

	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T		
1	NSTX Upgrade Project Risk & Opportunity Registry, rev 23 11/6/2012										Updates in blue	VL= 90%				L= 60%		U= 25%		VU=	
2											No Change	85									Project
3	Updated	Number	Affected Job	Job Title	Risk Description	Mitigation Plan	Corrective Action if Risk Occurs (task id if appl)	Deadline to Retire Risk or Absorb Impact	Cost incurred plan (if not retired)	Owner	Current Status	Likelihood of Occurrence	Consequences	Risk Ranking	Basis of Estimate	Cost Impact (\$K)	Critical Path Schedule Impact (weeks)	Cost and Schedule Impact Calculation Basis	Cost considered		
4																					
5																	Open=	\$ 3,149			
6	12/08/09	3400a	3400	Gas Delivery system mods for Centerstack upgrade	Fueling lines do not adequately deliver gas because of occlusions or leaks	Replace gas delivery line	3400-0052	Sep-2014	FY14	Blanchard	open	VU	Negligible	Low	Project manager's estimate	10		Similar installation on NSTX	\$ 10		
7	06/15/10	1301a	1301	Outer TF Coil Repairs	After press mold operation, numerous dry areas are found	Engineering of the fill locations and vents will be performed as part of developing the fabrication procedure.	Attempt local repair; if unsuccessful, rebuild coil 1301-0060	May-2013	FY13	Chrzanowski	retired	U	Negligible	Low	manager's estimate	0	0	will not repair TF7. Will rebuild 2 new coils plus repair joints on tf 12 & 4 leaving tf10 as spare	\$ -		
8	06/15/10	1301b	1301	Outer TF Coil Repairs	Coil does not pass final acceptance tests	Include tests (meggar, hydro and hi-pot) at several points in the fabrication process so non-conformances can be identified and corrected as they occur.	Attempt local repair; if unsuccessful, rebuild coil 1301-0060	May-2013	FY13	Chrzanowski	retired	U	Negligible	Low	manager's estimate	0	0	will not repair TF7. Will rebuild 2 new coils plus repair joints on tf 12 & 4 leaving tf10 as spare	\$ -		
9	12/08/09	1302a	1302	Centerstack Assembly	Components do not arrive when required	If schedule is critical, OT or second shift would be required to regain schedule	1302-1500	Sep-2013		Chrzanowski	open	U	Negligible	Low		0			\$ -		
10	06/15/10	1305b	1305		TF quadrant - poor VPI impregnation	Engineering of the fill locations and vents will be performed as part of developing the fabrication procedure.	Evaluate condition of coil - Local dry areas could be repaired, but larger failure would require rebuilding TF quadrant 1304-1870	Apr-2013	FY13	Chrzanowski	open	U	Marginal	Low	manager's estimate	200	0	repeat fabrication tasks at \$177k. 4 mo sched impact included in 6 month schedule contingency.	\$ 177		
11	06/15/10	1305c	1305		TF quadrant fails electrical tests	Include tests (meggar, hydro and hi-pot) at several points in the fabrication process so non-conformances can be identified and corrected as they occur.	If unable to repair short, rebuild quadrant 1304-1890	Apr-2013	FY13	Chrzanowski	open	U	Marginal	Low	manager's estimate	200	0	repeat fabrication tasks at \$177k. 4 mo sched impact included in 6 month schedule contingency.	\$ 177		
12	06/15/10	1305d	1305		TF full bundle - poor VPI impregnation	Engineering of the fill locations and vents will be performed as part of developing the fabrication procedure.	Evaluate condition of coil - Local dry areas could be repaired, but larger failure would require separating quadrants and re-assy and VPI of bundle 1304-5400	May-2013	FY13	Chrzanowski	open	U	Marginal	Low		250		repeat fabrication tasks at \$100k. 1 mo sched impact included in 6 month schedule contingency.	\$ 100		
13	06/15/10	1305e	1305		TF full bundle fails electrical tests	Include tests (meggar, hydro and hi-pot) at several points in the fabrication process so non-conformances can be identified and corrected as they occur.	Repair electrical short 1304-5400	May-2013	FY13	Chrzanowski	open	U	Negligible	Low		75		repeat fabrication tasks at \$100k. 1 mo sched impact included in 6 month schedule contingency.	\$ 100		
14	06/15/10	1305f	1305		OH bundle - poor VPI impregnation	Engineering of the fill locations and vents will be performed as part of developing the fabrication procedure.	Evaluate condition of coil - Local dry areas could be repaired, but larger failure would require cutting OH coil from TF and rebuilding OH 1305-8800	Oct-2013	FY13	Chrzanowski	open	U	Significant	Moderate		645		cost of stripping and rebuilding. 8 month schedule impact. 8 month schedule impact already estimated separately.	\$ 645		
15	06/15/10	1305g	1305		OH coil fails electrical tests	Include tests (meggar, hydro and hi-pot) at several points in the fabrication process so non-conformances can be identified and corrected as they occur.	If fault can not be repaired, Coil must be cut off and rebuilt 1305-8800	Nov-2013	FY13	Chrzanowski	open	U	Significant	Moderate		645		cost of stripping and rebuilding. 8 month schedule impact. 8 month schedule impact already estimated separately.	\$ 645		
16	06/15/10	1305h	1305		Unable to completely remove temporary spacer between OH and TF after completion of fabrication	Administrative controls during operation requiring OH and TF to be powered together	1305-8700	Nov-2013		Chrzanowski	open	U	Marginal	Low		0			\$ -		
17	06/15/10	1306a	1306	Inner PF Coils Design and Fabrication	Poor impregnation	Engineering of the fill locations and vents will be performed as part of developing the fabrication procedure.	Local dry areas can be repaired. Extensive areas of poor VPI may require rewinding new coil. 1306-5050	Aug-2013	FY13	Chrzanowski	open	U	Negligible	Low	manager's estimate	0	0	repeat fabrication tasks under fixed price contract.	\$ -		
18	06/15/10	1306b	1306	Inner PF Coils Design and Fabrication	Coil fails final acceptance tests.	Include tests (meggar, hydro and hi-pot) at several points in the fabrication process so non-conformances can be identified and corrected as they occur.	If coil cannot be repaired, a new coil will need to be wound. 1306-5050	Aug-2013	FY13	Chrzanowski	open	U	Negligible	Low	manager's estimate	0	0	repeat fabrication tasks under fixed price contract.	\$ -		

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19	12/08/09	1307a	1307	Centerstack Casing Assembly Design and Fabrication	Components arrive late	OT required to recover schedule	1307-2030	Feb-2013		Chrzanowski	open	U	Negligible	Low		0	0		\$ -		
20	12/08/09	7200a	7200	Centerstack Management	Additional reviews	Increase scope as required		Sep-2013	FY11,12	Dudek	open	U	Marginal	Low	Manager's estimate	107		additional review every other year	\$ 107		
21	06/15/10	2490a	2490	Relocations to Support NB2 Installation	SPRED re-design and re-installation may require more effort than estimated due to the physical constraints in the area of bay L	Start design work immediately so potential schedule impact can be accommodated if necessary.		Apr-2013	FY13	Perry	open	U	Marginal	Low	manager's estimate	98 to 147		Past experience designing and installing this diagnostic on NSTX	\$ 147		
22	06/15/10	2490b	2490		LOWEUS re-design and re-installation may require more effort than estimated due to the physical constraints in the area of bay L	Start design work immediately so potential schedule impact can be accommodated if necessary.		Jun-2013	FY13	Perry	open	U	Marginal	Low	manager's estimate	98 to 147		Past experience designing and installing this diagnostic on NSTX	\$ 147		
23	07/16/10	8200d	8200		Realign Coils - This is in case the coils spring or change shape after releasing them from their existing clamps. This could affect the alignment of all any coil mounted to the vessel wall/ribs.	Metrology - new clamps		Sep-2013	FY14	Perry	open	U	Negligible	Low	Manager's estimate	40			\$ 40		
24	07/16/10	8200c	8200		Realign vacuum vessel - This is in case the vessel springs or changes shape after cutting the new port opening. This could affect the alignment of all the vessel internals mounted to the vessel wall.	Metrology	2480-0083	Nov-2013	FY14	Perry	open	L	Negligible	Low	Manager's estimate	40			\$ 40		
25	07/16/10	8200b	8200		Damage to coil insulation during removal - This is in case we accidentally nick or gouge the outer insulation.	repair coil	8250-129	Apr-2014	FY13	Perry	open	VU	Negligible	Low	Coil engineer (Chrzanowski) estimate	40			\$ 40		
26	12/08/09	8250a	8250	Centerstack Removal and Re-installation / Pumpdown / Bakeout	Vacuum seals don't pass leakcheck	Lift centerstack out, rework seals, re-install centerstack		Sep-2014	FY14	Perry	open	VU	Negligible	Low	Construction Manager's estimate	28 to 56	1 to 2	Same work previous done on NSTX	\$ 56		
27	12/08/09	8250b	8250		Flex bus require more than two fit-ups / reworks prior to final installation	Repeat "remove, rework, re-install"		Sep-2014	FY14	Perry	open	U	Marginal	Low	Construction Manager's estimate	63 to 189	2 to 6	Same work previous done on NSTX	\$ 189		
28	12/08/09	8250c	8250		Umbrella lids require more than two fit-ups / reworks prior to final installation	Repeat "remove, rework, re-install"		Sep-2014	FY14	Perry	open	U	Negligible	Low	Construction Manager's estimate	14 to 42	1 to 2	Same work previous done on NSTX	\$ 42		
29	12/08/09	6100c	6100	Data Acquisition rate	Data acquisition takes too long	Upgrade additional data acq systems and/or networks, revise software		Sep-2014	FY11	Sichta	open	VU	Marginal	Low	Manager's estimate	5 to 25	0 to 2		\$ 25		
30	07/25/10	6100d	6100	Loss of key personnel	Loss of key personnel	Assure project schedule has free float to absorb potential schedule impact, hire replacement and assess schedule impact		Sep-2014	FY14	Sichta	open	U	Marginal	Low	Estimated impact is < 1 months on the critical path. Impact on cost because untrained personnel will be less effective.	10 to 50	0 to 4		\$ 50		
31	07/25/10	6100e	6100	Additional work scope	NSTX operations does not fund work scope as listed in WBS6100 PDR	Continued diligence to assure the program office funds req'd infrastructure improvements. Additional work scope for upgrade		Apr-2014	FY14	Sichta	open	U	Marginal	Low	Estimated impact is < 1 months on the critical path. Impact on cost due to additional work scope.	200	0 to 4		\$ 200		
32	03/17/10	7100a	7100	Project Management and Integration	EVMS implementation requires more project controls, support for training, etc than expected	Assign experienced engineers as CAMs. Minimize the number of CAMs. New PM office.		Dec-2011	FY12	Strykowski	retired	U	Marginal	Low	Project Manager's estimate	250		additional 1 fte for one more year	\$ 250		

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	12/08/09	7100b	7100	PPPL overhead rates	Continue to ensure that outyear rates are conservative			Sep-2013		Strykowski	open	L			Project Manager's estimate			Current EAC shows rates are \$1.967M conservative HOWEVER the outyear budget deficit would like increase existing rates close to the baseline rates. Unknown. Likely 1,000k opportunity	\$ (1,000)		
33	02/17/12	7100	7100	injury prompted stand down	serious injury causes 2-4 week standdown	continued focus and diligence on safety at the daily WCC mtg, 8:30 meetings, staff meeting etc.		Sep-2014		strykowski	open	u	Significant	Moderate				estimated as 3 weeks of non productive labor	\$ 399		
34	02/17/12	7100	7100	core competencies-critical staff	critical skills lost (due to illness, VSP, retirement etc)	Cross train and develop backup staff		Sep-2013		strykowski	open	u	Significant	Moderate	schedule impact of 1-2 months on critical path			schedule impact included in 6 month schedule contingency. Cost estimated as 3mm inefficiency	\$ 87		
35	12/08/09	7700a	7700	HP Allocations	Volatility of overhead rates	Increase as required		Sep-2013	FY13	Strykowski	open	L	Negligible	Low	Project Manager's estimate	0		3% variation	\$ 65		
36	12/08/09	7700b	7700		Volatility of base estimates for the allocated cost centers	Increase as required		Sep-2013	FY13	Strykowski	open	L	Negligible	Low	Project Manager's estimate	0		3% variation	\$ 65		
37	10/01/12		7700	equipt deliveries	vendor late deliveries impact critical path	Award procurements as soon as possible to maximize free float. Free float used to absorb vendor delays and/or PPPL rework of part				Strykowski	open	L	Marginal	Moderate		250		\$250/mo of schedule slip ON CRITICAL PATH	\$ 250		
38	12/08/09	7710a	7710	Direct Allocations	Volatility of head rates	Increase as required		Sep-2013	FY11,12,13,14	Strykowski	open	L	Negligible	Low	Project Manager's estimate	65		100%	\$ 43		
39	12/08/09	7710b	7710		Volatility of base estimates for the allocated cost centers	Increase as required		Sep-2013	FY11,12,13,14	Strykowski	open	L	Negligible	Low	Project Manager's estimate	65		100%	\$ 43		
40	12/08/09	1000a	1000	Centerstack Analytical Support	Analysis indicates a significant component needs upgrade that previously hasn't been identified	Maintain upgrades of the model and keep ahead of the scenario changes		Sep-2011	FY11	Titus	open	VU	Negligible	vu	manager's experience	10 to 40		manager's estimate	\$ 40		
41	12/08/09	1000b	1000	Centerstack Analytical Support	Analysis indicates a minor component needs upgrade that previously hasn't been identified - weld details, details that are inconsistent with the Pro-E model	Identify these areas early with site surveys and as-builts		Sep-2011	FY11	Titus	open	VU	Negligible	Low	manager's experience	10 to 40		manager's estimate	\$ 40		
42	06/15/10	1002a	1002	Passive Plate Analysis	Halo and New/other disruption loads are beyond the capacity of the present hardware	Size modifications based on calculations and implement		Sep-2011	FY11	Titus	open	VU	Negligible	Low	Project Manager's estimate	5 to 20	0	1 to 4 weeks of designer	\$ 20		
43	03/17/10	2300a	2300	Miscellaneous	Upgrade may increase EM loads to small items on vessel that may need reinforcement, e.g. shutters, ECH, brackets, diagnostic supports.	Design reinforcements as problem areas are identified.		Sep-2011	FY11	Titus	open	VU	Marginal	Low	project manager's estimate	100			\$ 100		
44	12/08/09	1001a	1001	Centerstack Plasma Facing Components	Tiles not delivered on time	If schedule critical, install tiles in vessel.	1001-0066	Sep-2013		Tresemmer	open	U			prior experience on NSTX	0					
45	12/08/09	1001b	1001	Centerstack Plasma Facing Components	Special diagnostics for tiles not received on time	If schedule critical, install tiles in vessel.	4100-0056	Sep-2013		Tresemmer	open	U			prior experience on NSTX	0					
46	06/15/10	1001c	1001	Centerstack Plasma Facing Components	Tiles require unforeseen machining	If schedule critical, and in-house machining will not suffice, seek external machining sources. Additional machining time added to WAF	1302-1500	Mar-2014	FY13	Tresemmer	open	L	Negligible	Low	prior experience on NSTX	15 to 60	1 to 4	3 machinists for 1 to 4 weeks	\$ 60		
47																					