVER)			
1 - Stellarator Core Systems	22,565	21,790	22,480	-775	.97	-690	.97	29,403	8,096	30,576	(1,173)			
12 Vacuum Vessel Systems	4,880	4,456	4,475	-424	.91	-19	1.00	7,302	2,854	7,329	(27)			
CLOSED 1201 - Vacuum Vessel Prelim Dsn	424	424	424	0	1.00	0	1.00	424		424				
CLOSED 1202 - Vacuum Vessel R&D	1,791	1,791	1,771	0	1.00	21	1.01	1,791		1,771	21			
1203 - Vacuum Vessel Final Dsn	880	815	840	-65	.93	-25	.97	944	125	965	(22)	Final design tasks; Heater tape dsn, mag diag interface dwgs, thermal insulation.		
1204-VV Sys Procurements (non VVS/								257	273	273	(16)			
1206 - VV Field Weld Joint R&D	11	11	14	0	.99	-3	.80	19	1	15	4			
1250 - Vacuum Vessel Fabrication	1,774	1,414	1,426 (1)	-360	.80	-12	.99	3,867	2,455	3,881	(14)	Behind on buying materials. (Dies & gauges completed in May)		
13 Conventional Coils	884	802	849	-82	.91	-47	.94	1,677	1,080	1,929	(251)			
1301 - TF Design	837	748	788	-89	.89	-39	.95	837	114	902	(64)	FDR (originally scheduled for May 2nd) slipped to May 10th for the conductor and June 2nd for the comprehensive TF.	Underestimated Rushinski by factor of 3.	
1302 - PF and CS Design								-		-				
1350 - TF Coil Fabr Prep	46	54	61	7	1.16	-7	.88	381	328	389	(8)			
1351 - TF Coil Fabrication								459	638	638	(179)			
1352 - PF Coil Procurement								-		-				
1353 - CS Structure Procurement								-		-				
1354 - Trim Coil Procurement								-		-				
1355 - WBS 13 I&C Proc & Coil Assy								-		-				
14 Modular Coils	14,444	14,227	14,761	-217	.98	-535	.96	17,135	3,221	17,982	(847)			
CLOSED 1401 - Mod Coil Prel.Dsn	303	303	304	0	1.00	-1	1.00	303		304	(1)			
CLOSED 1402 - Mod.Coil Analyses	239	239	239	0	1.00		1.00	239		239	(0)			
1403 - Modular Coil Final Design	2,701	2,555	2,597	-145	.95	-41	.98	3,141	557	3,154	(12)	Type C winding analysis and testing (-81). Coil to coil interface design details (-41) behind but not juggular to the FDR's. Comprehensive FDR slipped from May 31st to June 29th. Joule milestone June 30th.		
CLOSED 1404-MCWF R&D & 1st Prod Casting	2,534	2,534	2,554	0	1.00	-20	.99	2,534		2,554	(20)			
CLOSED 1405-Mod Coil Winding R&D Prep	168	168	168		1.00	0	1.00	168		168	0			
CLOSED 1406 - Mod. Coil Winding	2,214	2,214	2,245	0	1.00	-31	.99	2,214		2,245	(31)			
1410 MC Twisted Racetrack Fabr	699	685	755	-15	.98	-71	.91	799	127	882	(83)	TRC VPI delayed from end April to May 23rd.	Unplanned overtime	
CLOSED 1407 -Mod Coil Winding Facility	2,523	2,523	2,546	0	1.00	-23	.99	2,523		2,546	(23)			
1412 - Complete Winding Facilities	304	309	420	4	1.01	-112	.73	310	2	422	(112)		Fabrication of Type B casting supports (6) sets taking longer than estimated. Need to complete and close job after Winding Facility ACC Review (May12 ?).	

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		Budgeted Cost			VARIANCES				Budget	ETC	(acwp + etc)	UNDER	
		BCWS	BCWP	ACWP	Sch Var	SPI	Cst Var	CPI	Thru FY05	Thru FY05	Thru FY05	(OVER)	
	1408-Mod Coil Winding Supplies	260	304	335	44	1.17	-31	.91	596	379	714	(119)	
	1409 - Mod. Coil Test Stand	438	427	612	-11	.97	-185	.70	488	61	673	(185)	Ready for TRC testing by June 3rd. Just in time, zero free float!
	1411-MCWF Fabrication S005242	2,033	1,943	1,966 (2)	-90	.96	-23	.99	3,420	1,737	3,703	(283)	Pattern B 17% complete. Plan =71%. First delivery still planned for June 24th
	1413 - Mod Coil Fracture Analysis	23	23	19	0	1.00	4	1.24	23	-	19	4	
	1451 - Mod Coil Winding	6		1	-6		-1		377	358	359	18	
	15 Structures	35	35	34	0	1.00	1	1.03	35	-	34	1	
	1501 - Structures Design	35	35	34	0	1.00	1	1.03	35		34	1	
	1550 - Structures Procurement								-		-		
	16 - Coil Services												
	17 Cryostat and Base	190	189	247	-1	.99	-58	.76	241	46	293	(53)	
	1701-Cryost&Base Sprt Strct Dsn	190	189	247	-1	.99	-58	.76	241	46	293	(53)	Designer support underestimated by factor of 2. 1 1/2 MM of analysis (Dahlgren) req'd but not estimated.
	1751 - Cryostat Procurement								-		-		
	1752 - Base Support Structure Procure								-		-		
	18 Field Period Assembly	915	864	877	-51	.94	-13	.98	1,512	611	1,488	24	
	CLOSED 1801-Field Period Assly	61	61	61	0	1.00	0	.99	61		61	(0)	
	1802 - FP Assy Oversight&Support	248	248	278	0	1.00	-31	.89	311	63	341	(31)	HP charging greater than the 75% budgeted plus OT to support the TRC fabrication.
	1803- FP Assy Toolg/Constructability	284	233	207	-51	.82	26	1.13	758	500	707	51	VV suprt fixture originally planned for mid-May. No forecast. Half period assy fix PDR planned for end may. Both behind on structural/seismic analysis and metrology layouts.
	1804-FP Assy Measurement	322	322	330	0	1.00	-8	.97	382	48	378	4	
	1808 - TF/Mod Coil Sub-Assembly								-		-		
	1810 - Field Period Assembly								-		-		
	19 1901 - Stellarator Core Mngt&Int	1,218	1,218	1,237		1.00	-19	.98	1,502	284	1,521	(19)	
	2 - Plasma Heating,Fueling & Vac	348	348	347	0	1.00	1	1.00	348	-	347	1	
	21 - Fueling Systems								-		-		
	22 - Torus Vacuum Pumping Systems								-		-		
	CLOSED 2001-VPS Gas& Cond Sys Oversight	64	64	63	0	1.00	1	1.01	64		63	1	
	CLOSED 2501 - Neutral Beam Refurbishment	284	284	284	0	1.00	0	1.00	284		284	0	

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		Budgeted Cost			VARIANCES				Budget	ETC	(acwp + etc)	UNDER	Schedule	Cost	
BCWS	BCWP	ACWP	Sch Var	SPI	Cst Var	CPI	Thru FY05	Thru FY05	Thru FY05	(OVER)					
3 - Diagnostics		303	289	297		-14	.96	-8	.97	493	194	491	2		
31	3101 Magnetic Diagnostics	44	31	42		-14	.70	-12	.73	206	165	207	(1)	VV saddle loop prototyping and design. PDR TBD. Mod coil cowound loop design. FDR TBD.	
36	36 - Edge and Divertor Diagnosti									-	-	-			
38	38 - Electron Beam (EB) Mapping									-	-	-			
39	3901 - Diagnostics sys Integratio	258	258	255	0	1.00	3	1.01		287	29	284	3		
4 - Electrical Power Systems		411	351	346		-60	.85	5	1.02	614	260	606	9		
41	4101 - AC Power	81	81	81	0	1.00	1	1.01		81		81	1		
43	4301 - DC Systems	123	109	101	-15	.88	7	1.07		233	122	223	9		
44	4401 - Control & Protection	1	1	24	0	1.00	-23	.04		1		24	(23)		
45	4501 - Power Sys Dsn & Integr	204	159	138			-45	.78	20	1.15	298	138	276	22	Power systems design slipped by one month. CDR forecast for May 30th and the PDR by June 30th.
46	4601 - FCPC Bldg Mods	1	1	1	0	1.02			1.00	1		1	(0)		
5 - Central I&C Systems		35	35	33		0	1.00	2	1.06	40	5	38	2		
51	51 - TCP/IP Infrastructure System									-	-	-			
52	52 - Central Instrumentation & Cc									-	-	-			
53	53 - Data Acquisition & Fac Comj									-	-	-			
54	54 - Facility Timing & Synchroniz									-	-	-			
55	55 - Real Time Plasma & Power S									-	-	-			
56	56 - Central Safety Interlock Syst									-	-	-			
58	5801 -Central I&C Integr	35	35	33	0	1.00	2	1.06		40	5	38	2		
6 - Facility Systems		24	24	24		1.00	0	1.01		24	-	24	0		
	61 - Water Systems														
	6163 - Facility Systems Support FY04	15	15	15		1.00	0	1.01		15		15	0		
	62 - Cryogenic Systems									-	-	-			
	63 - Utility Systems									-	-	-			
CLOSED	6501 - Facility Systems Integratic	9	9	9		1.00	0	1.00		9		9			
7 - Test Cell Prep & Machine Assy		548	546	546		-2	1.00	0	1.00	725	228	774	(49)		
CLOSED	7101 - Shield Wall Modif	32	32	32	0	1.00		1.00		32		32	(0)		
	7201 - Control Room Walls&Floo	35					-35			48	48	48	(0)	On hold awaiting manpower. Not critical	
	7301 - Platform Design &		26				26		26	70	70	70	(0)	Work on nut plates started ahead of plan.	
	7401 - TC Prep & Mach Assy Plan	482	488	514	6	1.01	-26	.95		575	110	624	(49)		
75 Machine Assembly										-	-	-			
	7501 - Construction Support Crew									-	-	-			
	7502 - Test Cell Facility Preparations									-	-	-			

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		Budgeted Cost			VARIANCES				Budget	ETC	(acwp + etc)	UNDER	Schedule	Cost
		BCWS	BCWP	ACWP	Sch Var	SPI	Cst Var	CPI	Thru FY05	Thru FY05	Thru FY05	(OVER)		
	7503 - Machine Assembly								-		-			
76	7601 - Tooling Design & Fabricat								-		-			
8	Project Oversight & Support	5,353	5,352	5,342		-1	1.00	10	1.00	6,348	1,009	6,351	(3)	
	81 Project Management and Control	2,444	2,442	2,447		-2	1.00	-5	1.00	2,934	492	2,939	(5)	
	8101 - Project Management & Control	1,671	1,669	1,671		-2	1.00	-3	1.00	1,969	300	1,971	(3)	
	8102 - NCSX MIE Management ORNL	201	201	202		0	1.00	-1	1.00	242	41	243	(1)	
	8998 - Allocations	573	573	575		0	1.00	-2	1.00	724	151	726	(2)	
	82 Project Engineering	2,439	2,439	2,424		0	1.00	15	1.01	2,943	517	2,941	2	
	8202 - Engr Mgmt & Sys Eng Support	1,367	1,367	1,349		0	1.00	18	1.01	1,634	267	1,616	18	
	8203 - Design Integration	657	657	651		0	1.00	6	1.01	722	66	717	5	
	8204 - Systems Analysis	380	380	385		0	1.00	-5	.99	490	110	495	(5)	
	8205 - Dimensional Control Coord.	36	36	40		0	1.00	-4	.91	97	74	114	(17)	
	84 Project Physics	470	470	470		0	1.00	0	1.00	470	-	470	(0)	
	CLOSED 8401 - Project Physcis	324	324	324		0	1.00	1	1.00	324	-	324	1	
	CLOSED 8402 - Project Physics MIE ORNL	146	146	146		0	1.00	-1	1.00	146	-	146	(1)	
	85 - Integrated Systems Testing													
	Subtotal	29,588	28,736	29,416		-852	.97	-680	.98	37,996	9,792	39,208	(1,212)	
	Contingency/Management Reserve									3,259				
	TOTAL PROJECT									41,255	9,792	39,208	2,047	
	(1) Reflects add'l accrual of \$91.8k based on vendor's April earned value report													
	(2) Reflects accrual reduction of \$199.5k based on vendor's April earned value report													
	Thru FY2004	20,640	19,652	19,744		-988	0.95	-92	1.00					
	Thru NOVEMBER	21,812	21,906	22,158		94	1.00	-252	0.99	FORECAST PROJECT UNDRERUN FY05				
	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					