

| ECP53 compared to ECP52 | | TOTAL | FY2003 | FY2004 | FY2005 | FY2006 | FY2007 | FY2008 | FY2009 | |
|---|--|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|--|
| WBS 12 Vacuum Vessel | | (12) | - | - | - | - | (27) | 15 | - | |
| 1201 - Job: 1201 - Vacuum Vessel Prelim Dsn-**CLOSED** | | - | - | - | - | - | - | - | - | |
| 1202 - Job: 1202 - Vacuum Vessel R&D **CLOSED** | | - | - | - | - | - | - | - | - | |
| 1203 - Job: 1203 - Vacuum Vessel Final Dsn**CLOSED** | | - | - | - | - | - | - | - | - | |
| 1204 - Job: 1204 - VV Sys Procurements (nonVVSA)-DUDEK | | (12) | - | - | - | - | (27) | 15 | - | |
| 1206 - Job: 1206 - VV Field Weld Joint R&D**CLOSED** | | - | - | - | - | - | - | - | - | |
| 1250 - Job: 1250 - Vacuum Vessel Fabrication**CLOSED** | | - | - | - | - | - | - | - | - | |
| WBS 13 Conventional coils | | (64) | - | - | (1) | (4) | (330) | 270 | - | |
| 1301 - Job: 1301 - TF Design-KALISH**CLOSED** | | - | - | - | - | - | - | - | - | |
| 1302 - Job: 1302 - PF Design -KALISH | | 19 | - | - | (1) | 1 | (29) | 48 | - | |
| 1303 - Job: 1303 - Central Solenoid Sprt Dsn-DAHLGREN | | - | - | - | - | - | - | - | - | |
| 1350 - Job: 1350 - TF Fab Prep-CHRZANOWSKI**CLOSED** | | - | - | - | - | - | - | - | - | |
| 1351 - Job: 1351 - TF Coil Fabr Supplies-KALISH | | (0) | - | - | - | - | (0) | - | - | |
| 1352 - Job: 1352 - PF Coil Procurement-KALISH | | (79) | - | - | - | - | (276) | 198 | - | Reduction in MHX exclusion rate |
| 1353 - Job: 1353 - CS Structure Procurement-DAHLGREN | | 3 | - | - | - | - | (33) | 36 | - | |
| 1354 - Job: 1354 - Trim Coil Design &Procurement-KALISH | | 2 | - | - | - | - | - | 2 | - | |
| 1355 - Job: 1355 - WBS 13 I&C Proc and Coil Assy-KALISH | | (2) | - | - | - | - | - | (2) | - | |
| 1361 - Job: 1361 - TF Fabrication-KALISH | | (8) | - | - | (0) | (5) | 9 | (12) | - | |
| WBS 14 Modular coils | | 2,182 | - | (1) | - | (17) | 2,006 | 195 | - | |
| 1401 - Job: 1401 - Mod Coil Prel.Dsn**CLOSED** | | - | - | - | - | - | - | - | - | |
| 1402 - Job: 1402 - Mod.Coil Analyses**CLOSED** | | - | - | - | - | - | - | - | - | |
| 1403 - Job: 1403 - Modular Coil Final Design-WILLIAMSON | | - | - | - | - | - | - | - | - | |
| 1404 - Job: 1404 - MCWF R&D 1st Prod Casting**CLOSED** | | - | - | - | - | - | - | - | - | |
| 1405 - Job: 1405 - Mod Coil Winding R&D Prep-**CLOSED** | | - | - | - | - | - | - | - | - | |
| 1406 - Job: 1406 - Mod. Coil Winding R&D-**CLOSED** | | - | - | - | - | - | - | - | - | |
| 1407 - Job: 1407 - Mod Coil Winding Facility-**CLOSED** | | (1) | - | (1) | - | - | - | - | - | |
| 1408 - Job: 1408 - MC Winding Supplies-CHRZANOWSKI | | 312 | - | - | - | (5) | 317 | (0) | - | FBG gages \$28k, misc consumables plus tech shop machining/fabr support \$78k, Thermocouple/I&C increase \$27, rates decrease-\$16 |
| 1409 - Job: 1409 - Coil Test Stand-GETTELFINGER**CLOSED** | | 0 | - | 0 | - | - | - | - | - | |
| 1410 - Job: 1410 - MC Twisted Racetrack Fabr-**CLOSED** | | - | - | - | - | - | - | - | - | |
| 1411 - Job: 1411 - MCWF Fabr. S005242-HEITZENROEDER | | - | - | - | - | - | - | - | - | |
| 1412 - Job: 1412 - Complete Winding Facilities-*CLOSED* | | - | - | - | - | - | - | - | - | |
| 1413 - Job: 1413 - MCWF Fracture Analysis-**CLOSED** | | - | - | - | - | - | - | - | - | |
| 1414 - Job: 1414 - Coil Testing-Gettelfinger**CLOSED** | | 0 | - | - | - | 0 | - | - | - | |
| 1415 - Job: 1415 - Dim Cntrl Test-RAFTOPOLOUS**CLOSED** | | - | - | - | - | - | - | - | - | |
| 1416 - Job: 1416 - Mod Coil Type AB Fnl Dsn-WILLIAMSON | | 96 | - | - | - | (1) | 95 | 2 | - | Clamp mods \$16k, Batt insulation development/materials \$30, Top level assy dwgs \$50 |
| 1419 - Job: 1419 - Winding Fac. Mods-CHRZANOWSKI*CLSD* | | - | - | - | - | - | - | - | - | |
| 1421 - Job: 1421 - Mod Coil Interface Design-WILLIAMSON | | 1,022 | - | - | - | (2) | 1,245 | - | - | Total increase = \$1,022k. \$461 hardware, COF tests (gettelfinger) \$150, Joint Design, development and testing \$438 |
| 1429 - Job: 1429 - MC Interface R&D-GETTELFINGER | | - | - | - | - | - | 368 | 110 | - | |
| 1431 - Job: 1431 - Mod. Coil Interface Hardware | | - | - | - | - | - | (699) | - | - | |
| 1451 - Job: 1451 - Mod Coil Winding-CHRZANOWSKI | | 543 | - | - | - | (10) | 486 | 67 | - | Full funding of baseline estimates plus increase in recognition of cost variances, shop support, overtime etc. |
| 1459 - Job: 1459 - Mod Coil Fabr.Punch List-CHRZANOWSKI | | 212 | - | - | - | 0 | 196 | 16 | - | +179 add'l holes in castings |
| 1460 - Job: 1460 - 3rd Winding Fixture-CHRZANOWSKI | | (3) | - | - | - | - | (3) | - | - | |
| WBS 15 Coil Structures | | (272) | - | - | - | (1) | (358) | 87 | - | |
| 1501 - Job: 1501 - Coil Structures Design-DAHLGREN | | 130 | - | - | - | (1) | 131 | - | - | Re-estimated Design effort |
| 1550 - Job: 1550 - Coil Struct. Procurement -DAHLGREN | | (402) | - | - | - | - | (490) | 87 | - | Elimination of stand-alone structure replaced by "hang-on-MCWF" concept. |
| WBS 16 Coil Services | | 5 | - | - | - | - | (151) | 165 | (9) | |
| 1601 - Job: 1601 - Coil Services Design-WILLIAMSON | | 5 | - | - | - | - | (151) | 165 | (9) | |
| WBS 17 Cryostat and Base support structure | | 15 | - | - | - | (5) | 34 | (33) | 18 | |
| 1701 - Job: 1701 - Cryostat Design-GETTELFINGER | | (105) | - | - | - | (54) | (48) | (3) | - | Base support job splitout from 1701 |
| 1702 - Job: 1702 - Base Support Struct Design-DAHLGREN | | 133 | - | - | - | 49 | 84 | - | - | |
| 1751 - Job: 1751 - Cryostat Procurement-GETTELFINGER | | (12) | - | - | - | - | - | (30) | 18 | |
| 1752 - Job: 1752 - Base Support Proc-DAHLGREN | | (1) | - | - | - | - | (2) | 1 | - | |
| WBS 18 Field Period Assembly | | (177) | - | - | - | (5) | (252) | 92 | (12) | |
| 1801 - Job: 1801 - Field Period Assy-CHRZANOWSKI (ORNL) | | - | - | - | - | - | - | - | - | |
| 1802 - Job: 1802 - FP Assy Oversight&Support-VIOLA | | 102 | - | - | - | - | 120 | (18) | - | Metrology support in fy07 (raftopolous) |
| 1804 - Job: 1804 - Metrology Hardware-RAFTOPOULOS | | (23) | - | - | - | - | (0) | (12) | (12) | Scope reclassified as indirect cost. |
| 1803 - Job: 1803 - FP Assy Tooling/Constrbty-BROWN | | (176) | - | - | - | (3) | (172) | - | - | Elimination of station 4(TF pre-assy) plus re-estimate of station 3 and 5 design |
| 1805 - Job: 1805 - FP Assy H/W&Fixture Prcmnts-DUDEK | | (112) | - | - | - | - | (112) | (0) | - | Elimination of station 4 fixture (TF pre-assy)Utilizing MTM's fixture for station 2 instead of new fabrication. |
| 1806 - Job: 1806 - FP Assembly specs and drawings-COLE | | 11 | - | - | - | (0) | 11 | - | - | |
| 1810 - Job: 1810 - Field Period Assembly-VIOLA | | 22 | - | - | - | (2) | (98) | 122 | - | Station 2 trials/development+\$102, rates -\$80 |
| WBS 19 Stellarator core management & integration | | 5 | - | - | - | - | 17 | (8) | (5) | |
| 1901 - Job: 1901 - Stellarator Core Mngt&Integr-COLE | | 5 | - | - | - | - | 17 | (8) | (5) | |
| WBS 2 Plasma heating, fueling and Vac sys | | (2) | - | 3 | - | - | - | (5) | - | |
| 2001 - Job: 2001 - VPS Gas& Cond Syst.-BLANCHARD | | - | - | - | - | - | - | - | - | |
| 2101 - Job: 2101 - Fueling Systems-BLAMCHARD | | (2) | - | - | - | - | - | (2) | - | |
| 2201 - Job: 2201 - Vacuum Pumping Systems-BLANCHARD | | (3) | - | - | - | - | - | (3) | - | |
| 2501 - Job: 2501 - Neutral Beam Refurbishment-STEVENSON | | 3 | - | 3 | - | - | - | - | - | |
| WBS 3 Diagnostics | | (0) | - | - | - | (1) | 2 | (1) | - | |
| 3101 - Job: 3101 - Magnetic Diagnostics-STRATTON | | (9) | - | - | - | (1) | (8) | (1) | - | |
| 3601 - Job: 3601 - Edge Divertor Diagnostics-STRATTON | | (0) | - | - | - | - | - | (0) | - | |
| 3801 - Job: 3801 - Electron Beam Mapping-STRATTON | | (0) | - | - | - | - | - | (0) | - | |
| 3901 - Job: 3901 - Diagnostics sys Integration-STRATTON | | 9 | - | - | - | - | 9 | - | - | |
| WBS 4 Electrical Power Systems | | (338) | - | - | 0 | (16) | 7 | (332) | 3 | |
| 4101 - Job: 4101 - AC Power-RAMAKRISHNAN | | (118) | - | - | 0 | (16) | - | (103) | - | Auxiliary AC power scope reclassified as GPP cost. |
| 4301 - Job: 4301 - DC Systems-RAMAKRISHNAN | | 3 | - | - | - | - | - | 3 | - | |
| 4401 - Job: 4401 - Control & Protection-RAMAKRISHNAN | | (54) | - | - | - | - | - | (57) | 3 | Reviewed the scope of work based on more manual overrides. |
| 4501 - Job: 4501 - Power Sys Dsn & Integr-RAMAKRISHNAN | | (168) | - | - | - | - | 7 | (175) | - | The Scope Was Reduced – Keeping Minimum Electr Support/Load Needs For Wbs3(Diagnostics) For First Plasma: |
| 4601 - Job: 4601 - FCPC Bldg Mods-RAMAKRISHNAN | | - | - | - | - | - | - | - | - | |
| WBS 5 Central I&C | | (16) | - | - | - | 0 | - | (16) | (1) | |
| 5101 - Job: 5101 - TCP/IP Infrastructure Systems-SICHTA | | (1) | - | - | - | - | - | (1) | - | |
| 5201 - Job: 5201 - I&C Systems-SICHTA | | (3) | - | - | - | - | - | (3) | (0) | |
| 5301 - Job: 5301 - Data Acquisition-SICHTA | | (3) | - | - | - | - | - | (3) | - | |
| 5401 - Job: 5401 - Facility Timing & Synchron.-SICHTA | | (3) | - | - | - | - | - | (3) | - | |
| 5501 - Job: 5501 - Real Time Control System-SICHTA | | (3) | - | - | - | - | - | (3) | (0) | |

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|--|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|--|
| 5601 - Job: 5601 - Central Safety Interlock Syst-SICHTA | (4) | - | - | - | - | - | (4) | - | |
| 5801 - Job: 5801 - Central I&C Integr& Oversight-SICHTA | (0) | - | - | - | 0 | - | (0) | - | |
| WBS 6 Facility Systems | 156 | | | | | 19 | 137 | | |
| 6101 - Job: 6101 - Water Systems-DUDEK | (0) | - | - | - | - | - | (0) | - | |
| 6163 - Job: 6163 - Facility Systems Support FY04-DUDEK | - | - | - | - | - | - | - | - | |
| 6200 - Job: 6200 - Cryost Cooling Conc Dsn-GETTELFINGER | 175 | - | - | - | - | 19 | 155 | - | Determination and demonstration of cool down requirements. |
| 6201 - Job: 6201 - Cryogenic Systems-DUDEK | (14) | - | - | - | - | - | (14) | - | |
| 6301 - Job: 6301 - Utility Systems-DUDEK | (4) | - | - | - | - | - | (4) | - | |
| 6501 - Job: 6501 - Facility Systems Integration-DUDEK | - | - | - | - | - | - | - | - | |
| WBS 7 Test cell prep & machine assy | (89) | | | 2 | 0 | (11) | (349) | 269 | |
| 7101 - Job: 7101 - Shield Wall Modif Design-PERRY | - | - | - | - | - | - | - | - | |
| 7301 - Job: 7301 - Platform Design & Fab-PERRY | (1) | - | - | - | - | - | (1) | - | |
| 7401 - Job: 7401 - TC Prep & Mach Assy Planning-PERRY | (49) | - | - | 2 | 0 | (11) | (25) | (16) | Auxiliary AC power scope reclassified as GPP cost. |
| 7501 - Job: 7501 - Construction Support Crew-PERRY | (14) | - | - | - | - | - | (80) | 66 | |
| 7503 - Job: 7503 - Machine Assembly (station 6)-PERRY | (23) | - | - | - | - | - | (241) | 218 | |
| 7601 - Job: 7601 - Tooling Design & Fabrication-PERRY | (2) | - | - | - | - | - | (2) | (0) | |
| WBS 8 Project oversight & support | (686) | | (5) | (1) | (5) | (525) | (117) | (34) | |
| 8101 - Job: 8101 - Project Management & Control-NEILSON | (196) | - | - | - | - | (89) | (107) | (1) | Re-allocated management cost consistent with needs on other NCSX department projects |
| 8102 - Job: 8102 - NCSX MIE Management ORNL-LYON | 1 | - | - | - | (0) | 2 | (1) | - | |
| 8202 - Job: 8202 - Engr Mgmt & Sys Eng Support-REIERSEN | 11 | - | - | (1) | (4) | 22 | 4 | (10) | Rebaselining support added (simmons) |
| 8203 - Job: 8203 - Design Integration-BROWN | 61 | - | - | - | - | 61 | - | - | Re-estimated need for morris and brown. |
| 8204 - Job: 8204 - Systems Analysis-BROOKS | 4 | - | - | - | - | 4 | - | - | |
| 8205 - Job: 8205 - Dimensional Control Coordin-REIERSEN | 65 | - | - | - | - | 64 | 1 | - | Dimnesional control coordinator added for FY07 (ellis) |
| 8206 - Job: 8206 - FY07 Rebaseling tasks | 40 | - | - | - | - | 40 | - | - | Allowance for non budgeted wbs managers to support the rebaselining effort in FY07. |
| 8401 - Job: 8401 - Project Physcis-ZARNSTORFF | - | - | - | - | - | - | - | - | |
| 8402 - Job: 8402 - Project Physics MIE ORNL-LYON | - | - | - | - | - | - | - | - | |
| 8501 - Job: 8501 - Integrated Systems Testing-GENTILE | (36) | - | - | - | - | - | (14) | (23) | |
| 8998 - Job: 8998 - Allocations/Rate adj/misc credits-STRYKOW | (636) | - | (5) | - | - | (629) | (2) | - | |
| | 688 | - | (3) | 1 | (53) | 432 | 99 | 230 | |
| | 688 | - | (3) | 1 | (53) | 432 | 99 | 230 | |
| DCMA | | | | | | | | | |
| Contingency drawdown | (688) | | | | | (542) | (145) | (1) | |