

**NCSX June 2007 ETC  
TABLE I - DESIGN LABOR**

<b>WBS Number: 43</b>									
<b>WBS Title: DC Systems</b>									
<b>Job Number: 4301</b>									
<b>Job Title: DC Systems</b>									
<b>Job Manager: Raki Ramkrishnan</b>									
<b>Description: This is a LOE effort for design intergration, interface definition, and oversight of diagnostic systems design, fabrication, and installation</b>									
Task Description	Activity	K\$		Labor Hours					Basis of Estimate
		M&S	Travel	EASM	ECEM	EEEM	EESM	EETB	(See Notes on Basis of Estimate Below)
Condition/spare parts inventory	431-200					8		6	
Organize & verify documentation	431-210			10		16		3	
Document status	431-215					16			
Reactivate DF & PEI units	431-225	\$8K				40		8	40
Dummy Load test	431-230	\$1K				32		8	40
Simulate each of 6 pwr loops in PSCAD	431-240					104			
c-site dc sys dsn documentation	431-250			240		180			
Redo power loop design	431-261			240		128			
Fabricate bus components	431-265	\$45K		40		16		40	120
Power cabling & Installation	431-275	\$140K		240		40		240	520
Maint of C-site rectifiers	431-276	\$5K						40	120
<b>Totals</b>		<b>\$199K</b>	<b>\$0K</b>	<b>770</b>	<b>0</b>	<b>580</b>		<b>345</b>	<b>840</b>
<b>Notes on the Basis of Estimate</b>									
<b>(1) Design and Fabrication/Installation</b>									
Estimate based on estensive experience of engineer performing similar tasks at PPPL and EBASCO - e.g. recent experience on NSTX. This is basically a job modifying existing PPPL systems and re-installing for NCSX. Design and engineering estimates developed based on assessments of the number of drawings needed (new or modified), the effort to reconfigure existing designs, interfaces with other systems, supervision of on-site contractors, and all necessary re-activation and pre-operational testing needed.									
<b>(2) M&amp;S</b>									
M&S estimated based on similar recent procurements and needed interfaces with installation contractors - this will be Davis-Bacon covered, except tor those activities within the Test Cell.									