NCSX Work Approval Form (WAF)

WBS Number: 55
WBS Title: Real Time Plasma and Power Supply Control Systems
Job Number: 5501
Job Title: Real Time Plasma and Power Supply Control Systems
Job Manager: Paul Sichta

Description:

The real time software is divided into two functions, the power supply real time control system (PSRTC) and the plasma control system (PCS). The PSRTC will calculate the alpha control signal required by the power conversion firing generators. The basic code of the NSTX PSRTC will be modified for use on NCSX. The NCSX PCS will share that developed for NSTX with a new real time data acquisition system in the NCSX test cell.

Schedule:

See Attached

Approvals:

_____   _____
Job Manager   Date

_____   _____
Responsible Line Manager   Date

_____   _____
Project Manager   Date

_____   _____
Engineering Department Head   Date

NCSX June 2007 ETC
TABLE I - DESIGN LABOR

WBS Number: 55
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Job Manager: Paul Sichta

Description:
Title I and

Activity ID	Activity Description	41MS	43MS/CC	48MS	37STK	35TRVL	ECEM	ECTB	EMTB	EASB	EEEM	EETB	Basis of Estimate
						FY07$K							
												Originally manhours estimate based on NSTX experience. However, this estimate has been updated to reflect experience of experieince on other similar networking installation projects.
55-10	FCPC - Preliminary Design						40						
55-20	FCPC -Final Design						80						
55-30	FCPC - Procurement	$6.0K	$7.0K		$1.0K		20						
55-40	LabVIEW Programming						120						
55-50	FCPC PLC Integration - EPICS Prog.						40						
55-50	FCPC - Installation						40	40					
55-60	FCPC -Test						40	20					
55-70	GISRTC - Preliminary Design						40						
55-80	GISRTC -Final Design						20						
55-90	GISRTC - Procurement	$5.0K	$5.5K		$1.0K		20						
55-100	LabVIEW Programming						120						
55-110	GISRTC - Installation						20	20		24			
55-120	GISRTC -Test						20						
	Subtotal Job 5501	*$11K*	*$13K*	*$0K*	*$2K*	*$0.0K*	*620*	*80*	*0*	*24*	*0*	*0*	

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Materials and Subcontracts (M&S)						**Basis of Estimate**	
Description:							
See Table I							

WBS Number: 55											
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In-house Fabrication and Assembly and Installation											
See Table I											

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

WBS Number: 55
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Uncertainty of the Estimate

	High	Medium	Low	Uncertainty Range (%)	Comments/Other Considerations
Design Maturity		X			Although PDR, some more design needed to finalize.
				-10%/+15%	
Design Complexity			X		Duplication of NSTX architecture

Note: High/Medium/Low uncertainty assessment from Job Manager. Uncertainty range based on AACEI recommended practice 18R-97 as amended for NCSX.

Residual Impacts

					Cost Impact		Schedule Impact	
Job	Risk Description	Likelihood of Occurring	Mitigation Plan	Basis of estimate	Low	High	Low	High
NONE								

Notes:
[1]	Low cost and schedule impacts are considered the minimum (0-percentile) impacts should the event occur.
	High cost and schedule impacts are considered the maximum (100-percentile) impacts should the event occur
[2]	Cost impacts should be entered as man-hours (by demographic) and M&S direct cost under basis of estimate.
	Cost impacts should NOT include standing army costs which are separately calculated from the schedule impact
	Project control is reponsible for quantifying the low and high cost impacts based on the labor hours and M&S identified
[3]	The schedule impacts should be entered as the min and max impacts on the critical path.
	If there is no critical path impact then the schedule entries should be zero.
[4]	Likelihood of occurrence should be entered consistent with our risk classification methodology, i.e.
	VL= Very Likely (P>80%), L=Likely (80%>P>40%), U=Unlikley (40%>P>10%), VU=Very Unlikely (P<10%), NC=Non-credible (P<1%