

**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 BAI OF ESTIMATE FOR BELOW ITEMS										
	Unit									
	Weight	\$ per	Unit		Total		Equiv Shop			
	(lbs)	Lb	Cost (\$)	Qty	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	\$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			950	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			34.97	7	\$245	Internet price (one spare included)				
Flange bolt access platform					\$0	Shop supplied (included in Viola's estimate)	0			
Hardware & Misc items					\$1,000				Rough estimate based on previous experience on similar tasks,	
Misc assembly Cost					\$8,100	Assumes 2.5 wk shop hours	100		Based on previous experience on similar tasks	
					\$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				Rough estimate based on previous experience on similar tasks,
6	Misc. assembly Cost					\$8,100	Assumes 2.5 wk shop hours	100.0		Based on previous experience on similar tasks
					\$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	2,500	4	10,000	3	\$30,000	Structure weldment (estimated weight)	370		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				Rough estimate based on previous experience on similar tasks,
8	Misc. assembly Cost					\$16,200	Assumes 5 wk shop hours	200		Based on previous experience on similar tasks
					\$81,480		570	14.3 wks		