NCSX June 2007 ETC
TABLE I - DESIGN LABOR

WBS Number: 132
WBS Title: PF Coils
Job Number: 1302
Job Title: PF Coil Design
Job Manager: Mike Kalish

Description:
Title I and II Engineering for PF Coils and Title III Support of Fabrication Effort.

Task ID		HOURS																		Basis of Estimate
		ORNL EM	ORNL DSN	EMEM	EMSM	EMSB	EMTB	EAEM	EADM	EASB	EEEM	EESM	EESB	EETB	ECEM	ECSB	ECTB	RM2	RM3	
Title I and II Design																				
	Complete PF Coil SRD							24												
	Update PF Analysis							160												Update analysis to reflect new coil structure, Examine stresses with fully anealed copper for lower manufacturing costs. Evaluate thermal stresses with new support structure Engineering judgment based on past analysis. 120hrs Analyst, 40hrs Eng
	Update PF Coil SDD							24												Past experience
	Complete PF4 PDR Model								80											Revise model to reflect changes and coplete lead area, based on experiance with past iterations of PF coil design
	Complete PF5 PDR Model								80											Revise model to reflect changes and coplete lead area, based on experiance with past iterations of PF coil design
	Complete PF6 PDR Model								80											Revise model to reflect changes and coplete lead area, based on experiance with past iterations of PF coil design
	Prepare for PDR - presentation materials Designer								36											12 hours per coil set
	Prepare for PDR - presentation materials Eng							52												Prepare presentation, Define interfaces and responses to design requirements
	PDR							16												Covers personel on job who attend review
	Prepare Review and Approve Conductor Spec							16												Past Experience - 1.5 days to write spec and 4hrs for revisions and approvals
	Prepare Review and Approve Coil Spec							48												Past Experience - 4 days to write spec and 2days for revisions and approvals
	Detail Drawings PF4								80											16hrs per drawing 5 drawings
	Disposition PDR Chits							24												Past experience
	Detail Drawings PF5								80											16hrs per drawing 5 drawings
	Detail Drawings PF6								80											16hrs per drawing 5 drawings
	Analysis Support							70												25% of analysis time to evaluate analysis and iterate design
	PDR Level Design Support							60												25% of design time for development of PDR Coil Models, Engineering Judgement
	Drawing Support								60											25% coverage for detailed drawing development
	PF Stress analysis with leads							120												Evaluate lead area including
	Prepare for FDR - presentation materials Designer								36											12 hours per coil
	Prepare for FDR - presentation materials Eng							52												Prepare presentation, Define interfaces and responses to design requirements
	PF FDR							16												Covers personel on job who attend review
	Resolve Chits							80												Resolve Design issues resluting from FDR, Based on past experience and engineering judgment
	Subtotal Title I & II Design	***0***	***0***	***0***	***0***	***0***	***0***	***762***	***612***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	
Title III																				
None - in Job 1352																				
	Subtotal Title III Design	**0**	**0**	**0**	**0**	**0**	**0**	**0**		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	