

NCSX June 2007 ETC  
TABLE II - Materials and Subcontracts

WBS Number: 186									
WBS Title: Tooling Design & Fabrication									
Job Numbers: 1803 & 1805									
Job Titles: FPA Tooling & Constructibility (1803)									
Job Titles: FPA Hardware & Fixture Procurement (1805)									
Job Manager: Tom Brown									
Materials and Subcontracts (M&S)									
Job 1803 - NONE									
Job 1805									
PPPL Shop Rate for EMTB (\$/hr) = 81									
NEED TO HAVE BAIS OF ESTIMATE FOR BELOW ITEMS									
Unit									
Weight \$ per Unit Total Equiv Shop									
Description (lbs) Lb Cost (\$) Qnty Cost (\$) Comments hrs Basis of Estimate									
Stage 2 - Assy Fixture Cost (Existing Design)									
Estimate is for two Stage 2 units									
20 Degree Wedge Fixture 11,600 4 46,400 2 \$92,800 Weldment plus some machinings 1,146 29 wks Based on actual weight of existing fixtures and previous experience on similar tasks									
Stage 3 - MC Assembly Fixture Cost									
Estimate is for one Stage 3 unit									
Rt side laser screen weldment (new parts) 300 4 1,200 2 \$2,400 30 Based on current status of CADD Models - previous input from vendors on similar tasks - dwgs completed.									
Reworked left side laser screen weldment 2 2 \$1,944 Assumes 3 days of shop time 24 Based on previous experience on similar tasks									
Test cell hook adaptor plate 300 7 2,100 1 \$2,100 26 Based on previous experience on similar tasks - HOWEVER, interface has changes => need new estimate.									
SISSCO 3 Actuator Lift System \$0 Cost included in Mike Viola's WBS									
MC I-beam upper support at Type-A 579 4 2,316 1 \$2,316 weldment plus some machined structure Based on CADD model data and previous experience on similar tasks									
MC upper support at Type-C - inboard 160 4 640 1 \$640 weldment plus some machined structure Based on CADD model data and previous experience on similar tasks									
MC upper support at Type-C - outbd 60 7 420 3 \$1,260 weldment plus some machining Based on CADD model data and previous experience on similar tasks									
MC base support system (left / rt side) 2,938 4 11,752 1 \$11,752 weldment plus some machined structure 145 Based on CADD model data and previous experience on similar tasks									
VV support system 1,411 4 5,644 1 \$5,644 weldment plus some machined structure 70 Based on CADD model data and previous experience on similar tasks									
Hilman roller - 8-OT plus R & U guides 960 8 \$7,600 Based on Hilman phone quote Phone quote from Vendor - in 2006									
AirLoc Wedgmount Precision Levelers 315 6 \$1,890 Based on phone quote Phone quote from Vendor - start of 2007									
Bushnell Laser Boresighter \$245 Internet price (one spare included)									
Flange bolt access platform \$0 Shop supplied (included in Viola's estimate) 0									
Hardware & Misc items \$1,000									
Misc assembly Cost \$8,100 Assumes 2.5 wk shop hour: 100									
\$46,891 394 9.9 wks									
Stage 5 - Final FP Assembly Fixture Cost									
Estimate is for one Stage 5 units									
1 FPA base support system 1,500 4 6,000 1 \$6,000 This will be similar to Stage 3, without rollers 74 Based on CADD model data and previous experience on similar tasks									
2 AirLoc Wedgmount Precision Levelers 315 4 \$1,260 Based on phone quote Phone vendor prices off Internet - March 2007									
3 TF support structure 2,200 4 8,800 2 \$17,600 Structure weldment (estimated weight) 217 Based on CADD model data and previous experience on similar tasks									
4 Port 4 handling structure 500 4 2,000 1 \$2,000 Structure weldment (estimated weight) 25 Based on CADD model data and previous experience on similar tasks									
5 Hardware & Masc. items \$1,000									
6 Misc. assembly Cost \$8,100 Assumes 2.5 wk shop hour: 100.0									
\$35,960 each 416 10.4 wks									
\$71,920 need two									
Final Machine Assembly Fixture Costs									
Estimate for 3 FP's and 3 Spool Fixtures									
1 FPA base support system 4,000 4 16,000 3 \$48,000 Structure weldment (estimated weight) 593 Based on CADD model data and previous experience on similar tasks									
2 AirLoc Wedgmount Precision Levelers 315 12 \$3,780 Based on phone quote (assume 4 pt supt) Phone quote from Vendor - start of 2007									
3 Spool piece support system 1,000 4 4,000 3 \$12,000 Structure weldment (estimated weight) Based on CADD model data and previous experience on similar tasks									
4 Thomson linear motion components 1000 12 \$12,000 Estimate Rough estimate based on conceptual design									
5 FPA base motor driven linear screw system 3 Existing system already available									
6 Spool piece support linear screw system 1500 3 \$4,500 Nook screw system (no motor needed) Rough estimate based on previous experience - 2006									
7 Hardware & Masc. items \$3,000									
8 Misc. assembly Cost \$16,200 Assumes 5 wk shop hours: 200									
\$99,480 793 19.8 wks									
TOTAL M&S									
\$311,091 with add'l wedges									
\$218,291 without add'l wedge									