NBI Power System (all Values in K$'s unless noted otherwise)

Cost Center:	1180	JOB NO 2470 CD2 R1 from oz 030711 updated 04111 for FDR																								
Job Number:	2470																									
Job Title:	NBI Power Systems																									
Job Manager:	S. Ramakrishnan																									
NSTX NB2 Power System 060710 decontamination included											M&S						Design/ Procurement		Installation				Commissioning			Line Total
						Mult	Qty	excl factor	Qnty	Units	Qty	Units	Unit Cost (k$/unit)	Cost ($K)	Spare Units	Spare Cost ($K)	EEEM (md)	DM (md)	EEEM (md)	EESM (md)	EETB (md)	SC ($K)	EEEM (md)	EESM (md)	EETB (md)	($K)
21- AC Auxiliaries	**$244.085**	$244.1																								
		$244.1	$244.1																							
	211 - AC Aux		*PPs,etc.*			*1*		*1*			*1*	*lot*	*$20.00*	*$20.00*		*1*	*12*	*30*	*5*	*5*	*50*	*$25*	*1*	*2*	*2*	$150
	212 - Grounding		*Misc. grounding*			*1*		*1*			*1*	*lot*	*$10.00*	*$10.00*			*5*	*20*	*3*	*2*	*40*	*$15*	*1*	*2*	*2*	$94
22 - Reactivation	**$253.918**	$253.9																								
	Reactivation of Equipment	$253.9	$253.9			1		1																		
			Switchyard	*Maintenance*	*Reactivation*	*1*		*1*			*3*		*$2.00*	*$6.00*	*1.000*	*2.000*	*1*	*1*					*5*	*10*	*45*	$58
			Surge Room	*Maintenance*	*Reactivation*	*1*		*1*			*3*		*$3.00*	*$9.00*	*1.000*	*3.000*	*1*	*1*		*10*	*24*		*5*	***15***	***30***	$86
			Mod-Reg	*Maintenance*	*Reactivation*	*1*		*1*			*3*		*$1.50*	*$4.50*	*1.000*	*1.500*	*1*	*1*					*5*	*10*	*20*	$40
			Arc/Filament/Magnet	*Maintenance*	*Reactivation*	*1*		*1*			*3*		*$1.00*	*$3.00*	*1.000*	*1.000*	*1*	*1*					*5*	*6*	*18*	$32
			LCC	*Maintenance*	*Reactivation*	*1*		*1*			*3*		*$1.00*	*$3.00*	*1.000*	*1.000*	*1*	*1*					*5*	*10*	*20*	$38
24 - Cabling	**$2,295.446**	$2,295.4																								
		$2,295.4	$2,295.4																							
		Penetrations	Misc			1		1	5		5		$1.00	$5.00			1	5	1	4	8	$15				$42
		Removing cabling	Misc			1		1									5	15	1	5	15		2	2	5	$46
		*4/C-500mcm Arc/ Fil. cables **	*Six (6) Cables*			***1***		***1***	***3***		***1800***	***ft***	***0.055***	***$297.00***			***5***	***15***	***2***	***30***	***15***		***2***	***2***	***5***	***$442***
		*4/C- 500 mcm Magnet cables**	*Three (3) Cables*			*1*		*1*	*3*		*900*	*ft*	***0.055***	*$148.50*			*5*	*15*	*2*	*30*	*15*		*2*	*2*	*5*	*$260*
		HVDC Triax cables**	Three (3) Cables			1		1	3		330	ft	*$0.12*	*$113.85*			5	15	2	30	15	$5	10	10	20	$255
		HVDC Triax cables terminations	Six (6) terminations			1		1	1		6	unit	$5.00	$30.00			5	15	2	10	15	$20	10	10	20	$146
		4-C #8 ,208V Cables for NB *	Three (3) Cables			1		1	3		900	ft	$0.01	$27.00			5	15	2	10	15		2	2	5	$87
		RG 218U Decel Cables*	Three (3) cables			1		1	3		550	ft	$0.01	$9.90			5	15	2	10	15		2	2	5	$66
		8 channel Fiber Cables	Eighteen (18) Cables			1		1						$10.00			5	15	2	40	40		2	2	5	$119
		Fiber Cables	Prototype test of fusion splices			1		1						$0.30			1	1	1	5	5		1	1	2	$17
		decontamination effort on TFTR east wall surface	1 lot			1		1						$3.00			1			40	40		1	2	2	$84
		Raceways/ installation/pulling/termintation	1 lot			1		1						$30.00			5	15	2	40	40	$480	2	2	5	$732
25 - Transmission Line	**$116.958**	$117.0																								
		$117.0	$117.0																							
			Install transmission line			1		1			3		$3.00	$9.00			3	15	2	15	25	$35	2	2	4	$117
28- System Design and Integration	**$347.283**	$347.3																								
		$232.8	$232.8																							
			Design Drawings & Drawings changes , as-builts	New drawings & Misc. updates		1		1									30.00	40.00								$77
			CDR Power system	power system		1		1									5.00	5.00								$11
			PDR Power system	power system		1		1									5.00	5.00								$11
			FDR Cabling	power system		1		1									5.00	5.00								$11
			Calculations	Calculations - documentation		1		1									5.00									$7
	System Testing	$114.5	$114.5																							
			Procedures PTPs, ISTPs	New Procedures		1		1									5.00	10.00								$16
				DC Hipots		1		1									5						3		8	$17
				Electrical Interlock Testing		1		1									1						3		8	$11
				Kirk Key Interlock Testing		1		1									1						2		3	$6
				Instrumentation Test & Calibration		1		1									1						2		2	$6
				Control System Testing		1		1									1						3		3	$8
				Coil Protection System Testing		1		1									1						3		3	$8
				Power testing of reactivated equip.		1		1									1						3	15	30	$44
			TOTALS											$739.05		10	136	276	29	286	377	$595	83	109	277	**$3,143**
IN MAN HOURS																	1088	2208	232	2288	3016		664	872	2216	
RATES FY09													M&S -->	739	Spares-->	9.500					SC -->	729				
		FY2009 Hourly Rates																								∑MD
EEEM	1.4064	175.8	1.4064	1.3680										906.075			432		641			729	435	cross check	EEEM	248

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NSTX NB2 Power System 060710 decontamination included											***M&S***						***Design/ Procurement***		***Installation***				***Commissioning***			***Line Total***
						Mult	**Qty**	**excl factor**	**Qnty**	**Units**	**Qty**	**Units**	**Unit Cost**	**Cost**	**Spare Units**	**Spare Cost**	**EEEM**	**DM**	**EEEM**	**EESM**	**EETB**	**SC**	**EEEM**	**EESM**	**EETB**	
													(k$/unit)	**($K)**		**($K)**	**(md)**	**(md)**	**(md)**	**(md)**	**(md)**	**($K)**	**(md)**	**(md)**	**(md)**	**($K)**
EESM	1.2074	150.9	1.2074	1.1600																					EESM	395
EETB	0.6750	84.4	0.6750	0.6400													3143								EETB	654
G&A (MHX)	1.2260	1.226		1.2260										3143.168											EADM	276
DM	0.8713	108.9	0.8713	0.9900																					M&S$k	739
																									Subcon	**595**
Notes:																									Total	
SCOPE COVERED																										
2 Sub-contract estimates based on bids and a projected increase of costs																										
4. Cost in 09 Dollars																										
5. SCHEDULE WILL AFFECT COST																										

Names of req'd skills if known	Basis of Estimate Category
	2
	2
	2
	2
	2
	6
	6
	6
	6&2
	6&2
	6&2
	2
	2
	4&7
	4&7
	4
	2
	2
	2
	2
	2
	2
	2
	2
	2
	2
	2
	2
	2

Names of req'd skills if known	Basis of Estimate Category