

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

WBS Number: 41									
WBS Title: AC Power									
Job Number: 4101									
Job Title: AC Power									
Job Manager: Raki Ramkrishnan									
Description: This is a LOE effort for design intergration, interface definition, and oversight of diagnostic systems design, fabrication, and installation									
Task Description	Activity	K\$			Labor Hours				Basis of Estimate (See Basis of Estimate Notes Below)
		M&S	Travel	EASM	ECEM	EEEM	EESM	EETB	
WBS 411 - Auxiliary AC Power									
Prepare Preliminary One line diagram	4101-100.1			6		2	2	0	
Ex-Test cell AC pwr-Reactivate& new instl	411-1-100	\$5.0K		5		8	13	21	
Grounding-Dsn - minimum required for first plasma	411-2-2			160		72			
Grounding-Procure	411-2-4	\$10.0K							
Grounding-Install	411-2-6	\$17.5K		56		28		112	
Grounding-Commission	411-2-8			40		24		80	Needed prior to testing coils
Test Cell AC Power Distr-Dsn	411-3-2			16		8			Covered by PPPL Facilities as an Infrastructure cost - NOT PART OF MIE PROJECT
Test Cell AC Power Distr-Procure(equipment/materials)	411-3-4	\$10.0K							Covered by PPPL Facilities as an Infrastructure cost - NOT PART OF MIE PROJECT
Test Cell AC Power Distr-Install	411-3-6	\$35.0K		64		16	16	24	Covered by PPPL Facilities as an Infrastructure cost - NOT PART OF MIE PROJECT
Test Cell AC Power Distr-Commission	411-3-8					16	16	16	Covered by PPPL Facilities as an Infrastructure cost - NOT PART OF MIE PROJECT
Standby Power for Cryo Sys -Dsn	411-4-2								Not Applicable - not funded at this time
Standby Power for Cryo Sys -Procure	411-4-4								Not Applicable - not funded at this time
Standby Power for Cryo Sys -Install	411-4-6								Not Applicable - not funded at this time
WBS 412 - Experimental AC Power									
C-site Pulsed AC Power Distr-Dsn	412-1-2			16		16			
C-site Pulsed AC Power Distr-Procure	412-1-4	\$5.0K							
C-site Pulsed AC Power Distr-Install	412-1-6			8		8	16	80	
C-site Pulsed AC Power Distr-Commission	412-1-8					24	24	40	Needed prior to testing coils
Totals		\$82.5K	\$0	371	0	222	87	373	
Notes on the Basis of Estimate									
(1) Design and Fabrication/Installation									
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.									
(2) M&S									
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.									