

**PrincetonUniversity Plasma Physics Laboratory**  
**PPPL COST PERFORMANCE REPORT WORKBREAKDOWN STRUCTURE**

**NCSX**

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

**AUGUST FY05**

		CUMULATIVE TO DATE (from 4/1/03) (k)							ECP36
		Budgeted Cost		ACWP	VARIANCES				Budget
		BCWS	BCWP	ACWP	Sch Var	SPI	Cst Var	CPI	Thru FY05
<b>1</b>	<b>- Stellarator Core Systems</b>	<b>28,648</b>	<b>27,451</b>	<b>28,333</b>	<b>-1,197</b>	<b>.96</b>	<b>-882</b>	<b>.97</b>	<b>30,390</b>
	<b>12 Vacuum Vessel Systems</b>	<b>6,520</b>	<b>6,240</b>	<b>6,224</b>	<b>-280</b>	<b>.96</b>	<b>16</b>	<b>1.00</b>	<b>7,340</b>
	CLOSED 1201 - Vacuum Vessel Prelim Dsn	424	424	424	0	1.00	0	1.00	424
	CLOSED 1202 - Vacuum Vessel R&D	1,791	1,791	1,771	0	1.00	21	1.01	1,791
	1203 - Vacuum Vessel Final Dsn	944	897	935	-46	.95	-38	.96	944
	1204-VV Sys Procurements (non VVS)	18			-18				257
	CLOSED 1206 - VV Field Weld Joint R&D	18	18	16	0	1.00	1	1.08	18
	1250 - Vacuum Vessel Fabrication	3,326	3,109	3,077 (1)	-217	.93	32	1.01	3,906
	<b>13 Conventional Coils</b>	<b>1,489</b>	<b>1,044</b>	<b>1,305</b>	<b>-444</b>	<b>.70</b>	<b>-261</b>	<b>.80</b>	<b>1,677</b>
	1301 - TF Design	837	815	946	-22	.97	-131	.86	837
	1302 - PF and CS Design		21		21		21		-
	1350 - TF Coil Fabr Prep	294	208	332	-85	.71	-124	.63	381
	1351 - TF Coil Fabrication	358		27	-358		-27		459
	1352 - PF Coil Procurement								-
	1353 - CS Structure Procurement								-
	1354 - Trim Coil Procurement								-
	1355 - WBS 13 I&C Proc & Coil Assy								-
	<b>14 Modular Coils</b>	<b>17,529</b>	<b>17,169</b>	<b>17,754</b>	<b>-360</b>	<b>.98</b>	<b>-585</b>	<b>.97</b>	<b>18,098</b>
	CLOSED 1401 - Mod Coil Prel.Dsn	303	303	304	0	1.00	-1	1.00	303
	CLOSED 1402 - Mod.Coil Analyses	239	239	239	0	1.00		1.00	239
	1403 - Modular Coil Final Design	3,085	2,731	3,067	-354	.89	-336	.89	3,141
	CLOSED 1404-MCWF R&D & 1st Prod Casting	2,534	2,534	2,552	0	1.00	-18	.99	2,534
	CLOSED 1405-Mod Coil Winding R&D Prep	168	168	168		1.00	0	1.00	168
	CLOSED 1406 - Mod. Coil Winding Facility	2,214	2,214	2,250	0	1.00	-36	.98	2,214
	CLOSED 1410 MC Twisted Racetrack Fabr	1,080	1,080	1,070	0	1.00	10	1.01	1,080
	CLOSED 1407 -Mod Coil Winding Facility	2,523	2,523	2,546	0	1.00	-23	.99	2,523
	CLOSED 1412 - Complete Winding Facilities	540	540	543	0	1.00	-3	.99	540
	CLOSED 1419 - Winding Facility Modification			46			-46		
	1414 - Coil Testing	49	21	52	-28	.43	-30	.41	77
	CLOSED 1415 - Dimensional Control Testing	15	15	25		1.00	-10	.59	15
	1408-Mod Coil Winding Supplies	520	442	440	-78	.85	2	1.01	594
	CLOSED 1409 - Mod. Coil Test Stand	854	854	872	0	1.00	-19	.98	854
	1411-MCWF Fabrication S005242	3,110	3,477	3,505 (2)	368	1.12	-28	.99	3,430
	CLOSED 1413 - Mod Coil Fracture Analysis	23	23	28	0	1.00	-5	.83	23
	1451 - Mod Coil Winding	272	4	46	-268	.02	-42	.09	364
	<b>15 Structures</b>	<b>35</b>	<b>67</b>	<b>70</b>	<b>32</b>	<b>1.94</b>	<b>-3</b>	<b>.96</b>	<b>35</b>
	1501 - Structures Design	35	67	70	32	1.94	-3	.96	35
	1550 - Structures Procurement								-

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		Budgeted Cost		ACWP	VARIANCES				Budget
		BCWS	BCWP	ACWP	Sch Var	SPI	Cst Var	CPI	Thru FY05
<b>16</b>	<b>16 - Coil Services</b>								-
<b>17</b>	<b>Cryostat and Base</b>	<b>229</b>	<b>194</b>	<b>350</b>	<b>-35</b>	<b>.85</b>	<b>-156</b>	<b>.55</b>	<b>241</b>
	1701-Cryostat&Base Sprt Strct Dsn	229	194	350	-35	.85	-156	.55	241
	1751 - Cryostat Procurement								-
	1752 - Base Support Structure Procure								-
<b>18</b>	<b>Field Period Assembly</b>	<b>1,411</b>	<b>1,306</b>	<b>1,214</b>	<b>-105</b>	<b>.93</b>	<b>92</b>	<b>1.08</b>	<b>1,512</b>
	<i>CLOSED</i> 1801-Field Period Assly	61	61	61	0	1.00	0	.99	61
	1802 - FP Assy Oversight&Support	298	298	348	0	1.00	-50	.86	311
	1803- FP Assy Toolg/Constructability	679	587	411	-92	.86	176	1.43	758
	1804-FP Assy Measurement	373	360	394	-13	.97	-34	.91	382
	1808 - TF/Mod Coil Sub-Assembly								-
	1810 - Field Period Assembly								-
<b>19</b>	<b>1901 - Stellarator Core Mngtt&amp;Int</b>	<b>1,436</b>	<b>1,431</b>	<b>1,417</b>	<b>-5</b>	<b>1.00</b>	<b>14</b>	<b>1.01</b>	<b>1,488</b>
<b>2</b>	<b>2 - Plasma Heating,Fueling &amp; Vac</b>	<b>348</b>	<b>348</b>	<b>347</b>	<b>0</b>	<b>1.00</b>	<b>1</b>	<b>1.00</b>	<b>348</b>
	21 - Fueling Systems								-
	22 - Torus Vacuum Pumping Systems								-
	<i>CLOSED</i> 2001-VPS Gas& Cond Sys Oversight	64	64	63	0	1.00	1	1.01	64
	<i>CLOSED</i> 2501 - Neutral Beam Refurbishment	284	284	284	0	1.00	0	1.00	284
<b>3</b>	<b>3 - Diagnostics</b>	<b>445</b>	<b>376</b>	<b>375</b>	<b>-69</b>	<b>.85</b>	<b>1</b>	<b>1.00</b>	<b>493</b>
<b>31</b>	<b>3101 Magnetic Diagnostics</b>	<b>164</b>	<b>95</b>	<b>106</b>	<b>-69</b>	<b>.58</b>	<b>-11</b>	<b>.90</b>	<b>206</b>
<b>36</b>	<b>36 - Edge and Divertor Diagnosti</b>								-
<b>38</b>	<b>38 - Electron Beam (EB) Mapping</b>								-
<b>39</b>	<b>3901 - Diagnostics sys Integratic</b>	<b>281</b>	<b>281</b>	<b>269</b>	<b>0</b>	<b>1.00</b>	<b>12</b>	<b>1.05</b>	<b>287</b>
<b>4</b>	<b>4 - Electrical Power Systems</b>	<b>599</b>	<b>445</b>	<b>456</b>	<b>-154</b>	<b>.74</b>	<b>-11</b>	<b>.98</b>	<b>614</b>
<b>41</b>	<b>4101 - AC Power</b>	<b>81</b>	<b>107</b>	<b>81</b>	<b>25</b>	<b>1.31</b>	<b>26</b>	<b>1.33</b>	<b>81</b>
<b>43</b>	<b>4301 - DC Systems</b>	<b>219</b>	<b>152</b>	<b>192</b>	<b>-68</b>	<b>.69</b>	<b>-41</b>	<b>.79</b>	<b>233</b>
<b>44</b>	<b>4401 - Control &amp; Protection</b>	<b>1</b>	<b>4</b>	<b>44</b>	<b>3</b>	<b>3.85</b>	<b>-40</b>	<b>.09</b>	<b>1</b>
<b>45</b>	<b>4501 - Power Sys Dsn &amp; Integr</b>	<b>296</b>	<b>181</b>	<b>138</b>	<b>-115</b>	<b>.61</b>	<b>43</b>	<b>1.31</b>	<b>298</b>
<b>46</b>	<b>4601 - FCPC Bldg Mods</b>	<b>1</b>	<b>1</b>	<b>1</b>		<b>1.00</b>	<b>0</b>	<b>.98</b>	<b>1</b>
<b>5</b>	<b>5 - Central I&amp;C Systems</b>	<b>38</b>	<b>38</b>	<b>33</b>	<b>0</b>	<b>1.00</b>	<b>5</b>	<b>1.15</b>	<b>40</b>
<b>51</b>	<b>51 - TCP/IP Infrastructure System</b>								-
<b>52</b>	<b>52 - Central Instrumentation &amp; C</b>								-
<b>53</b>	<b>53 - Data Acquisition &amp; Fac Com</b>								-
<b>54</b>	<b>54 - Facility Timing &amp; Synchroniz</b>								-
<b>55</b>	<b>55 - Real Time Plasma &amp; Power S</b>								-
<b>56</b>	<b>56 - Central Safety Interlock Syst</b>								-
<b>58</b>	<b>5801 -Central I&amp;C Integr</b>	<b>38</b>	<b>38</b>	<b>33</b>	<b>0</b>	<b>1.00</b>	<b>5</b>	<b>1.15</b>	<b>40</b>

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		BCWS	BCWP	ACWP	Sch Var	SPI	Cst Var	CPI	Thru FY05
<b>6 - Facility Systems</b>		<b>24</b>	<b>24</b>	<b>24</b>		<b>1.00</b>	<b>0</b>	<b>1.01</b>	<b>24</b>
	<b>61 - Water Systems</b>								
	6163 - Facility Systems Support FY04	15	15	15		1.00	0	1.01	15
	<b>62 - Cryogenic Systems</b>								-
	<b>63 - Utility Systems</b>								-
<i>CLOSED</i>	<b>6501 - Facility Systems Integrati</b>	<b>9</b>	<b>9</b>	<b>9</b>		<b>1.00</b>	<b>0</b>	<b>1.00</b>	<b>9</b>
<b>7 - Test Cell Prep &amp; Machine Assy</b>		<b>666</b>	<b>652</b>	<b>723</b>	<b>-14</b>	<b>.98</b>	<b>-71</b>	<b>.90</b>	<b>685</b>
<i>CLOSED</i>	<b>7101 - Shield Wall Modif</b>	<b>32</b>	<b>32</b>	<b>32</b>	<b>0</b>	<b>1.00</b>		<b>1.00</b>	<b>32</b>
	<b>7201 - Control Room Walls&amp;Floo</b>	<b>8</b>			<b>-8</b>				<b>8</b>
	<b>7301 - Platform Design &amp;</b>	<b>60</b>	<b>86</b>	<b>44</b>	<b>26</b>	<b>1.43</b>	<b>42</b>	<b>1.97</b>	<b>70</b>
	<b>7401 - TC Prep &amp; Mach Assy Pla</b>	<b>566</b>	<b>535</b>	<b>647</b>	<b>-31</b>	<b>.94</b>	<b>-113</b>	<b>.83</b>	<b>575</b>
<b>75 Machine Assembly</b>									-
	7501 - Construction Support Crew								-
	7502 - Test Cell Facility Preparations								-
	7503 - Machine Assembly								-
<b>76 7601 - Tooling Design &amp; Fabricat</b>									-
<b>8 - Project Oversight &amp; Support</b>		<b>6,145</b>	<b>6,144</b>	<b>6,123</b>	<b>0</b>	<b>1.00</b>	<b>21</b>	<b>1.00</b>	<b>6,348</b>
<b>81 Project Management and Control</b>		<b>2,834</b>	<b>2,834</b>	<b>2,841</b>	<b>0</b>	<b>1.00</b>	<b>-7</b>	<b>1.00</b>	<b>2,934</b>
	8101 - Project Management & Control	1,908	1,908	1,909		1.00	-1	1.00	1,969
	8102 - NCSX MIE Management ORNL	234	234	241		1.00	-8	.97	242
	8998 - Allocations	693	693	692	0	1.00	1	1.00	724
<b>82 Project Engineering</b>		<b>2,841</b>	<b>2,840</b>	<b>2,812</b>	<b>0</b>	<b>1.00</b>	<b>28</b>	<b>1.01</b>	<b>2,943</b>
	8202 - Engr Mgmt & Sys Eng Support	1,580	1,580	1,575	0	1.00	4	1.00	1,634
	8203 - Design Integration	709	709	677	0	1.00	31	1.05	722
	8204 - Systems Analysis	468	467	476	0	1.00	-8	.98	490
	8205 - Dimensional Control Coord.	84	84	84	0	1.00	1	1.01	97
<b>84 Project Physics</b>		<b>470</b>	<b>470</b>	<b>470</b>		<b>1.00</b>	<b>0</b>	<b>1.00</b>	<b>470</b>
<i>CLOSED</i>	<b>8401 - Project Phycis</b>	<b>324</b>	<b>324</b>	<b>324</b>		<b>1.00</b>	<b>1</b>	<b>1.00</b>	<b>324</b>
<i>CLOSED</i>	<b>8402 - Project Physics MIE ORNL</b>	<b>146</b>	<b>146</b>	<b>146</b>		<b>1.00</b>	<b>-1</b>	<b>1.00</b>	<b>146</b>
	<b>85 - Integrated Systems Testing</b>								-
<b>Subtotal</b>		<b>36,914</b>	<b>35,480</b>	<b>36,416</b>	<b>-1,434</b>	<b>.96</b>	<b>-935</b>	<b>.97</b>	<b>38,944</b>
<b>Contingency/Management Reserve</b>									<b>2,299</b>
<b>DCMA QA Inspection services</b>									<b>75</b>
<b>TOTAL PROJECT</b>									<b>41,318</b>
	(1) Reflects accrual reduction of \$610k based on MTM's June earned value report								
	(2) Reflects accrual increase of \$611.295k based on EIO's June earned value report								