NCSX Work Approval Form (WAF) WBS Number: 73 WBS Title: Platform Design & Fabrication Job Number: 7301 Job Title: Platform Design & Fabrication Job Manager: Erik Perry Description: This WBS element consists of the activities associated with design and fabrication of the NCSX machine platform. This work scope encompasses the design and fabrication of a platform around the NCSX device, in support of various diagnostics and systems required for operation. It includes all platform material procurements. Schedule: See Attached Approvals: Job Manager Date Responsible Line Manager Date

Project Manager

Engineering Department Head

Date

Date

NCSX June 2007 ETC TABLE I - DESIGN LABOR

WBS Number: 73																		
WBS Title: Platform Design 8	ֆ Fab	ricatio	n															
Job Number: 7301																		
Job Title: Platform Design &	Fabri	cation	1															
Job Manager: Erik Perry																		
	<u></u>		1		,							, ,			, ,			
Description:																		
Title I and II Engineering for PF Coils and Title	e III Supp	port of Fa	bricatio	n Effort.														
		FY07	<u>\$K</u>								HOURS							
Task ID	41MS	48MS	37STK 35TRVL	31OT	ORNL EM	ORNL DSN	EMEM	EMSB	EMTB	EAEM	EAEM Dsn	EEEM	EESM	EETB	ECEM	ECTB RM2	RM3	Basis of Estimate
Already completed.																		
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NCSX June 2007 ETC TABLE II - Materials and Subcontracts

WBS Number: 73	
WBS Title: Platform Design & Fabrication	
Job Number: 7301	
Job Title: Platform Design & Fabrication	
Job Manager: Erik Perry	
Materials and Subcontracts (M&S)	Basis of Estimate
Materials and Subcontracts (M&S) Based on actual costs for NSTX platform which had the same design. See Table III.	Basis of Estimate
	Basis of Estimate
	Basis of Estimate

NCSX June 2007 ETC TABLE III - Fabrication/Assembly Installation

WBS Number: 73											
WBS Title: Platform Design & Fa	bricatio	n									
Job Number: 7301											
Job Title: Platform Design & Fal	rication										
Job Manager: Erik Perry											
	1	1		l							
In-house Fabrication and Assembly	and Insta	llation									
Job 7301 - Platform Design & Fabric	ation										Basis of Estimate
_		K\$			Hours			Duration in Shifts	Persons per Shift	Assumptions	
Description of Task	ACT	M&S	EAEM	Metrology	EMEM	EMSM	EMTB		J		
Platform nut plates	711A.040	\$0.1K					36				Based on NSTX Platform - same design
Platform Parts	712.020	\$3.0K			32	0	300				Based on NSTX Platform - same design
Survey and layout locations for platform posts					40	40	160	10	2		Based on NSTX Platform - same design
Misc Platform Hardware/Material	712.030	\$16.0K									Based on NSTX Platform - same design
Machine Platform Trial Assembly and Fit-up					48	240	960	20	6		Based on NSTX Platform - same design
Subtotal Job 7301		\$19.1K			120	280	1456				

NCSX June 2007 ETC TABLE IV - Uncertainty of Estimate and Residual Risk Assessment

IVVES IVIII	nber: 73												
	: Platform Design	an & Eabricat	tion										
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Job Numb													
	Platform Desig	n & Fabricati	on										
Job Mana	ger: Erik Perry												
Uncortainty	of the Estimate		T										
Oncertainty o	or the Estimate				Uncertainty								
		High	Medium	Low	Range (%)				Comments/O	ther Consid	derations		
Design M	Maturity	<u>i iigii</u>	Wediam	X		e extensive exne	rien	ce building	g and using special t			and deco	mmissionir
Design	natarity				-15%/+25%	O CALCITOTO CAP			g and doing opeoidi t		abilication	una acco	
Design C	Complexity			Х		ning exotic antic	ipate	ed.	1			1	1
Note: High/Med	lium/Low uncertainty ass	sessment from Job N	lanager. Unc	ertainty ran	nge based on AACEI	recommended _l	oract	ice 18R-97	as amended for NC	SX.			
			1					ı				ı	
Residual Impact	<u>ts</u>									0		Calaadada	lana a a t
					1.71 - 1.71 1 - 6					Cost I	mpact	Schedule	impact
1					I IKEIINAAA AT								
Job	Ris	sk Description			Likelihood of Occurring	Mitigation Plan		Bas	sis of estimate	Low	High	Low	High
Job	Ris	sk Description			Occurring Occurring	Mitigation Plan		Bas	sis of estimate	Low	High	Low	High
Job NONE	Ris	sk Description				Mitigation Plan		Bas	sis of estimate	Low	High	Low	High
	Ris	sk Description				Mitigation Plan		Bas	sis of estimate	Low	High	Low	High
	Ris	sk Description				Mitigation Plan		Ba	sis of estimate	Low	High	Low	High
NONE	Ris	sk Description				Mitigation Plan		Ba	sis of estimate	Low	High	Low	High
NONE Notes:					Occurring			Ba	sis of estimate	Low	High	Low	High
None Notes: [1] Low cost	t and schedule impacts a	are considered the m			Occurring pacts should the ev	vent occur.		Ba	sis of estimate	Low	High	Low	High
None Notes: [1] Low cost High cos	t and schedule impacts a	are considered the m	naximum (100	0-percentile	Occurring paper should the every impacts should the	rent occur.		Bas	sis of estimate	Low	High	Low	High
None Notes: [1] Low cost High cos [2] Cost imp	t and schedule impacts a st and schedule impacts a pacts should be entered a	are considered the m are considered the m as man-hours (by de	naximum (100 mographic) a	0-percentile and M&S di	Occurring npacts should the every impacts should the every impacts should the every cost under basis	rent occur.		Bas	sis of estimate	Low	High	Low	High
None Notes: [1] Low cost High cos [2] Cost imp Cost imp	t and schedule impacts a st and schedule impacts pacts should be entered a pacts should NOT include	are considered the m are considered the m as man-hours (by de e standing army cost	naximum (100 mographic) a ts which are	0-percentile and M&S dir separately	npacts should the every impacts should the rect cost under basis calculated from the s	rent occur. e event occur s of estimate. schedule impact			sis of estimate	Low	High	Low	High
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Notes: [1] Low cost High cos [2] Cost imp Cost imp Project c [3] The sche If there is [4] Likelihoo	t and schedule impacts a st and schedule impacts a pacts should be entered a pacts should NOT include control is reponsible for c edule impacts should be s no critical path impact and of occurrence should	are considered the mare considered the mas man-hours (by detention of the standing army cost quantifying the low a entered as the min at then the schedule entered consister	naximum (100 mographic) a is which are nd high cost and max impa ntries should nt with our ri	0-percentile and M&S dii separately of impacts ba acts on the be zero. sk classific	npacts should the every impacts should the every impacts should the rect cost under basis calculated from the sased on the labor horizontal path.	eent occur. e event occur s of estimate. schedule impact urs and M&S ide	entific	ed		Low	High	Low	High
Notes: [1] Low cost High cos [2] Cost imp Cost imp Project c [3] The sche If there is [4] Likelihoo	t and schedule impacts a st and schedule impacts a pacts should be entered a pacts should NOT include control is reponsible for c edule impacts should be s no critical path impact	are considered the mare considered the mas man-hours (by detention of the standing army cost quantifying the low a entered as the min at then the schedule entered consister	naximum (100 mographic) a is which are nd high cost and max impa ntries should nt with our ri	0-percentile and M&S dii separately of impacts ba acts on the be zero. sk classific	npacts should the every impacts should the every impacts should the rect cost under basis calculated from the sased on the labor horizontal path.	eent occur. e event occur s of estimate. schedule impact urs and M&S ide	entific	ed		Low	High	Low	High
Notes: [1] Low cost High cos [2] Cost imp Cost imp Project c [3] The sche If there is [4] Likelihoo	t and schedule impacts a st and schedule impacts a pacts should be entered a pacts should NOT include control is reponsible for c edule impacts should be s no critical path impact and of occurrence should	are considered the mare considered the mas man-hours (by detention of the standing army cost quantifying the low a entered as the min at then the schedule entered consister	naximum (100 mographic) a is which are nd high cost and max impa ntries should nt with our ri	0-percentile and M&S dii separately of impacts ba acts on the be zero. sk classific	npacts should the every impacts should the every impacts should the rect cost under basis calculated from the sased on the labor horizontal path.	eent occur. e event occur s of estimate. schedule impact urs and M&S ide	entific	ed		Low	High	Low	High

Activity ID	MILE- Activity stones Description (level 2	Duration (work days	Baseline Start	Baseline Finish	Shifts	Total Float	% cmplt	Proposed Budgeted	FY07	FY08	FY09	FY10	FY11	FY1
	(REVEL 2 & 3)	uays												
73 - Platf	orm Design & Fabrication													
	Platform Design & Fab-PERRY													
100. 7301 -	Flationii Design & Fab-FERRI													
711A.040	Platform nut plates	30	02OCT08	12NOV08		16		2,976.68			■EM//TB =36	hr ; 41=00\$k ;		
712.020	Platform Parts	30	02OCT08	12NOV08		16		34,225.00			■EM//EM =32 EM//TB =30	hr; 41=03\$k; Ohr;		
712.030	Miscs Hardware/Material	40	18SEP08	12NOV08		16		22,031.60			4 1=16\$k;			
7301-100	Survey & layout locations for platform posts	10	30OCT08	12NOV08		16		25,252.80			IEM//EM =40 EM//TB =16)hr ; EM//SM =4 0hr ;	10hr ;	
	Machine platform trial assembly & fitup	30	13NOV08*	06JAN09		16		119,740.80				48hr ; EM//SM 960hr ;	=240hr ;	
7301-102														