NCSX June 2007 ETC
TABLE I - DESIGN LABOR

WBS Number: 38

WBS Title: Electron Beam Mapping

Job Number: 3801

Job Title: Electron Beam Mapping Systems

Job Manager: Brent Stratton

Description: E-beam mapping will be done with an electron gun and movable fluorescent wand borrowed from Auburn University. Will use same visible TV camera as in WBS 36. Need two port extensions for 10" diameter ports. Need data acquisition system to record wand position, electron gun bias voltage and emission current. Need control capability for wand, electron gun bias voltage and emission current..

	$		Labor Hours								Basis of Estimate
Task Description	M&S	Travel	EMEM	EMSM	EMTB	EEEM	EETB	EADM	ECEM	RM2	
Design System											
Design interface components - adapting flange sizes			120								Engineering judgement - however standard design used before
Physics-based modeling, work with Auburn personnel		$3,000								480	Engineering judgement - however standard design used before
Pepare drawings (~6 drawings)								80			Based on conceptual design and PPPL design experience
Design software for control & data acquisition for H/W									300		Engineering judgement - however standard design used before
Fabricate System (Including welding)											
Fabricating & Welding Spool Pieces					16		16				Engineering judgement - however standard design used before
Fabricating other parts					80						Engineering judgement - however standard design used before
Install System					240						Engineering judgement - however standard design used before
Engineering Oversight			40								
Materials											
Port Extensions Material/Parts	$4,000										Based on estimate provided by PPPL Construction Manager - see Table V
Data Acquisition Materials/Parts	$10,000										Based on estimate provided by PPPL Computer Division - see Table V
Rack	$28,600										Based on estimate provided by PPPL Electrical Engineer - see Table V
TOTAL	**$42,600**	**$3,000**	**160**	**0**	**336**	**0**	**16**	**80**	**300**	**480**	