

LCLS TPC Detailed Cost Estimate (FY05FY09)

5/5/2005

WBS Level						LCLA DCE March-2005 Description	Early Start	Early Finish	OBS	Fund Type	Res Code	Units	Budgeted Quantity		Fully Burdened and Escalated Cost		
Run Time: 4/22/05 8:43am													Hours	\$	Labor	M&S	Total (No Conting)
1	03	01				LINAC SYSTEM							175,537	7,836,933	16,572,792	8,841,057	25,413,849
1	03	01				System Management & Integration							35,326	54,000	3,947,914	69,142	4,017,056
1	03	01	01			Linac Mechanical Integration							30,471	-	3,413,597	-	3,413,597
1	03	01	01	01		L01 System Integration							4,417	-	495,929	-	495,929
1	03	01	01	01		Write System ICD - L01	2-Nov-04	8-Nov-04	S	P	SL_ME	Hrs	20		2,114		2,114
1	03	01	01	01		Define/ Develop L01 System Assembly Model	1-Oct-04	1-Nov-04	S	P	SL_ME	Hrs	55		5,814		5,814
1	03	01	01	01		Define/ Develop L01 System Assembly Model	1-Oct-04	1-Nov-04	S	P	SL_MDD	Hrs	70		4,392		4,392
1	03	01	01	01		Write Installation Plan - L01	9-Nov-04	15-Nov-04	S	P	SL_ME	Hrs	24		2,537		2,537
1	03	01	01	01		Make Linac Vacuum Schematic	2-Nov-04	15-Nov-04	S	P	SL_ME	Hrs	8		846		846
1	03	01	01	01		Make Linac Vacuum Schematic	2-Nov-04	15-Nov-04	S	P	SL_MDD	Hrs	40		2,510		2,510
1	03	01	01	01		Prepare for PDR - L01	16-Nov-04	1-Feb-05	S	P	SL_ME	Hrs	8		846		846
1	03	01	01	01		Conduct L01 System PDR	2-Feb-05	15-Feb-05	S	P	SL_ME	Hrs	8		846		846
1	03	01	01	01		Generate Detailed Procurement Plan	15-Feb-05	15-Feb-05	S	P	SL_ME	Hrs	4		423		423
1	03	01	01	01		Create RF Cold Test Plan	16-Feb-05	18-Feb-05	S	P	SL_KE	Hrs	24		2,700		2,700
1	03	01	01	01		Establish Subordinate Work Orders	22-Feb-05	22-Feb-05	S	P	SL_ME	Hrs	3		317		317
1	03	01	01	01		Prepare for FDR - L01	20-Jul-05	22-Jul-05	S	P	SL_ME	Hrs	8		846		846
1	03	01	01	01		Conduct L01 System FDR	25-Jul-05	26-Jul-05	S	P	SL_ME	Hrs	8		846		846
1	03	01	01	01		Document System Assembly Model - L01	27-Jul-05	23-Aug-05		P	SL_ME	Hrs	50		5,286		5,286
1	03	01	01	01		Document System Assembly Model - L01	27-Jul-05	23-Aug-05		P	SL_MDD	Hrs	75		4,706		4,706
1	03	01	01	01		L01 System PED Support to Components	9-Nov-04	30-Sep-05	S	P	SL_ME	Hrs	314		33,193		33,193
1	03	01	01	01		L01 System PED Support to Components	9-Nov-04	30-Sep-05	S	P	SL_KE	Hrs	157		17,664		17,664
1	03	01	01	01		L01 System PED Support to Components	9-Nov-04	30-Sep-05	S	P	SL_CE	Hrs	157		17,664		17,664
1	03	01	01	01		L01 System CONST Support to Components	3-Oct-05	30-Mar-09	S	C	SL_ME	Hrs	1,692		190,073		190,073
1	03	01	01	01		L01 System CONST Support to Components	3-Oct-05	30-Mar-09	S	C	SL_KE	Hrs	846		101,153		101,153
1	03	01	01	01		L01 System CONST Support to Components	3-Oct-05	30-Mar-09	S	C	SL_CE	Hrs	846		101,153		101,153
1	03	01	01	02		BC1 System Integration							4,402	-	494,207	-	494,207
1	03	01	01	02		Write System ICD - BC1	9-Nov-04	15-Nov-04	S	P	SL_ME	Hrs	40		4,228		4,228
1	03	01	01	02		Define/Develop BC1 System Assembly Model	1-Oct-04	1-Nov-04	S	P	SL_ME	Hrs	55		5,814		5,814
1	03	01	01	02		Define/Develop BC1 System Assembly Model	1-Oct-04	1-Nov-04	S	P	SL_MDD	Hrs	70		4,392		4,392
1	03	01	01	02		Write Installation Plan - BC1	16-Nov-04	22-Nov-04	S	P	SL_ME	Hrs	24		2,537		2,537
1	03	01	01	02		Make Linac Vacuum Schematic	2-Nov-04	8-Nov-04	S	P	SL_ME	Hrs	8		846		846
1	03	01	01	02		Make Linac Vacuum Schematic	2-Nov-04	8-Nov-04	S	P	SL_MDD	Hrs	40		2,510		2,510
1	03	01	01	02		Generate Detailed Procurement Plan	16-Nov-04	16-Nov-04	S	P	SL_ME	Hrs	4		423		423
1	03	01	01	02		Create Cold Test Plan	17-Nov-04	19-Nov-04	S	P	SL_KE	Hrs	24		2,700		2,700
1	03	01	01	02		Establish Subordinate Work Orders	22-Nov-04	22-Nov-04	S	P	SL_ME	Hrs	8		846		846
1	03	01	01	02		Prepare for FDR - BC1	20-Jul-05	22-Jul-05	S	P	SL_ME	Hrs	24		2,537		2,537
1	03	01	01	02		Conduct BC1 System FDR	25-Jul-05	26-Jul-05	S	P	SL_ME	Hrs	8		846		846
1	03	01	01	02		Document System Assembly Model - BC1	24-Aug-05	21-Sep-05		P	SL_ME	Hrs	50		5,286		5,286
1	03	01	01	02		Document System Assembly Model - BC1	24-Aug-05	21-Sep-05		P	SL_MDD	Hrs	75		4,706		4,706
1	03	01	01	02		BC1 System PED Support to Components	16-Nov-04	30-Sep-05	S	P	SL_ME	Hrs	294		31,079		31,079
1	03	01	01	02		BC1 System PED Support to Components	16-Nov-04	30-Sep-05	S	P	SL_KE	Hrs	147		16,539		16,539
1	03	01	01	02		BC1 System PED Support to Components	16-Nov-04	30-Sep-05	S	P	SL_CE	Hrs	147		16,539		16,539
1	03	01	01	02		BC1 System CONST Support to Components	3-Oct-05	30-Mar-09	S	C	SL_ME	Hrs	1,692		190,073		190,073
1	03	01	01	02		BC1 System CONST Support to Components	3-Oct-05	30-Mar-09	S	C	SL_KE	Hrs	846		101,153		101,153
1	03	01	01	02		BC1 System CONST Support to Components	3-Oct-05	30-Mar-09	S	C	SL_CE	Hrs	846		101,153		101,153
1	03	01	01	03		L02 System Integration							4,424	-	492,510	-	492,510
1	03	01	01	03		Write System ICD - L02	16-Nov-04	22-Nov-04	S	P	SL_ME	Hrs	20		2,114		2,114
1	03	01	01	03		Write Installation Plan - L02	11-Jan-05	13-Jan-05	S	P	SL_ME	Hrs	8		846		846
1	03	01	01	03		Make Linac Vacuum Schematic	14-Jan-05	21-Jan-05	S	P	SL_ME	Hrs	4		423		423
1	03	01	01	03		Make Linac Vacuum Schematic	14-Jan-05	21-Jan-05	S	P	SL_MDD	Hrs	40		2,510		2,510
1	03	01	01	03		Prepare for PDR - L02	24-Jan-05	26-Jan-05	S	P	SL_ME	Hrs	8		846		846
1	03	01	01	03		Conduct L02 System PDR	27-Jan-05	27-Jan-05	S	P	SL_ME	Hrs	8		846		846
1	03	01	01	03		Generate Detailed Procurement Plan	28-Jan-05	28-Jan-05	S	P	SL_ME	Hrs	4		423		423
1	03	01	01	03		Create Cold Test Plan	31-Jan-05	2-Feb-05	S	P	SL_KE	Hrs	16		1,800		1,800
1	03	01	01	03		Establish Subordinate Work Orders	3-Feb-05	3-Feb-05	S	P	SL_ME	Hrs	8		846		846
1	03	01	01	03		Prepare for FDR - L02	20-Jul-05	22-Jul-05	S	P	SL_ME	Hrs	8		846		846
1	03	01	01	03		Conduct L02 System FDR	25-Jul-05	25-Jul-05	S	P	SL_ME	Hrs	8		846		846
1	03	01	01	03		Document System Assembly Model - L02	22-Sep-05	19-Oct-05		L	SL_ME	Hrs	50		5,382		5,382
1	03	01	01	03		Document System Assembly Model - L02	22-Sep-05	19-Oct-05		L	SL_MDD	Hrs	75		4,791		4,791
1	03	01	01	03		L02 System PED Support to Components	11-Jan-05	30-Sep-05	S	P	SL_ME	Hrs	284		30,022		30,022
1	03	01	01	03		L02 System PED Support to Components	11-Jan-05	30-Sep-05	S	P	SL_KE	Hrs	142		15,976		15,976
1	03	01	01	03		L02 System PED Support to Components	11-Jan-05	30-Sep-05	S	P	SL_CE	Hrs	142		15,976		15,976
1	03	01	01	03		L02 System CONST Support to Components	3-Oct-05	30-Mar-09	S	C	SL_ME	Hrs	1,692		190,073		190,073
1	03	01	01	03		L02 System CONST Support to Components	3-Oct-05	30-Mar-09	S	C	SL_KE	Hrs	846		101,153		101,153

LCLS TPC Detailed Cost Estimate (FY05FY09)

5/5/2005

WBS Level						LCLA DCE March-2005 Description	Early Start	Early Finish	OBS	Fund Type	Res Code	Units	Budgeted Quantity		Fully Burdened and Escalated Cost			
Run Time: 4/22/05 8:43am													Hours	\$	Labor	M&S	Total (No Conting)	
1	2	3	4	5	6	L02 System CONST Support to Components	3-Oct-05	30-Mar-09	S	C	SL_CE	Hrs	846			101,153		101,153
1	03	01	01	03	Define/Develop L02 System Assembly Model - FY05	1-Oct-04	10-Jan-05	S	P	SL_ME	Hrs	50			5,286		5,286	
1	03	01	01	03	Define/Develop L02 System Assembly Model - FY05	1-Oct-04	10-Jan-05	S	P	SL_MDD	Hrs	165			10,352		10,352	
1	03	01	01	04	BC2 System Integration								4,396	-	490,037	-	490,037	
1	03	01	01	04	Write System ICD - BC2	23-Nov-04	1-Dec-04	S	P	SL_ME	Hrs	20			2,114		2,114	
1	03	01	01	04	Write Installation Plan - BC2	3-Dec-04	9-Dec-04	S	P	SL_ME	Hrs	10			1,057		1,057	
1	03	01	01	04	Make Linac Vacuum Schematic	10-Dec-04	15-Dec-04	S	P	SL_ME	Hrs	4			423		423	
1	03	01	01	04	Make Linac Vacuum Schematic	10-Dec-04	15-Dec-04	S	P	SL_MDD	Hrs	30			1,882		1,882	
1	03	01	01	04	Prepare for PDR - BC2	16-Dec-04	3-Jan-05	S	P	SL_ME	Hrs	8			846		846	
1	03	01	01	04	Conduct BC2 System PDR	4-Jan-05	4-Jan-05	S	P	SL_ME	Hrs	8			846		846	
1	03	01	01	04	Generate Detailed Procurement Plan	5-Jan-05	5-Jan-05	S	P	SL_ME	Hrs	4			423		423	
1	03	01	01	04	Create Cold Test Plan	6-Jan-05	10-Jan-05	S	P	SL_KE	Hrs	20			2,250		2,250	
1	03	01	01	04	Establish Subordinate Work Orders	11-Jan-05	11-Jan-05	S	P	SL_ME	Hrs	4			423		423	
1	03	01	01	04	Prepare for FDR - BC2	20-Jul-05	22-Jul-05	S	P	SL_ME	Hrs	8			846		846	
1	03	01	01	04	Conduct BC2 System FDR	25-Jul-05	25-Jul-05	S	P	SL_ME	Hrs	8			846		846	
1	03	01	01	04	Document System Assembly Model - BC2	20-Oct-05	16-Nov-05	C		SL_ME	Hrs	50			5,434		5,434	
1	03	01	01	04	Document System Assembly Model - BC2	20-Oct-05	16-Nov-05	C		SL_MDD	Hrs	75			4,837		4,837	
1	03	01	01	04	BC2 System PED Support to Components	3-Dec-04	30-Sep-05	S	P	SL_ME	Hrs	274			28,965		28,965	
1	03	01	01	04	BC2 System PED Support to Components	3-Dec-04	30-Sep-05	S	P	SL_KE	Hrs	137			15,414		15,414	
1	03	01	01	04	BC2 System PED Support to Components	3-Dec-04	30-Sep-05	S	P	SL_CE	Hrs	137			15,414		15,414	
1	03	01	01	04	BC2 System CONST Support to Components	3-Oct-05	30-Mar-09	S	C	SL_ME	Hrs	1,692			190,073		190,073	
1	03	01	01	04	BC2 System CONST Support to Components	3-Oct-05	30-Mar-09	S	C	SL_KE	Hrs	846			101,153		101,153	
1	03	01	01	04	BC2 System CONST Support to Components	3-Oct-05	30-Mar-09	S	C	SL_CE	Hrs	846			101,153		101,153	
1	03	01	01	04	Define/Develop BC2 System Assembly Model - FY04a	1-Oct-04	2-Dec-04	S	P	SL_ME	Hrs	50			5,286		5,286	
1	03	01	01	04	Define/Develop BC2 System Assembly Model - FY04a	1-Oct-04	2-Dec-04	S	P	SL_MDD	Hrs	165			10,352		10,352	
1	03	01	01	05	L03 System Integration								4,285	-	481,820	-	481,820	
1	03	01	01	05	Write System ICD - L03	2-Dec-04	8-Dec-04	S	P	SL_ME	Hrs	20			2,114		2,114	
1	03	01	01	05	Write Installation Plan - L03	11-Jan-05	13-Jan-05	S	P	SL_ME	Hrs	16			1,691		1,691	
1	03	01	01	05	Make Linac Vacuum Schematic	14-Jan-05	21-Jan-05	S	P	SL_ME	Hrs	4			423		423	
1	03	01	01	05	Make Linac Vacuum Schematic	14-Jan-05	21-Jan-05	S	P	SL_MDD	Hrs	40			2,510		2,510	
1	03	01	01	05	Prepare for PDR - L03	24-Jan-05	26-Jan-05	S	P	SL_ME	Hrs	8			846		846	
1	03	01	01	05	Conduct L03 System PDR	27-Jan-05	27-Jan-05	S	P	SL_ME	Hrs	8			846		846	
1	03	01	01	05	Generate Detailed Procurement Plan	28-Jan-05	28-Jan-05	S	P	SL_ME	Hrs	4			423		423	
1	03	01	01	05	Create Cold Test Plan	31-Jan-05	1-Feb-05	S	P	SL_KE	Hrs	12			1,350		1,350	
1	03	01	01	05	Establish Subordinate Work Orders	2-Feb-05	2-Feb-05	S	P	SL_ME	Hrs	4			423		423	
1	03	01	01	05	Prepare for FDR - L03	20-Jul-05	22-Jul-05	S	P	SL_ME	Hrs	8			846		846	
1	03	01	01	05	Conduct L03 System FDR	25-Jul-05	25-Jul-05	S	P	SL_ME	Hrs	8			846		846	
1	03	01	01	05	Document System Assembly Model - L03	17-Nov-05	16-Dec-05	C		SL_ME	Hrs	50			5,434		5,434	
1	03	01	01	05	Document System Assembly Model - L03	17-Nov-05	16-Dec-05	C		SL_MDD	Hrs	75			4,837		4,837	
1	03	01	01	05	L03 System PED Support to Components	11-Jan-05	30-Sep-05	S	P	SL_ME	Hrs	262			27,696		27,696	
1	03	01	01	05	L03 System PED Support to Components	11-Jan-05	30-Sep-05	S	P	SL_KE	Hrs	131			14,739		14,739	
1	03	01	01	05	L03 System PED Support to Components	11-Jan-05	30-Sep-05	S	P	SL_CE	Hrs	131			14,739		14,739	
1	03	01	01	05	L03 System CONST Support to Components	3-Oct-05	30-Mar-09	S	C	SL_ME	Hrs	1,692			190,073		190,073	
1	03	01	01	05	L03 System CONST Support to Components	3-Oct-05	30-Mar-09	S	C	SL_KE	Hrs	846			101,153		101,153	
1	03	01	01	05	L03 System CONST Support to Components	3-Oct-05	30-Mar-09	S	C	SL_CE	Hrs	846			101,153		101,153	
1	03	01	01	05	Define/Develop L03 System Assembly Model - FY04a	1-Oct-04	10-Jan-05	S	P	SL_ME	Hrs	50			5,286		5,286	
1	03	01	01	05	Define/Develop L03 System Assembly Model - FY04a	1-Oct-04	10-Jan-05	S	P	SL_MDD	Hrs	70			4,392		4,392	
1	03	01	01	06	LTU System Integration								4,256	-	477,146	-	477,146	
1	03	01	01	06	Write System ICD - L03	9-Dec-04	15-Dec-04	S	P	SL_ME	Hrs	40			4,228		4,228	
1	03	01	01	06	Generate Removal Document List - FFTB to LT	1-Oct-04	29-Oct-04	S	P	SL_ME	Hrs	20			2,114		2,114	
1	03	01	01	06	Generate Removal Document List - FFTB to LT	1-Oct-04	29-Oct-04	S	P	SL_MDD	Hrs	20			1,255		1,255	
1	03	01	01	06	Write Installation Plan - LTU	16-Dec-04	3-Jan-05	S	P	SL_ME	Hrs	6			634		634	
1	03	01	01	06	Prepare for PDR - LTU	4-Oct-04	6-Oct-04	S	P	SL_ME	Hrs	12			1,269		1,269	
1	03	01	01	06	Prepare for PDR - LTU	4-Oct-04	6-Oct-04	S	P	SL_MDD	Hrs	12			753		753	
1	03	01	01	06	Conduct LTU System PDR	7-Oct-04	7-Oct-04	S	P	SL_ME	Hrs	1			106		106	
1	03	01	01	06	Generate Detailed Procurement Plan	8-Oct-04	8-Oct-04	S	P	SL_ME	Hrs	2			211		211	
1	03	01	01	06	Create Test Plan	31-Jan-05	1-Feb-05	S	P	SL_KE	Hrs	12			1,350		1,350	
1	03	01	01	06	Establish Subordinate Work Orders	2-Feb-05	2-Feb-05	S	P	SL_ME	Hrs	1			106		106	
1	03	01	01	06	Prepare for FDR - LTU	20-Jul-05	22-Jul-05	S	P	SL_ME	Hrs	6			634		634	
1	03	01	01	06	Prepare for FDR - LTU	20-Jul-05	22-Jul-05	S	P	SL_MDD	Hrs	6			376		376	
1	03	01	01	06	Conduct LTU System FDR	25-Jul-05	25-Jul-05	S	P	SL_ME	Hrs	1			106		106	
1	03	01	01	06	LTU System PED Support to Components	16-Dec-04	30-Sep-05	S	P	SL_ME	Hrs	244			25,793		25,793	
1	03	01	01	06	LTU System PED Support to Components	16-Dec-04	30-Sep-05	S	P	SL_KE	Hrs	122			13,726		13,726	
1	03	01	01	06	LTU System PED Support to Components	16-Dec-04	30-Sep-05	S	P	SL_CE	Hrs	122			13,726		13,726	

LCLS TPC Detailed Cost Estimate (FY05FY09)

5/5/2005

WBS Level						LCLA DCE March-2005 Description	Early Start	Early Finish	OBS	Fund Type	Res Code	Units	Budgeted Quantity		Fully Burdened and Escalated Cost			
Run Time: 4/22/05 8:43am													Hours	\$\$	Labor	M&S	Total (No Conting)	
1	03	01	01	06		LTU System CONST Support to Components	3-Oct-05	30-Mar-09	S	C	SL_ME	Hrs	1,692			190,073		190,073
1	03	01	01	06		LTU System CONST Support to Components	3-Oct-05	30-Mar-09	S	C	SL_KE	Hrs	846			101,153		101,153
1	03	01	01	06		LTU System CONST Support to Components	3-Oct-05	30-Mar-09	S	C	SL_CE	Hrs	846			101,153		101,153
1	03	01	01	06		Define/Develop LTU System Assembly Model - FY05	4-Oct-04	14-Dec-04	S	P	SL_ME	Hrs	70			7,400		7,400
1	03	01	01	06		Define/Develop LTU System Assembly Model - FY05	4-Oct-04	14-Dec-04	S	P	SL_MDD	Hrs	175			10,980		10,980
1	03	01	01	07		E-Dump System Integration							4,291	-	481,948	-	481,948	
1	03	01	01	07		Write System ICD - E-Dump	16-Dec-04	5-Jan-05	S	P	SL_ME	Hrs	40			4,228		4,228
1	03	01	01	07		Write Installation Plan - E-Dump	6-Jan-05	10-Jan-05	S	P	SL_ME	Hrs	30			3,171		3,171
1	03	01	01	07		Prepare for PDR - E-Dump	4-Oct-04	6-Oct-04	S	P	SL_ME	Hrs	6			634		634
1	03	01	01	07		Prepare for PDR - E-Dump	4-Oct-04	6-Oct-04	S	P	SL_MDD	Hrs	6			376		376
1	03	01	01	07		Conduct E-Dump System PDR	7-Oct-04	7-Oct-04	S	P	SL_ME	Hrs	1			106		106
1	03	01	01	07		Generate Detailed Procurement Plan	8-Oct-04	8-Oct-04	S	P	SL_ME	Hrs	10			1,057		1,057
1	03	01	01	07		Create Test Plan	11-Oct-04	12-Oct-04	S	P	SL_KE	Hrs	30			3,375		3,375
1	03	01	01	07		Establish Subordinate Work Orders	13-Oct-04	13-Oct-04	S	P	SL_ME	Hrs	8			846		846
1	03	01	01	07		Prepare for FDR - E-Dump	20-Jul-05	22-Jul-05	S	P	SL_ME	Hrs	6			634		634
1	03	01	01	07		Prepare for FDR - E-Dump	20-Jul-05	22-Jul-05	S	P	SL_MDD	Hrs	6			376		376
1	03	01	01	07		Conduct E-Dump System FDR	25-Jul-05	25-Jul-05	S	P	SL_ME	Hrs	1			106		106
1	03	01	01	07		E-Dump System PED Support to Components	6-Jan-05	30-Sep-05	S	P	SL_ME	Hrs	224			23,679		23,679
1	03	01	01	07		E-Dump System PED Support to Components	6-Jan-05	30-Sep-05	S	P	SL_KE	Hrs	112			12,601		12,601
1	03	01	01	07		E-Dump System PED Support to Components	6-Jan-05	30-Sep-05	S	P	SL_CE	Hrs	112			12,601		12,601
1	03	01	01	07		E-Dump System CONST Support to Components	3-Oct-05	30-Mar-09	S	C	SL_ME	Hrs	1,692			190,073		190,073
1	03	01	01	07		E-Dump System CONST Support to Components	3-Oct-05	30-Mar-09	S	C	SL_KE	Hrs	846			101,153		101,153
1	03	01	01	07		E-Dump System CONST Support to Components	3-Oct-05	30-Mar-09	S	C	SL_CE	Hrs	846			101,153		101,153
1	03	01	01	07		Define/Develop E-Dump System Assy Model - FY05	4-Oct-04	12-Nov-04	S	P	SL_ME	Hrs	140			14,799		14,799
1	03	01	01	07		Define/Develop E-Dump System Assy Model - FY05	4-Oct-04	12-Nov-04	S	P	SL_MDD	Hrs	175			10,980		10,980
1	03	01	02			Linac Controls Integration												
1	03	01	02	01		High Level Application Software												
1	03	01	02	02		Feedback Software												
1	03	01	02	03		Hardware (Computer Equipment)												
1	03	01	03			Travel							-	54,000	-	69,142	69,142	
1	03	01	03			Travel - PED	1-Apr-05	29-Apr-05	S	P	SL_MSTR	\$\$				2,000		2,460
1	03	01	03			Travel - PED	29-Jun-05	25-Aug-05	S	P	SL_MSTR	\$\$				2,000		2,460
1	03	01	03			Travel - PED	29-Jun-05	25-Aug-05	S	P	SL_MSTR	\$\$				2,000		2,460
1	03	01	03			Travel - PED	2-May-05	28-Jun-05	S	P	SL_MSTR	\$\$				2,000		2,460
1	03	01	03			Travel - PED	29-Jun-05	25-Aug-05	S	P	SL_MSTR	\$\$				2,000		2,460
1	03	01	03			Travel - PED	29-Jun-05	25-Aug-05	S	P	SL_MSTR	\$\$				2,000		2,460
1	03	01	03			Travel - PED	29-Jun-05	25-Aug-05	S	P	SL_MSTR	\$\$				2,000		2,460
1	03	01	03			Travel - PED	29-Jun-05	25-Aug-05	S	P	SL_MSTR	\$\$				2,000		2,460
1	03	01	03			Travel - PED	29-Jun-05	25-Aug-05	S	P	SL_MSTR	\$\$				2,000		2,460
1	03	01	03			Travel - CONST	3-Oct-05	30-Nov-05	S	C	SL_MSTR	\$\$				2,000		2,540
1	03	01	03			Travel - CONST	1-Dec-05	13-Feb-06	S	C	SL_MSTR	\$\$				2,000		2,540
1	03	01	03			Travel - CONST	14-Feb-06	12-Apr-06	S	C	SL_MSTR	\$\$				2,000		2,540
1	03	01	03			Travel - CONST	13-Apr-06	9-Jun-06	S	C	SL_MSTR	\$\$				2,000		2,540
1	03	01	03			Travel - CONST	12-Jun-06	8-Aug-06	S	C	SL_MSTR	\$\$				2,000		2,540
1	03	01	03			Travel - CONST	2-Oct-06	29-Nov-06	S	C	SL_MSTR	\$\$				2,000		2,600
1	03	01	03			Travel - CONST	3-Oct-06	30-Nov-06	S	C	SL_MSTR	\$\$				2,000		2,600
1	03	01	03			Travel - CONST	1-Dec-06	13-Feb-07	S	C	SL_MSTR	\$\$				2,000		2,600
1	03	01	03			Travel - CONST	14-Feb-07	12-Apr-07	S	C	SL_MSTR	\$\$				2,000		2,600
1	03	01	03			Travel - CONST	13-Apr-07	11-Jun-07	S	C	SL_MSTR	\$\$				2,000		2,600
1	03	01	03			Travel - CONST	12-Jun-07	8-Aug-07	S	C	SL_MSTR	\$\$				2,000		2,600
1	03	01	03			Travel - CONST	9-Aug-07	5-Oct-07	S	C	SL_MSTR	\$\$				2,000		2,610
1	03	01	03			Travel - CONST	8-Oct-07	5-Dec-07	S	C	SL_MSTR	\$\$				2,000		2,680
1	03	01	03			Travel - CONST	6-Dec-07	20-Feb-08	S	C	SL_MSTR	\$\$				2,000		2,680
1	03	01	03			Travel - CONST	21-Feb-08	17-Apr-08	S	C	SL_MSTR	\$\$				2,000		2,680
1	03	01	03			Travel - CONST	18-Apr-08	16-Jun-08	S	C	SL_MSTR	\$\$				2,000		2,680
1	03	01	03			Travel - CONST	17-Jun-08	13-Aug-08	S	C	SL_MSTR	\$\$				2,000		2,680
1	03	01	03			Travel - CONST	14-Aug-08	10-Oct-08	S	C	SL_MSTR	\$\$				2,000		2,692
1	03	01	04			Linac Management							4,855	-	534,317	-	534,317	
1	03	01	04			Linac System Management Effort - PED	1-Oct-04	30-Sep-05	S	P	SL_TSM	Hrs	854			90,276		90,276
1	03	01	04			Linac Procurement Management	4-Oct-04	29-Sep-06	S	P	SL_ME	Hrs	200			21,437		21,437
1	03	01	04			Linac Testing & Post-Process Management	4-Oct-04	29-Sep-06	S	P	SL_ME	Hrs	600			64,312		64,312
1	03	01	04			Linac Stage & Storage Management	4-Oct-04	29-Sep-06	S	P	SL_ME	Hrs	200			21,437		21,437
1	03	01	04			Back Check Component Spec vs Optics Requirements	6-Jun-05	10-Jun-05	S	P	SL_ME	Hrs	40			4,228		4,228
1	03	01	04			Linac System Management Effort - CONST	3-Oct-05	30-Mar-09	S	C	SL_TSM	Hrs	2,961			332,627		332,627

LCLS TPC Detailed Cost Estimate (FY05FY09)

5/5/2005

WBS Level						LCLA DCE March-2005 Description	Early Start	Early Finish	OBS	Fund Type	Res Code	Units	Budgeted Quantity		Fully Burdened and Escalated Cost			
Run Time: 4/22/05 8:43am													Hours	\$	Labor	M&S	Total (No Conting)	
1	03	02	01			Linac Controls & Power Conversion Subsystem							26,208	3,102,237	2,265,426	3,500,345	5,765,771	
1	03	02	01			Personnel Protection System (PPS)							1,816	228,720	180,718	260,663	441,381	
1	03	02	01			Procure PPS BSOIC Mounting Hardware/Material	23-May-06	6-Jun-06	S	C	SL_MSEG	\$\$			800		896	896
1	03	02	01			Prep Bid Pak - BSOIC Rad Monitor ADM-600 Series	23-May-06	6-Jun-06	S	C	SL_CE	Hrs	8			925		925
1	03	02	01			Evaluate Proposals - BSOIC Rad Monitor ADM-600 S	28-Jun-06	12-Jul-06	S	C	SL_CE	Hrs	20			2,313		2,313
1	03	02	01			Vendor Fab/Assy - BSOIC Rad Monitor ADM-600 Seri	2-Oct-06	2-Jul-07	S	C	SA_MSEG	\$\$		140,000			161,000	161,000
1	03	02	01			Fab/Assy - BSOIC Mounting Hardware (15)	2-Oct-06	26-Sep-07	S	C	SL_MFMS	Hrs	1,200			127,056		127,056
1	03	02	01			Fab and Pre Assemble Components (as required)	27-Sep-07	24-Oct-07	S	C	SL_CT	Hrs	12			798		798
1	03	02	01			Perform PPS BSOIC Pre-Installation Qual Test	25-Oct-07	21-Nov-07	S	C	SL_CT	Hrs	40			2,667		2,667
1	03	02	01			Prep Bid Pak - PLC Access Cntrl Sys Electronics	13-Jan-06	20-Jan-06	S	C	SL_CE	Hrs	8			925		925
1	03	02	01			Evaluate Proposals - PLC Access Cntrl Sys Electr	21-Feb-06	27-Feb-06	S	C	SL_CE	Hrs	8			925		925
1	03	02	01			Vendor Fab/Assy - PLC Access Cntrl Sys Electroni	1-Mar-06	13-Oct-06	S	C	SA_MSEG	\$\$		50,000			56,094	56,094
1	03	02	01			Fab, Pre Assemble and Qual Test PPS Component	16-Oct-06	12-Dec-06	C		SL_CT	Hrs	120			7,799		7,799
1	03	02	01			Fab, Pre Assemble and Qual Test PPS Component	16-Oct-06	12-Dec-06	C		SL_CCA	Hrs	40			2,764		2,764
1	03	02	01			Procure PPS Maze/Gate Hdwr/Mat/Switch/Latch/Sol	10-Apr-06	5-May-06	S	C	SL_MSEG	\$\$		920			1,030	1,030
1	03	02	01			Fab/PreAssy PPS Maze/Gate Hdwr/Mat/Switch/Latch	8-May-06	1-Aug-06	S	C	SL_CT	Hrs	40			2,534		2,534
1	03	02	01			Procure Cable PPS Maze/Gate Cableplant	3-Oct-06	11-Jan-07	S	C	SL_MSEG	\$\$		2,000			2,300	2,300
1	03	02	01			Evaluate Proposals - Mazes/Gates Access Control	7-Mar-06	20-Mar-06	S	C	SL_CE	Hrs	40			4,626		4,626
1	03	02	01			Vendor Fab/Assy - Mazes/Gates Access Cntrl Gates	11-Apr-06	26-Oct-06	S	C	SA_MSEG	\$\$		35,000			39,343	39,343
1	03	02	01			Write Software & Documentation to Integrate PPS	13-Jan-06	13-Mar-06	S	C	SL_CP	Hrs	160			14,963		14,963
1	03	02	01			Integrate and Test PPS	12-Jan-07	26-Jan-07	S	C	SL_CP	Hrs	80			7,676		7,676
1	03	02	01			Integrate and Test PPS	12-Jan-07	26-Jan-07	S	C	SL_CE	Hrs	40			4,747		4,747
1	03	02	02			Beam Containment System (BCS)							307	11,300	29,086	12,996	42,082	
1	03	02	02			Procure BCS PLIC/LION System HV Power Supply Cha	3-Oct-06	23-Oct-06	S	C	SL_MSEG	\$\$		800			920	920
1	03	02	02			Procure Gas System - BCS PLIC/LION Regulators/Fi	3-Oct-06	23-Oct-06	S	C	SL_MSEG	\$\$		250			288	288
1	03	02	02			Procure BCS PLIC/LION Gas Bottle(s) & Bottle(s)	3-Oct-06	31-Oct-06	S	C	SL_MSEG	\$\$		250			288	288
1	03	02	02			Procure BCS PLIC/LION Cableplant Heliax, Andre	3-Oct-06	31-Oct-06	S	C	SA_MSEG	\$\$		10,000			11,500	11,500
1	03	02	02			Prep Bid Pak - BCS PLIC/LION Cableplant	3-Oct-06	9-Oct-06	S	C	SL_CE	Hrs	2			237		237
1	03	02	02			Evaluate Proposals - BCS PLIC/LION Cableplant	17-Oct-06	23-Oct-06	S	C	SL_CE	Hrs	2			119		119
1	03	02	02			Perform Pre-Installation Qual Test on BCS LTU	1-Nov-06	30-Nov-06	S	C	SL_CCA	Hrs	24			1,659		1,659
1	03	02	02			Write S/W and Documentation to Integrate BCS	3-Oct-05	11-Nov-05	S	C	SL_CP	Hrs	160			14,963		14,963
1	03	02	02			Integrate and Test BCS	14-Nov-05	29-Nov-05	S	C	SL_CP	Hrs	80			7,482		7,482
1	03	02	02			Integrate and Test BCS	14-Nov-05	29-Nov-05	S	C	SL_CE	Hrs	40			4,626		4,626
1	03	02	03			Machine Protection System (MPS)							469	38,840	44,161	43,500	87,661	
1	03	02	03			Prep Bid Pak - PIC Modules	3-Oct-05	21-Oct-05	S	C	SL_CE	Hrs	8			925		925
1	03	02	03			Prep Assy Pak - TC Reference Planes Modules	24-Oct-05	11-Nov-05	S	C	SL_CE	Hrs	8			925		925
1	03	02	03			Evaluate Proposals - PIC Modules	14-Dec-05	11-Jan-06	S	C	SL_CE	Hrs	40			4,626		4,626
1	03	02	03			Vendor Fab/Assy - PIC Modules	13-Jan-06	5-Jul-06	S	C	SA_MSEG	\$\$		12,000			13,440	13,440
1	03	02	03			Procure TC Reference Plane material (as required)	3-Oct-05	28-Oct-05	S	C	SL_MSEG	\$\$		920			1,030	1,030
1	03	02	03			Fab and Pre Assemble TC Ref. Planes (as required)	31-Oct-05	29-Nov-05	S	C	SL_PCEF	Hrs	40			2,534		2,534
1	03	02	03			Procure Cable TC Reference Plane material	3-Oct-05	28-Oct-05	S	C	SL_MSEG	\$\$		920			1,030	1,030
1	03	02	03			Fab Cable, Coax, PIC Module to PIC Detector (6)	31-Oct-05	29-Nov-05	S	C	SL_PCEF	Hrs	6			380		380
1	03	02	03			Fab Cable, Coax, HV P.S. to PIC Detector (6)	31-Oct-05	29-Nov-05	S	C	SL_PCEF	Hrs	6			380		380
1	03	02	03			Fab Cable,1553, PIC Module Chain to VME A.P. Cra	31-Oct-05	29-Nov-05	S	C	SL_PCEF	Hrs	3			190		190
1	03	02	03			Fab Cable,8/C, HV P.S. to X-connects (P.S. Statu	31-Oct-05	29-Nov-05	S	C	SL_PCEF	Hrs	2			127		127
1	03	02	03			Fab Cable,4/C, HV P.S. to X-connects (HV Enable)	31-Oct-05	29-Nov-05	S	C	SL_PCEF	Hrs	2			127		127
1	03	02	03			Fab and Pre Assemble PIC Components (as reqd)	30-Nov-05	11-Jan-06	S	C	SL_PCEF	Hrs	10			633		633
1	03	02	03			Perform Pre-Installation Qual Test on Linac MPS	6-Jul-06	2-Aug-06	S	C	SL_CCA	Hrs	24			1,617		1,617
1	03	02	03			Evaluate Proposals - BSOIC	21-Nov-05	6-Dec-05	S	C	SL_CE	Hrs	40			4,626		4,626
1	03	02	03			Vendor Fab/Assy - BSOIC	8-Dec-05	15-May-06	S	C	SA_MSEG	\$\$		25,000			28,000	28,000
1	03	02	03			Write Software and Doc. to Integrate MPS	16-May-06	12-Jul-06	S	C	SL_CP	Hrs	160			14,963		14,963
1	03	02	03			Integrate and Test MPS Hardware and Software	13-Jul-06	9-Aug-06	S	C	SL_CP	Hrs	80			7,482		7,482
1	03	02	03			Integrate and Test MPS Hardware and Software	13-Jul-06	9-Aug-06	S	C	SL_CE	Hrs	40			4,626		4,626
1	03	02	04			Linac Power Conversion Subsystem							10,893	1,061,789	875,686	1,212,960	2,088,646	
1	03	02	04	00		Linac Power Conversion Infrastructure												
1	03	02	04	01		Beamline Power Supplies - (Dipole Type)							2,474	136,581	254,601	156,619	411,220	
1	03	02	04	01		Finalize Power Conv Reqmts Definition (Dipole)	11-Jul-05	15-Jul-05	P		SL_PCE	Hrs	40			4,500		4,500
1	03	02	04	01		Dev Engr (43 instaces - 18 types) PED	18-Jul-05	16-Dec-05	P		SL_PCE	Hrs	409			46,655		46,655
1	03	02	04	01		Dev Engr (43 instaces - 18 types) CONST	3-Jan-06	5-Jun-07	L		SL_PCE	Hrs	1,337			156,489		156,489
1	03	02	04	01		Create System Drawings	3-Jan-06	25-Jul-07	L		SL_PCCA	Hrs	688			46,957		46,957
1	03	02	04	01	01	30KW PS - (B11-14)							-	14,937	-	16,729	16,729	
1	03	02	04	01	01	Procure 30kw Pwr Supply (B11-14) - Hardware	3-Oct-05	10-Mar-06	S	C	SL_MSEG	\$\$		14,937			16,729	16,729
1	03	02	04	01	02	B21-26							-	23,394	-	26,903	26,903	
1	03	02	04	01	02	Procure 78kw Pwr Supply (B21-26) - Hardware	3-Oct-06	12-Mar-07	S	C	SL_MSEG	\$\$		23,394			26,903	26,903

LCLS TPC Detailed Cost Estimate (FY05FY09)

5/5/2005

WBS Level						LCLA DCE March-2005 Description	Early Start	Early Finish	OBS	Fund Type	Res Code	Units	Budgeted Quantity		Fully Burdened and Escalated Cost		
Run Time: 4/22/05 8:43am													Hours	\$	Labor	M&S	Total (No Conting)
1	03	02	04	01	03	78KW PS - (B31-34)							-	23,394	-	26,903	26,903
1	03	02	04	01	03	Procure 78kw Pwr Supply 9B31-34) - Hardware	3-Oct-06	12-Mar-07	S	C	SL_MSEG	\$\$		23,394		26,903	26,903
1	03	02	04	01	04	X-Band Modulator PS											
1	03	02	04	01	05	BY1							-	10,482	-	12,054	12,054
1	03	02	04	01	05	Procure Power Supply (BY1) - Hardware	3-Oct-06	12-Mar-07	S	C	SL_MSEG	\$\$		10,482		12,054	12,054
1	03	02	04	01	06	Kicker (BYBKIK)							-	40,980	-	47,127	47,127
1	03	02	04	01	06	Prep Bid Package - Pwr Supply - Dipole Type	10-Apr-07	16-Apr-07		C	SL_PCCA	Hrs		-		-	-
1	03	02	04	01	06	Evaluate Vendors Prep Proposals	24-Apr-07	30-Apr-07		C	SL_PCCA	Hrs		-		-	-
1	03	02	04	01	06	Fab & Assy- Power Supply - (Dipole Type)	2-May-07	21-Sep-07	S	C	SA_MSEG	\$\$		40,980		47,127	47,127
1	03	02	04	01	07	30kw Pwr Supply - (BYW)											
1	03	02	04	01	08	78kw Pwr Supply - (Dump Bend)							-	23,394	-	26,903	26,903
1	03	02	04	01	08	Procure 78kw Pwr Supply - (Dump Bend)	3-Oct-06	12-Mar-07	S	C	SL_MSEG	\$\$		23,394		26,903	26,903
1	03	02	04	01	09	100kw Pwr Supply - (Wiggler)											
1	03	02	04	02		Beamline Power Supplies - (Quad Type)							52	351,141	5,721	403,101	408,822
1	03	02	04	02		Finalize Power Conv Reqmts Definition (Quad)	11-Jul-05	15-Jul-05		P	SL_PCE	Hrs	24		2,700		2,700
1	03	02	04	02		Conduct ES&H Review - (Quad Type)	18-Jul-05	19-Jul-05		P	SL_PCE	Hrs	24		2,700		2,700
1	03	02	04	02	01	2KW PS - (SEC-23)							-	11,537	-	13,268	13,268
1	03	02	04	02	01	Procure 2kw Pwr Supply - (Sec 23)	3-Oct-06	12-Mar-07	S	C	SL_MSEG	\$\$		11,537		13,268	13,268
1	03	02	04	02	02	2KW PS - (SEC-24)							-	11,537	-	13,268	13,268
1	03	02	04	02	02	Procure 2kw Pwr Supply - (Sec 24)	3-Oct-06	12-Mar-07	S	C	SL_MSEG	\$\$		11,537		13,268	13,268
1	03	02	04	02	03	2KW PS - (SEC-25)							-	11,537	-	13,268	13,268
1	03	02	04	02	03	Procure 2kw Pwr Supply - (Sec 25)	3-Oct-06	12-Mar-07	S	C	SL_MSEG	\$\$		11,537		13,268	13,268
1	03	02	04	02	04	2KW PS - (SEC-26)							-	11,537	-	13,268	13,268
1	03	02	04	02	04	Procure2kw Pwr Supply - (Sec 26)	3-Oct-06	12-Mar-07	S	C	SL_MSEG	\$\$		11,537		13,268	13,268
1	03	02	04	02	05	2KW PS - (SEC-27)							-	11,537	-	13,268	13,268
1	03	02	04	02	05	Procure 2kw Pwr Supply - (Sec 27)	3-Oct-06	12-Mar-07	S	C	SL_MSEG	\$\$		11,537		13,268	13,268
1	03	02	04	02	06	2KW PS - (SEC-28)							-	11,537	-	13,268	13,268
1	03	02	04	02	06	Procure 2kw Pwr Supply - (Sec 28)	3-Oct-06	12-Mar-07	S	C	SL_MSEG	\$\$		11,537		13,268	13,268
1	03	02	04	02	07	2KW PS - (SEC-29)							-	11,537	-	13,268	13,268
1	03	02	04	02	07	Procure 2kw Pwr Supply - (Sec 29)	3-Oct-06	12-Mar-07	S	C	SL_MSEG	\$\$		11,537		13,268	13,268
1	03	02	04	02	08	10KW PS - (Q24701)							-	10,482	-	12,054	12,054
1	03	02	04	02	08	Procure 10kw Pwr Supply - (Q24701)	3-Oct-06	12-Mar-07	S	C	SL_MSEG	\$\$		10,482		12,054	12,054
1	03	02	04	02	09	10KW PS - (QM21)							-	12,704	-	14,228	14,228
1	03	02	04	02	09	Procure 10kw Pwr Supply (QM21)	3-Oct-05	10-Mar-06	S	C	SL_MSEG	\$\$		12,704		14,228	14,228
1	03	02	04	02	10	10KW PS - (QM22)							-	11,204	-	12,885	12,885
1	03	02	04	02	11	10KW PS - (Q24901)							-	11,204	-	12,548	12,548
1	03	02	04	02	11	Procure 10kw Pwr Supply (Q24901)	3-Oct-06	12-Mar-07	S	C	SL_MSEG	\$\$		11,204		12,885	12,885
1	03	02	04	02	12	10KW PS - (QM22)							-	11,204	-	12,548	12,548
1	03	02	04	02	12	Procure 10kw Pwr Supply (QM22)	3-Oct-05	10-Mar-06	S	C	SL_MSEG	\$\$		11,204		12,548	12,548
1	03	02	04	02	13	QVM1							-	10,482	-	12,054	12,054
1	03	02	04	02	13	Procure QVM1 Pwr Supply 10kw	3-Oct-06	12-Mar-07	S	C	SL_MSEG	\$\$		10,482		12,054	12,054
1	03	02	04	02	14	QVM2							-	10,482	-	12,054	12,054
1	03	02	04	02	14	Procure QVM2 Pwr Supply 10kw	3-Oct-06	12-Mar-07	S	C	SL_MSEG	\$\$		10,482		12,054	12,054
1	03	02	04	02	15	QVM3							-	10,482	-	12,054	12,054
1	03	02	04	02	15	Procure QVM3 Pwr Supply 10kw	3-Oct-06	12-Mar-07	S	C	SL_MSEG	\$\$		10,482		12,054	12,054
1	03	02	04	02	16	QVM4							-	10,482	-	12,054	12,054
1	03	02	04	02	16	Procure QVM4 Pwr Supply 10kw	3-Oct-06	12-Mar-07	S	C	SL_MSEG	\$\$		10,482		12,054	12,054
1	03	02	04	02	17	QVB1							-	10,482	-	12,054	12,054
1	03	02	04	02	17	Procure QVB1 Pwr Supply 10kw	3-Oct-06	12-Mar-07	S	C	SL_MSEG	\$\$		10,482		12,054	12,054
1	03	02	04	02	18	QDL1							-	10,482	-	12,054	12,054
1	03	02	04	02	18	Procure QDL1 Pwr Supply 10kw	3-Oct-06	12-Mar-07	S	C	SL_MSEG	\$\$		10,482		12,054	12,054
1	03	02	04	02	19	QE31							-	9,245	-	10,632	10,632
1	03	02	04	02	19	Procure Power Supply - (QE31)	3-Oct-06	12-Mar-07	S	C	SL_MSEG	\$\$		9,245		10,632	10,632
1	03	02	04	02	20	QEM1							-	12,704	-	14,610	14,610
1	03	02	04	02	20	Procure Power Supply - (QEM1)	3-Oct-06	12-Mar-07	S	C	SL_MSEG	\$\$		12,704		14,610	14,610
1	03	02	04	02	21	QEM2							-	12,704	-	14,610	14,610
1	03	02	04	02	21	Procure Power Supply - (QEM2)	3-Oct-06	12-Mar-07	S	C	SL_MSEG	\$\$		12,704		14,610	14,610
1	03	02	04	02	22	QEM3							-	12,704	-	14,610	14,610
1	03	02	04	02	22	Procure Power Supply - (QEM3)	3-Oct-06	12-Mar-07	S	C	SL_MSEG	\$\$		12,704		14,610	14,610
1	03	02	04	02	23	QEM4							4	12,704	321	14,610	14,931
1	03	02	04	02	23	Procure Power Supply - (QEM4) - 10kw	3-Oct-06	12-Mar-07	S	C	SL_MSEG	\$\$		12,704		14,610	14,610
1	03	02	04	02	23	Integrate Magnet Interlock	13-Mar-07	13-Mar-07	S	C	SL_TMUI	Hrs	4		321		321
1	03	02	04	02	24	QTm1							-	12,704	-	14,610	14,610
1	03	02	04	02	24	Procure Power Supply - (QTm1) - 10kw	3-Oct-06	12-Mar-07	S	C	SL_MSEG	\$\$		12,704		14,610	14,610

LCLS TPC Detailed Cost Estimate (FY05FY09)

5/5/2005

WBS Level						LCLA DCE March-2005 Description	Early Start	Early Finish	OBS	Fund Type	Res Code	Units	Budgeted Quantity		Fully Burdened and Escalated Cost		
Run Time: 4/22/05 8:43am													Hours	\$	Labor	M&S	Total (No Conting)
1	03	02	04	02	25	QTm2							-	12,704	-	14,610	14,610
1	03	02	04	02	25	Procure Power Supply - (QTm2) - 10kw	3-Oct-06	12-Mar-07	S	C	SL_MSEG	\$\$		12,704		14,610	14,610
1	03	02	04	02	26	QUM1							-	12,704	-	14,610	14,610
1	03	02	04	02	26	Procure Power Supply - (QUM1) - 10kw	3-Oct-06	12-Mar-07	S	C	SL_MSEG	\$\$		12,704		14,610	14,610
1	03	02	04	02	27	QUM2							-	12,704	-	14,610	14,610
1	03	02	04	02	27	Procure Power Supply - (QUM2) - 10kw	3-Oct-06	12-Mar-07	S	C	SL_MSEG	\$\$		12,704		14,610	14,610
1	03	02	04	02	28	QUM3							-	12,704	-	14,610	14,610
1	03	02	04	02	28	Procure Power Supply - (QUM3) - 10kw	3-Oct-06	12-Mar-07	S	C	SL_MSEG	\$\$		12,704		14,610	14,610
1	03	02	04	02	29	QUM4							-	12,704	-	14,610	14,610
1	03	02	04	02	29	Procure Power Supply - (QUM4) - 10kw	3-Oct-06	12-Mar-07	S	C	SL_MSEG	\$\$		12,704		14,610	14,610
1	03	02	04	02	30	Power Supply - (QDMP)							-	8,537	-	9,818	9,818
1	03	02	04	02	30	Procure Power Supply - (QDMP)	3-Oct-06	12-Mar-07	S	C	SL_MSEG	\$\$		8,537		9,818	9,818
1	03	02	04	02	31	Power Supply - (QUE1)							-	8,537	-	9,818	9,818
1	03	02	04	02	31	Procure Power Supply - (QUE1) - 10kw	3-Oct-06	12-Mar-07	S	C	SL_MSEG	\$\$		8,537		9,818	9,818
1	03	02	04	02	32	Power Supply - (QUE2)							-	8,537	-	9,818	9,818
1	03	02	04	02	32	Procure Power Supply - (QUE2) - 10kw	3-Oct-06	12-Mar-07	S	C	SL_MSEG	\$\$		8,537		9,818	9,818
1	03	02	04	03	Beamline Power Supplies - (Trim Type)								256	325,980	23,893	371,616	395,509
1	03	02	04	03	Finalize Power Conv Reqmts Definition (Trim)		11-Jul-05	15-Jul-05	P		SL_PCE	Hrs	40		4,500		4,500
1	03	02	04	03	01	MCOR_1 (12Amp)							12	36,390	1,188	40,757	41,945
1	03	02	04	03	01	Procure 12Amp Pwr Supply-(MCOR_1)(7-12Amp modul	3-Oct-05	10-Mar-06	S	C	SL_MSEG	\$\$		36,390		40,757	40,757
1	03	02	04	03	01	Integrate Cables	13-Mar-06	14-Mar-06	C		SL_TMUE	Hrs	12		1,188		1,188
1	03	02	04	03	02	MCOR_2 (30Amp)							12	36,230	1,188	40,578	41,766
1	03	02	04	03	02	Procure 30Amp Pwr Supply-(MCOR_2)(7-30Amp modul	3-Oct-05	10-Mar-06	S	C	SL_MSEG	\$\$		36,230		40,578	40,578
1	03	02	04	03	02	Integrate Cables	13-Mar-06	14-Mar-06	C		SL_TMUE	Hrs	12		1,188		1,188
1	03	02	04	03	03	MCOR_3 (30Amp)							12	36,230	1,219	41,665	42,884
1	03	02	04	03	03	Procure 30Amp Pwr Supply-(MCOR_3)(7-30Amp modul	3-Oct-06	12-Mar-07	S	C	SL_MSEG	\$\$		36,230		41,665	41,665
1	03	02	04	03	03	Integrate Cables	13-Mar-07	14-Mar-07	C		SL_TMUE	Hrs	12		1,219		1,219
1	03	02	04	03	04	MCOR_4 (30Amp)							12	36,230	1,188	40,578	41,766
1	03	02	04	03	04	Procure 30Amp Pwr Supply-(MCOR_4)(7-30Amp modul	3-Oct-05	10-Mar-06	S	C	SL_MSEG	\$\$		36,230		40,578	40,578
1	03	02	04	03	04	Integrate Cables	13-Mar-06	14-Mar-06	C		SL_TMUE	Hrs	12		1,188		1,188
1	03	02	04	03	05	MCOR_5 (12Amp)											
1	03	02	04	03	06	MCOR_6 (12Amp)											
1	03	02	04	03	07	MCOR_7 (12Amp)											
1	03	02	04	03	08	MCOR_8 (12Amp)											
1	03	02	04	03	09	MCOR_9 (12Amp)											
1	03	02	04	03	10	MCOR_LTU1							12	30,150	1,219	34,673	35,892
1	03	02	04	03	10	Procure Power Supply-(MCOR_LTU1)(5-12Amp module	3-Oct-06	12-Mar-07	S	C	SL_MSEG	\$\$		30,150		34,673	34,673
1	03	02	04	03	10	Integrate Cables	13-Mar-07	14-Mar-07	C		SL_TMUE	Hrs	12		1,219		1,219
1	03	02	04	03	11	MCOR_LTU2							12	30,150	1,219	34,673	35,892
1	03	02	04	03	11	Procure Power Supply-(MCOR_LTU2)	3-Oct-06	12-Mar-07	S	C	SL_MSEG	\$\$		30,150		34,673	34,673
1	03	02	04	03	11	Integrate Cables	13-Mar-07	14-Mar-07	C		SL_TMUE	Hrs	12		1,219		1,219
1	03	02	04	03	12	MCOR_LTU3							12	30,150	1,219	34,673	35,892
1	03	02	04	03	12	Procure Power Supply-(MCOR_LTU3)	3-Oct-06	12-Mar-07	S	C	SL_MSEG	\$\$		30,150		34,673	34,673
1	03	02	04	03	12	Integrate Cables	13-Mar-07	14-Mar-07	C		SL_TMUE	Hrs	12		1,219		1,219
1	03	02	04	03	13	MCOR_LTU4							108	30,150	8,515	34,673	43,188
1	03	02	04	03	13	Procure Power Supply-(MCOR_LTU4)	3-Oct-06	12-Mar-07	S	C	SL_MSEG	\$\$		30,150		34,673	34,673
1	03	02	04	03	13	Assemble Pwr Supply, Transductor & Control	13-Mar-07	20-Mar-07	S	C	SL_PCT	Hrs	32		2,080		2,080
1	03	02	04	03	13	Assemble Pwr Supply, Transductor & Control	13-Mar-07	20-Mar-07	S	C	SL_PCE	Hrs	16		1,899		1,899
1	03	02	04	03	13	Assemble Pwr Supply, Transductor & Control	13-Mar-07	20-Mar-07	S	C	SL_PCCA	Hrs	48		3,317		3,317
1	03	02	04	03	13	Integrate Cables	21-Mar-07	22-Mar-07	C		SL_TMUE	Hrs	12		1,219		1,219
1	03	02	04	03	14	MCOR_LTU5							12	30,150	1,219	34,673	35,892
1	03	02	04	03	14	Procure Power Supply-(MCOR_LTU5)	3-Oct-06	12-Mar-07	S	C	SL_MSEG	\$\$		30,150		34,673	34,673
1	03	02	04	03	14	Integrate Cables	13-Mar-07	14-Mar-07	C		SL_TMUE	Hrs	12		1,219		1,219
1	03	02	04	03	15	MCOR_LTU6							12	30,150	1,219	34,673	35,892
1	03	02	04	03	15	Procure Power Supply-(MCOR_LTU6)	3-Oct-06	12-Mar-07	S	C	SL_MSEG	\$\$		30,150		34,673	34,673
1	03	02	04	03	15	Integrate Cables	13-Mar-07	14-Mar-07	C		SL_TMUE	Hrs	12		1,219		1,219
1	03	02	04	04	Beamline Power Supplies - Misc Hdwr								8,111	248,087	591,471	281,624	873,095
1	03	02	04	04	Engineering (Layouts/Raceways/Supports)		2-May-05	27-May-05	P		SL_ME	Hrs	20		2,114		2,114
1	03	02	04	04	Engineering (Layouts/Raceways/Supports)		2-May-05	27-May-05	P		SL_CE	Hrs	240		27,002		27,002
1	03	02	04	04	Engineering (Layouts/Raceways/Supports)		2-May-05	27-May-05	P		SL_CCA	Hrs	480		31,454		31,454
1	03	02	04	04	Cableplant/Rack System Drafting (Bid Doc's)		16-May-05	13-Jun-05	P		SL_CCA	Hrs	720		47,182		47,182
1	03	02	04	04	Captar Liason, Documents & Data Entry (Bid Doc's)		14-Jun-05	27-Jun-05	P		SL_CT	Hrs	120		7,394		7,394
1	03	02	04	04	Captar Liason, Documents & Data Entry (Bid Doc's)		14-Jun-05	27-Jun-05	P		SL_CCA	Hrs	120		7,864		7,864
1	03	02	04	04	Conduct SLAC Citizen Committee Reviews		28-Jun-05	12-Jul-05	L		SL_CE	Hrs	24		2,700		2,700

LCLS TPC Detailed Cost Estimate (FY05FY09)

5/5/2005

WBS Level						LCLA DCE March-2005 Description	Early Start	Early Finish	OBS	Fund Type	Res Code	Units	Budgeted Quantity		Fully Burdened and Escalated Cost			
Run Time: 4/22/05 8:43am													Hours	\$\$	Labor	M&S	Total (No Conting)	
1	2	3	4	5	6													
1	03	02	04	04		Conduct Design Review - Linac and Hall Racks/Tra	13-Jul-05	13-Jul-05		L	SL_CE	Hrs	8			900		900
1	03	02	04	04		Write Software to Integrate	3-Oct-05	11-Jan-06		C	SL_CP	Hrs	984			92,024		92,024
1	03	02	04	04		Write Documentation	12-Jan-06	26-Jan-06		P	SL_CP	Hrs	40			3,741		3,741
1	03	02	04	04		Perform Point to Point Checkout	27-Jan-06	21-Apr-06		C	SL_CP	Hrs	394			36,847		36,847
1	03	02	04	04		Integrate Hardware and Software	24-Apr-06	5-May-06		C	SL_CP	Hrs	46			4,302		4,302
1	03	02	04	04		Integrate Hardware and Software	24-Apr-06	5-May-06		C	SL_CE	Hrs	40			4,626		4,626
1	03	02	04	04		Procure AC Breakers (108)	3-Oct-05	11-Jan-06		C	SL_MSEG	\$\$		9,600			10,752	10,752
1	03	02	04	04		Procure PS Hubble Plug (80)	3-Oct-05	11-Jan-06		C	SL_MSEG	\$\$		5,175			5,796	5,796
1	03	02	04	04		Procure 3 Phase Dist Bus (27)	3-Oct-05	11-Jan-06		C	SL_MSEG	\$\$		8,235			9,223	9,223
1	03	02	04	04		Procure Circuit Breaker Panels (27)	3-Oct-05	11-Jan-06		C	SL_MSEG	\$\$		1,161			1,300	1,300
1	03	02	04	04		Procure Neutral/Ground Pnl. (27)	3-Oct-05	11-Jan-06		C	SL_MSEG	\$\$		9,990			11,189	11,189
1	03	02	04	04		Procure Blank Panels (27)	3-Oct-05	11-Jan-06		C	SL_MSEG	\$\$		2,100			2,352	2,352
1	03	02	04	04		Procure AC Wire	3-Oct-05	11-Jan-06		C	SL_MSEG	\$\$		750			840	840
1	03	02	04	04		Procure Breaker Lock-outs	3-Oct-05	11-Jan-06		C	SL_MSEG	\$\$		600			672	672
1	03	02	04	04		Procure Rack Cooling Fans	3-Oct-05	11-Jan-06		C	SL_MSEG	\$\$		3,600			4,032	4,032
1	03	02	04	04		Procure Rack Hardware (Single Rack)	3-Oct-05	11-Jan-06		C	SL_MSEG	\$\$		650			728	728
1	03	02	04	04		Procure Rack Hardware (Double Rack)	3-Oct-05	11-Jan-06		C	SL_MSEG	\$\$		650			728	728
1	03	02	04	04		Prep Bid Pak - Single Bay Racks (DC/I&C)	3-Oct-05	21-Oct-05		C	SL_PCE	Hrs	8			925		925
1	03	02	04	04		Evaluate Proposals - Single Bay Racks (DC/I&C)	13-Dec-05	18-Jan-06		C	SL_PCE	Hrs	8			925		925
1	03	02	04	04		Vendor Fab/Assy - Single Bay Racks	8-Feb-06	28-Jul-06		C	SA_MSEG	\$\$		48,000			53,760	53,760
1	03	02	04	04		Integrate Rack Hardware & Internal AC Wiring-S1	6-Apr-06	29-Jun-06		C	SL_PCEF	Hrs	146			9,248		9,248
1	03	02	04	04		Integrate Rack-Mnted Pwr Supplies & Intra-Cables	16-Jun-06	11-Sep-06		C	SL_PCEF	Hrs	405			25,653		25,653
1	03	02	04	04		Integrate Rack/Crate-Mnted Controls & Intra-Cbils	30-Jun-06	25-Aug-06		C	SL_PCEF	Hrs	270			17,102		17,102
1	03	02	04	04		Integrate Rack Hardware & Internal AC Wiring-S2	2-Jun-06	25-Aug-06		C	SL_PCEF	Hrs	90			5,701		5,701
1	03	02	04	04		Integrate Rack-Mnted Pwr Supplies & Intra-Cables	26-Jul-07	18-Oct-07		C	SL_PCEF	Hrs	270			17,654		17,654
1	03	02	04	04		Integrate Rack/Crate-Mnted Controls & Intra-Cbils	28-Aug-06	20-Nov-06		C	SL_PCEF	Hrs	180			11,579		11,579
1	03	02	04	04		Integrate Rack Hardware & Internal AC Wiring-S3	31-Jul-06	23-Oct-06		C	SL_PCEF	Hrs	81			5,166		5,166
1	03	02	04	04		Integrate Rack-Mnted Pwr Supplies & Intra-Cables	24-Sep-07	3-Jan-08		C	SL_PCEF	Hrs	216			14,372		14,372
1	03	02	04	04		Integrate Rack/Crate-Mnted Controls & Intra-Cbils	22-Mar-07	14-Jun-07		C	SL_PCEF	Hrs	146			9,489		9,489
1	03	02	04	04		Prep Bid Pak - Double Bay Racks	3-Oct-05	21-Oct-05		C	SL_PCE	Hrs	8			925		925
1	03	02	04	04		Evaluate Proposals - Double Bay Racks	13-Dec-05	18-Jan-06		C	SL_PCE	Hrs	8			925		925
1	03	02	04	04		Vendor Fab/Assy - Double Bay Racks	8-Feb-06	29-Jun-06		C	SA_MSEG	\$\$		32,000			35,840	35,840
1	03	02	04	04		Integrate Rack Hardware & Internal AC Wiring-S1	6-Apr-06	29-Jun-06		C	SL_PCEF	Hrs	216			13,681		13,681
1	03	02	04	04		Integrate Rack-Mnted Pwr Supplies & Intra-Cables	4-May-06	28-Jul-06		C	SL_PCEF	Hrs	450			28,503		28,503
1	03	02	04	04		Perform Pre-install Testing Power Supplies-Set 1	16-Jun-06	18-Aug-06		C	SL_CCA	Hrs	180			12,125		12,125
1	03	02	04	04		Integrate Rack/Crate-Mnted Controls & Intra-Cbils	31-May-06	23-Aug-06		C	SL_PCEF	Hrs	270			17,102		17,102
1	03	02	04	04		Perform Pre-install Testing Controls - Set 1	18-Jul-06	28-Aug-06		C	SL_CCA	Hrs	120			8,083		8,083
1	03	02	04	04		Integrate Rack Hardware & Internal AC Wiring-S2	18-May-06	14-Jul-06		C	SL_PCEF	Hrs	146			9,248		9,248
1	03	02	04	04		Integrate Rack-Mnted Pwr Supplies & Intra-Cables	26-Jul-07	2-Jan-08		C	SL_PCEF	Hrs	360			23,725		23,725
1	03	02	04	04		Perform Pre-install Testing Power Supplies-Set 2	9-Aug-07	11-Oct-07		C	SL_CCA	Hrs	120			8,336		8,336
1	03	02	04	04		Integrate Rack/Crate-Mnted Controls & Intra-Cbils	16-Oct-06	20-Apr-07		C	SL_PCEF	Hrs	270			17,547		17,547
1	03	02	04	04		Perform Pre-install Testing Controls - Set 2	23-Apr-07	4-Jun-07		C	SL_CCA	Hrs	80			5,529		5,529
1	03	02	04	04		Integrate Rack Hardware & Internal AC Wiring-S3	30-Jun-06	4-Jan-07		C	SL_PCEF	Hrs	59			3,782		3,782
1	03	02	04	04		Integrate Rack-Mnted Pwr Supplies & Intra-Cables	23-Mar-07	11-Sep-07		C	SL_PCEF	Hrs	216			14,038		14,038
1	03	02	04	04		Perform Pre-install Testing Power Supplies-Set 3	6-Apr-07	8-Jun-07		C	SL_CCA	Hrs	120			8,293		8,293
1	03	02	04	04		Integrate Rack/Crate-Mnted Controls & Intra-Cbils	4-May-07	23-Oct-07		C	SL_PCEF	Hrs	270			17,612		17,612
1	03	02	04	04		Perform Pre-install Testing Controls - Set 3	24-Oct-07	6-Dec-07		C	SL_CCA	Hrs	60			4,255		4,255
1	03	02	04	04		Prep Bid Pak - Cable Tray Material- Tray and Div	3-Oct-05	21-Oct-05		C	SL_PCE	Hrs	24			2,776		2,776
1	03	02	04	04		Evaluate Proposals - Cable Tray Material- Tray a	10-Nov-05	11-Nov-05		C	SL_PCE	Hrs	6			694		694
1	03	02	04	04		Vendor Fab - Cable Tray Material	23-Oct-06	1-Feb-07		C	SA_MSEG	\$\$		82,016			94,318	94,318
1	03	02	04	04		Procure Cable Tray Fittings (DC&IC)	3-Oct-06	9-Apr-07		C	SL_MSEG	\$\$		9,000			10,350	10,350
1	03	02	04	04		Procure Trapeze Cable Tray Supports (DC&IC) 300	3-Oct-06	9-Apr-07		C	SL_MSEG	\$\$		27,000			31,050	31,050
1	03	02	04	04		Procure Cable Tray Grounding (DC&IC, \$1.8/ft)	3-Oct-06	9-Apr-07		C	SL_MSEG	\$\$		5,400			6,210	6,210
1	03	02	04	04		Procure Gnd Jumpers (DC&IC)	3-Oct-06	9-Apr-07		C	SL_MSEG	\$\$		2,160			2,484	2,484
1	03	02	04	04		Prep Bid Pak - Linac Cableplant Installation-all	3-Oct-05	21-Oct-05		C	SL_PCE	Hrs	48			5,552		5,552
1	03	02	04	04		Evaluate Proposals - Linac Cableplant Instl Cntr	11-Jan-06	25-Jan-06		C	SL_PCE	Hrs	24			2,776		2,776
1	03	02	05			Controls - LLRF							1,804	24,771	156,505	27,744	184,249	
1	03	02	05			Procure Linac LLRF Hardware	3-Oct-05	11-Jan-06	S	C	SL_MSEG	\$\$		21,771			24,384	24,384
1	03	02	05			Build LLRF H/W and Write Docmntatn (sec 24/30)	29-Nov-05	11-Jan-06		C	SL_PCEF	Hrs	168			10,641		10,641
1	03	02	05			Build LLRF H/W and Write Docmntatn (sec 24/30)	29-Nov-05	11-Jan-06		C	SL_CP	Hrs	60			5,611		5,611
1	03	02	05			Build LLRF H/W and Write Docmntatn (sec 24/30)	29-Nov-05	11-Jan-06		C	SL_CE	Hrs	20			2,313		2,313
1	03	02	05			Write LLRF S/W Docmntatn (sec 24/30)	8-Aug-05	12-Aug-05		L	SL_CP	Hrs	60			5,458		5,458
1	03	02	05			Integrate and Test (sec 24/30)	12-Jan-06	20-Mar-06		C	SL_CP	Hrs	320			29,926		29,926
1	03	02	05			Integrate and Test (sec 24/30)	12-Jan-06	20-Mar-06		C	SL_CE	Hrs	60			6,940		6,940

LCLS TPC Detailed Cost Estimate (FY05FY09)

5/5/2005

WBS Level						LCLA DCE March-2005 Description	Early Start	Early Finish	OBS	Fund Type	Res Code	Units	Budgeted Quantity		Fully Burdened and Escalated Cost		
Run Time: 4/22/05 8:43am													Hours	\$	Labor	M&S	Total (No Conting)
1	03	02	05	5	6	Integrate and Test (sec 24/30)	12-Jan-06	20-Mar-06		C	SL_CCA	Hrs	200		13,472		13,472
1	03	02	05			Procure LLRF BL Mon Cntrls hardware	3-Oct-05	11-Jan-06	S	C	SL_MSEG	\$\$		3,000		3,360	3,360
1	03	02	05			Integrate and Test (BLM sec 24/30)	12-Jan-06	20-Mar-06		C	SL_PCEF	Hrs	168		10,641		10,641
1	03	02	05			Integrate and Test (BLM sec 24/30)	12-Jan-06	20-Mar-06		C	SL_CP	Hrs	678		63,407		63,407
1	03	02	05			Integrate and Test (BLM sec 24/30)	12-Jan-06	20-Mar-06		C	SL_CE	Hrs	70		8,096		8,096
1	03	02	06			Controls - E-Beam Diagnostic							8,494	1,042,832	758,775	1,165,219	1,923,994
1	03	02	06	01		Controls - Wire Scanners							1,488	189,000	120,463	211,680	332,143
1	03	02	06	01		Generate Detailed Procurement Plan	3-Oct-05	3-Oct-05	S	P	SL_CE	Hrs	4		463		463
1	03	02	06	01		Establish Subordinate Work Orders	4-Oct-05	4-Oct-05	S	P	SL_CE	Hrs	4		463		463
1	03	02	06	01		Procure Wire Scanner Hardware (5)	17-Oct-05	11-Nov-05	S	C	SA_MSEG	\$\$		189,000		211,680	211,680
1	03	02	06	01		Build Wire Scanner H/W (19)	14-Nov-05	24-Jan-06		C	SL_CT	Hrs	560		35,470		35,470
1	03	02	06	01		Build Wire Scanner H/W (19)	14-Nov-05	24-Jan-06		C	SL_CE	Hrs	80		9,253		9,253
1	03	02	06	01		Write Software - Wire Scanners	11-Nov-05	12-Dec-05	S	C	SL_CP	Hrs	160		14,963		14,963
1	03	02	06	01		Write Documentation - Wire Scanners	13-Dec-05	3-Jan-06	S	C	SL_CP	Hrs	100		9,352		9,352
1	03	02	06	01		Write Documentation - Wire Scanners	13-Dec-05	3-Jan-06	S	C	SL_CE	Hrs	20		2,313		2,313
1	03	02	06	01		Integrate and Test Wire Scanners (19)	25-Jan-06	5-Apr-06		C	SL_CP	Hrs	400		37,408		37,408
1	03	02	06	01		Integrate and Test Wire Scanners (19)	25-Jan-06	5-Apr-06		C	SL_CCA	Hrs	160		10,778		10,778
1	03	02	06	02		Controls - BPMs							1,626	559,675	133,484	623,796	757,280
1	03	02	06	02		Generate Detailed Procurement Plan	1-Mar-05	1-Mar-05	S	P	SL_CE	Hrs	4		450		450
1	03	02	06	02		Establish Subordinate Work Orders	2-Mar-05	2-Mar-05	S	P	SL_CE	Hrs	4		450		450
1	03	02	06	02		Procure BPMs and Cables (143)	4-Oct-05	31-Oct-05	S	C	SA_MSEG	\$\$		500,000		560,000	560,000
1	03	02	06	02		Procure BPMs and Cables (143)	4-Oct-05	31-Oct-05	S	C	SA_MSXX	\$\$		50,675		53,716	53,716
1	03	02	06	02		Procure 50B1 BPMs	4-Oct-05	31-Oct-05	S	C	SL_MSEG	\$\$		9,000		10,080	10,080
1	03	02	06	02		Build LIU H/W	1-Nov-05	8-Feb-06		C	SL_CT	Hrs	278		17,609		17,609
1	03	02	06	02		Write Software - Standard BPMs	1-Mar-05	7-Mar-05	S	P	SL_CP	Hrs	40		3,639		3,639
1	03	02	06	02		Write Documentation- Standard BPMs	8-Mar-05	14-Mar-05	S	P	SL_CP	Hrs	8		728		728
1	03	02	06	02		Write Documentation- Standard BPMs	8-Mar-05	14-Mar-05	S	P	SL_CE	Hrs	8		900		900
1	03	02	06	02		Integrate and Test LIU BPMs	9-Feb-06	21-Mar-06	S	C	SL_CP	Hrs	20		1,870		1,870
1	03	02	06	02		Integrate and Test LIU BPMs	9-Feb-06	21-Mar-06	S	C	SL_CE	Hrs	80		9,253		9,253
1	03	02	06	02		Build RF BPM H/W	3-Oct-05	31-Oct-05		C	SL_CT	Hrs	40		2,534		2,534
1	03	02	06	02		Write Software - RF BPMs	1-Nov-05	30-Nov-05	S	C	SL_CP	Hrs	160		14,963		14,963
1	03	02	06	02		Write Documentation- RF BPMs	1-Dec-05	7-Dec-05	S	C	SL_CP	Hrs	8		748		748
1	03	02	06	02		Write Documentation- RF BPMs	1-Dec-05	7-Dec-05	S	C	SL_CE	Hrs	8		925		925
1	03	02	06	02		Integrate and Test RF BPMs	22-Jun-06	29-Jun-06		C	SL_CP	Hrs	20		1,870		1,870
1	03	02	06	02		Integrate and Test RF BPMs	22-Jun-06	29-Jun-06		C	SL_CE	Hrs	80		9,253		9,253
1	03	02	06	02		Build H/W (4) LTU BPMs	3-Oct-05	1-Nov-05		C	SL_CT	Hrs	278		17,609		17,609
1	03	02	06	02		Write Software - LTU BPMs	2-Nov-05	8-Nov-05	S	C	SL_CP	Hrs	40		3,741		3,741
1	03	02	06	02		Write Documentation- LTU BPMs	9-Nov-05	15-Nov-05	S	C	SL_CP	Hrs	8		748		748
1	03	02	06	02		Write Documentation- LTU BPMs	9-Nov-05	15-Nov-05	S	C	SL_CE	Hrs	8		925		925
1	03	02	06	02		Integrate and Test LTU BPMs	16-Nov-05	29-Nov-05		C	SL_CP	Hrs	20		1,870		1,870
1	03	02	06	02		Integrate and Test LTU BPMs	16-Nov-05	29-Nov-05		C	SL_CE	Hrs	80		9,253		9,253
1	03	02	06	02		Build H/W (4) BC1 BPMs	3-Oct-05	1-Nov-05		C	SL_CT	Hrs	278		17,609		17,609
1	03	02	06	02		Write Software - BC1 BPMs	2-Nov-05	8-Nov-05	S	C	SL_CP	Hrs	40		3,741		3,741
1	03	02	06	02		Write Documentation- BC1 BPMs	9-Nov-05	15-Nov-05	S	C	SL_CP	Hrs	8		748		748
1	03	02	06	02		Write Documentation- BC1 BPMs	9-Nov-05	15-Nov-05	S	C	SL_CE	Hrs	8		925		925
1	03	02	06	02		Integration and Test BC1 BPMs	16-Nov-05	29-Nov-05		C	SL_CP	Hrs	20		1,870		1,870
1	03	02	06	02		Integration and Test BC1 BPMs	16-Nov-05	29-Nov-05		C	SL_CE	Hrs	80		9,253		9,253
1	03	02	06	03		Controls - Toroids							216	40,520	19,267	45,382	64,649
1	03	02	06	03		Procure Torroid Shielding, Preamps, Hardware (6)	4-Oct-05	7-Dec-05	S	C	SA_MSEG	\$\$		40,520		45,382	45,382
1	03	02	06	03		Build Hardware (Toroids)	8-Dec-05	21-Feb-06		C	SL_CT	Hrs	72		4,560		4,560
1	03	02	06	03		Build Hardware (Toroids)	8-Dec-05	21-Feb-06		C	SL_CE	Hrs	24		2,776		2,776
1	03	02	06	03		Write Software - Toroids	22-Feb-06	28-Feb-06	S	C	SL_CP	Hrs	40		3,741		3,741
1	03	02	06	03		Write Documentation - Toroids	1-Mar-06	7-Mar-06	S	C	SL_CP	Hrs	8		748		748
1	03	02	06	03		Write Documentation - Toroids	1-Mar-06	7-Mar-06	S	C	SL_CE	Hrs	8		925		925
1	03	02	06	03		Integrate and Test Toroids	8-Mar-06	23-Mar-06		C	SL_CP	Hrs	40		3,741		3,741
1	03	02	06	03		Integrate and Test Toroids	8-Mar-06	23-Mar-06		C	SL_CE	Hrs	24		2,776		2,776
1	03	02	06	04		Controls - Stoppers							288	12,800	26,764	14,336	41,100
1	03	02	06	04		Procure Stopper Controls Hdwr/Eq	9-Jan-06	6-Feb-06	S	C	SL_MSEG	\$\$		12,800		14,336	14,336
1	03	02	06	04		Build Stopper Controls H/W	7-Feb-06	5-Apr-06	S	C	SL_CT	Hrs	32		2,027		2,027
1	03	02	06	04		Build Stopper Controls H/W	7-Feb-06	5-Apr-06	S	C	SL_CE	Hrs	8		925		925
1	03	02	06	04		Write Software - Stoppers	6-Apr-06	3-May-06	S	C	SL_CP	Hrs	160		14,963		14,963
1	03	02	06	04		Write Documentation - Stoppers	4-May-06	10-May-06	S	C	SL_CP	Hrs	20		1,870		1,870
1	03	02	06	04		Write Documentation - Stoppers	4-May-06	10-May-06	S	C	SL_CE	Hrs	20		2,313		2,313
1	03	02	06	04		Integrate and Test Stopper Controls	11-May-06	16-Jun-06	S	C	SL_CP	Hrs	40		3,741		3,741

LCLS TPC Detailed Cost Estimate (FY05FY09)

5/5/2005

WBS Level						LCLA DCE March-2005 Description	Early Start	Early Finish	OBS	Fund Type	Res Code	Units	Budgeted Quantity		Fully Burdened and Escalated Cost		
Run Time: 4/22/05 8:43am													Hours	\$	Labor	M&S	Total (No Conting)
1	03	02	06	05	6	Integrate and Test Stopper Controls	11-May-06	16-Jun-06	S	C	SL_CE	Hrs	8		925		925
1	03	02	06	05		Controls - Profile Monitors							200	177,493	16,579	198,792	215,371
1	03	02	06	05		Procure Monitor Hardware (20 Units)	4-Oct-05	31-Oct-05	S	C	SA_MSEG	\$\$		173,993		194,872	194,872
1	03	02	06	05		Procure VME Cable - DAC (1)	1-Nov-05	30-Nov-05	S	C	SL_CT	Hrs	40		2,534		2,534
1	03	02	06	05		Build Wire Profile Monitor H/W in Lab (4)	1-Dec-05	8-Dec-05	S	C	SL_CT	Hrs	48		3,040		3,040
1	03	02	06	05		Build Wire Profile Monitor H/W in Lab (4)	1-Dec-05	8-Dec-05	S	C	SL_CE	Hrs	8		925		925
1	03	02	06	05		Write Software - Profile Monitors	9-Dec-05	15-Dec-05	S	C	SL_CP	Hrs	40		3,741		3,741
1	03	02	06	05		Write Documentation - Profile Monitors	16-Dec-05	6-Jan-06	S	C	SL_CP	Hrs	8		748		748
1	03	02	06	05		Write Documentation - Profile Monitors	16-Dec-05	6-Jan-06	S	C	SL_CE	Hrs	8		925		925
1	03	02	06	05		Procure 50B1 Profile Monitors	4-Oct-05	31-Oct-05	S	C	SL_MSEG	\$\$		3,500		3,920	3,920
1	03	02	06	05		Integrate and Test Profile Monitors	9-Jan-06	14-Feb-06	S	C	SL_CP	Hrs	40		3,741		3,741
1	03	02	06	05		Integrate and Test Profile Monitors	9-Jan-06	14-Feb-06	S	C	SL_CE	Hrs	8		925		925
1	03	02	06	06		Controls - E/O Diagnostics							304	24,987	27,778	27,985	55,763
1	03	02	06	06		Procure E/O Electronics	14-Feb-06	14-Mar-06	S	C	SL_MSEG	\$\$		24,987		27,985	27,985
1	03	02	06	06		Build H/W (E/O Diagnostics)	15-Mar-06	19-Apr-06		C	SL_CT	Hrs	48		3,040		3,040
1	03	02	06	06		Write Software - E/O Diagnostics	15-Mar-06	11-Apr-06	S	C	SL_CP	Hrs	160		14,963		14,963
1	03	02	06	06		Write Documentation - E/O Electronics	12-Apr-06	18-Apr-06	S	C	SL_CP	Hrs	20		1,870		1,870
1	03	02	06	06		Write Documentation - E/O Electronics	12-Apr-06	18-Apr-06	S	C	SL_CE	Hrs	20		2,313		2,313
1	03	02	06	06		Integrate and Test E/O Electronics	20-Apr-06	25-May-06		C	SL_CP	Hrs	40		3,741		3,741
1	03	02	06	06		Integrate and Test E/O Electronics	20-Apr-06	25-May-06		C	SL_CE	Hrs	16		1,851		1,851
1	03	02	06	07		Controls - Bunch Length Monitors							280	7,800	25,839	8,736	34,575
1	03	02	06	07		Procure BLM Controls Hdwr/Eq	13-Jan-06	10-Feb-06	S	C	SL_MSEG	\$\$		7,800		8,736	8,736
1	03	02	06	07		Build BLM Hardware	13-Feb-06	21-Mar-06		C	SL_CT	Hrs	32		2,027		2,027
1	03	02	06	07		Write Software - BLM Diagnostics	3-Oct-05	28-Oct-05	S	C	SL_CP	Hrs	160		14,963		14,963
1	03	02	06	07		Write Documentation - BLM Diagnostics	31-Oct-05	4-Nov-05	S	C	SL_CP	Hrs	20		1,870		1,870
1	03	02	06	07		Write Documentation - BLM Diagnostics	31-Oct-05	4-Nov-05	S	C	SL_CE	Hrs	20		2,313		2,313
1	03	02	06	07		Integrate and Test BLM	22-Mar-06	26-Apr-06		C	SL_CP	Hrs	40		3,741		3,741
1	03	02	06	07		Integrate and Test BLM	22-Mar-06	26-Apr-06		C	SL_CE	Hrs	8		925		925
1	03	02	06	08		Controls - Beam Loss Monitors							280	1,000	25,839	1,120	26,959
1	03	02	06	08		Procure BLM Controls Hdwr/Eq	16-Dec-05	30-Jan-06	S	C	SL_MSEG	\$\$		1,000		1,120	1,120
1	03	02	06	08		Build Beam Loss Monitor	31-Jan-06	9-Mar-06		C	SL_CT	Hrs	32		2,027		2,027
1	03	02	06	08		Write Software - Bm Lss Mon Diagnostics	10-Mar-06	6-Apr-06	S	C	SL_CP	Hrs	160		14,963		14,963
1	03	02	06	08		Write Documentation - Bm Lss Mon Diagnostics	7-Apr-06	13-Apr-06	S	C	SL_CP	Hrs	20		1,870		1,870
1	03	02	06	08		Write Documentation - Bm Lss Mon Diagnostics	7-Apr-06	13-Apr-06	S	C	SL_CE	Hrs	20		2,313		2,313
1	03	02	06	08		Integrate & Test	14-Apr-06	19-May-06		C	SL_CP	Hrs	40		3,741		3,741
1	03	02	06	08		Integrate & Test	14-Apr-06	19-May-06		C	SL_CE	Hrs	8		925		925
1	03	02	06	09		Controls - Single Beam Dump							648	9,600	63,887	11,040	74,927
1	03	02	06	09		Receive System Requirements	3-Oct-06	9-Oct-06		C	SL_CP	Hrs	8		768		768
1	03	02	06	09		Receive System Requirements	3-Oct-06	9-Oct-06		C	SL_CE	Hrs	8		949		949
1	03	02	06	09		Design Single Beam Dump	10-Oct-06	13-Dec-06		C	SL_CP	Hrs	208		19,958		19,958
1	03	02	06	09		Design Single Beam Dump	10-Oct-06	13-Dec-06		C	SL_CE	Hrs	108		12,816		12,816
1	03	02	06	09		Design Single Beam Dump	10-Oct-06	13-Dec-06		C	SL_CCA	Hrs	28		1,935		1,935
1	03	02	06	09		Single Beam Dump Hardware	14-Dec-06	26-Jan-07		C	SL_MSEG	\$\$		9,600		11,040	11,040
1	03	02	06	09		Build Single Beam Dump H/W	29-Jan-07	27-Feb-07		C	SL_CT	Hrs	32		2,080		2,080
1	03	02	06	09		Write Software - Single Beam Dump	29-Jan-07	26-Feb-07	S	C	SL_CP	Hrs	160		15,352		15,352
1	03	02	06	09		Write Documentation - Single Beam Dump	27-Feb-07	5-Mar-07	S	C	SL_CP	Hrs	20		1,919		1,919
1	03	02	06	09		Write Documentation - Single Beam Dump	27-Feb-07	5-Mar-07	S	C	SL_CE	Hrs	20		2,373		2,373
1	03	02	06	09		Integrate and Test Single Beam Dump	6-Mar-07	21-Mar-07		C	SL_CP	Hrs	40		3,838		3,838
1	03	02	06	09		Integrate and Test Single Beam Dump	6-Mar-07	21-Mar-07		C	SL_CE	Hrs	16		1,899		1,899
1	03	02	06	10		Controls - E Beam Dump							777	-	74,239	-	74,239
1	03	02	06	10		Receive System Requirements	3-Oct-06	9-Oct-06		C	SL_CP	Hrs	8		768		768
1	03	02	06	10		Receive System Requirements	3-Oct-06	9-Oct-06		C	SL_CE	Hrs	8		949		949
1	03	02	06	10		Design E Beam Dump	10-Oct-06	22-Jan-07		C	SL_CP	Hrs	208		19,958		19,958
1	03	02	06	10		Design E Beam Dump	10-Oct-06	22-Jan-07		C	SL_CE	Hrs	145		17,207		17,207
1	03	02	06	10		Design E Beam Dump	10-Oct-06	22-Jan-07		C	SL_CCA	Hrs	128		8,846		8,846
1	03	02	06	10		Build E Beam Dump H/W	23-Jan-07	21-Feb-07		C	SL_CT	Hrs	32		2,080		2,080
1	03	02	06	10		Write Software - E Beam Dump	22-Feb-07	21-Mar-07	S	C	SL_CP	Hrs	160		15,352		15,352
1	03	02	06	10		Write Documentation - E Beam Dump	22-Mar-07	28-Mar-07	S	C	SL_CP	Hrs	20		1,919		1,919
1	03	02	06	10		Write Documentation - E Beam Dump	22-Mar-07	28-Mar-07	S	C	SL_CE	Hrs	20		2,373		2,373
1	03	02	06	10		Integrate and Test	29-Mar-07	3-May-07		C	SL_CP	Hrs	40		3,838		3,838
1	03	02	06	10		Integrate and Test	29-Mar-07	3-May-07		C	SL_CE	Hrs	8		949		949
1	03	02	06	11		Controls - Protection Collimator							777	19,957	74,336	22,352	96,688
1	03	02	06	11		Receive System Requirements	10-Apr-06	14-Apr-06		C	SL_CP	Hrs	8		748		748
1	03	02	06	11		Receive System Requirements	10-Apr-06	14-Apr-06		C	SL_CE	Hrs	8		925		925

LCLS TPC Detailed Cost Estimate (FY05FY09)

5/5/2005

WBS Level						LCLA DCE March-2005 Description	Early Start	Early Finish	OBS	Fund Type	Res Code	Units	Budgeted Quantity		Fully Burdened and Escalated Cost		
Run Time: 4/22/05 8:43am													Hours	\$\$	Labor	M&S	Total (No Conting)
1	03	02	06	11	6	Design Moveable Protection Collimator	17-Apr-06	3-Jul-06		C	SL_CP	Hrs	208		19,452		19,452
1	03	02	06	11		Design Moveable Protection Collimator	17-Apr-06	3-Jul-06		C	SL_CE	Hrs	185		21,397		21,397
1	03	02	06	11		Design Moveable Protection Collimator	17-Apr-06	3-Jul-06		C	SL_CCA	Hrs	88		5,928		5,928
1	03	02	06	11		Movable Collimator Hardware	5-Jul-06	1-Aug-06		C	SL_MSEG	\$\$		19,957		22,352	22,352
1	03	02	06	11		Build Collimator H/W	5-Jul-06	2-Aug-06		C	SL_CT	Hrs	32		2,027		2,027
1	03	02	06	11		Write Software - Prot Collimator	3-Aug-06	30-Aug-06	S	C	SL_CP	Hrs	160		14,963		14,963
1	03	02	06	11		Write Documentation - Prot Collimator	31-Aug-06	7-Sep-06	S	C	SL_CP	Hrs	20		1,870		1,870
1	03	02	06	11		Write Documentation - Prot Collimator	31-Aug-06	7-Sep-06	S	C	SL_CE	Hrs	20		2,313		2,313
1	03	02	06	11		Integrate and Test	8-Sep-06	13-Oct-06		C	SL_CP	Hrs	40		3,778		3,778
1	03	02	06	11		Integrate and Test	8-Sep-06	13-Oct-06		C	SL_CE	Hrs	8		935		935
1	03	02	06	12		Controls - Movable Collimator							841	-	78,691	-	78,691
1	03	02	06	12		Receive System Requirements	1-Jul-05	8-Jul-05		P	SL_CP	Hrs	8		728		728
1	03	02	06	12		Receive System Requirements	1-Jul-05	8-Jul-05		P	SL_CE	Hrs	8		900		900
1	03	02	06	12		Design Collimator Controls	1-Jul-05	27-Sep-05		P	SL_CP	Hrs	200		18,194		18,194
1	03	02	06	12		Design Collimator Controls	1-Jul-05	27-Sep-05		P	SL_CE	Hrs	145		16,314		16,314
1	03	02	06	12		Design Collimator Controls	1-Jul-05	27-Sep-05		P	SL_CCA	Hrs	128		8,388		8,388
1	03	02	06	12		Build Collimator H/W	3-Oct-05	31-Oct-05		C	SL_CT	Hrs	32		2,027		2,027
1	03	02	06	12		Write Software - Movable Collimator	1-Nov-05	30-Nov-05	S	C	SL_CP	Hrs	160		14,963		14,963
1	03	02	06	12		Write Documentation - Movable Collimator	1-Dec-05	7-Dec-05	S	C	SL_CP	Hrs	20		1,870		1,870
1	03	02	06	12		Write Documentation - Movable Collimator	1-Dec-05	7-Dec-05	S	C	SL_CE	Hrs	20		2,313		2,313
1	03	02	06	12		Integrate and Test	8-Dec-05	30-Jan-06		C	SL_CP	Hrs	40		3,741		3,741
1	03	02	06	12		Integrate and Test	8-Dec-05	30-Jan-06		C	SL_CE	Hrs	80		9,253		9,253
1	03	02	06	13		Controls - X-Band Accel Structure							769	-	71,609	-	71,609
1	03	02	06	13		Receive System Requirements	3-Oct-05	7-Oct-05		P	SL_CP	Hrs	8		748		748
1	03	02	06	13		Receive System Requirements	3-Oct-05	7-Oct-05		P	SL_CE	Hrs	8		925		925
1	03	02	06	13		Design X Band Controls	10-Oct-05	20-Jan-06		C	SL_CP	Hrs	200		18,704		18,704
1	03	02	06	13		Design X Band Controls	10-Oct-05	20-Jan-06		C	SL_CE	Hrs	145		16,771		16,771
1	03	02	06	13		Design X Band Controls	10-Oct-05	20-Jan-06		C	SL_CCA	Hrs	128		8,622		8,622
1	03	02	06	13		Build X-Band H/W	23-Jan-06	17-Feb-06		C	SL_CT	Hrs	32		2,027		2,027
1	03	02	06	13		Write Software - X Band Accel Structure	23-Jan-06	17-Feb-06	S	C	SL_CP	Hrs	160		14,963		14,963
1	03	02	06	13		Write Documentation - X Band Accel Structure	21-Feb-06	27-Feb-06	S	C	SL_CP	Hrs	20		1,870		1,870
1	03	02	06	13		Write Documentation - X Band Accel Structure	21-Feb-06	27-Feb-06	S	C	SL_CE	Hrs	20		2,313		2,313
1	03	02	06	13		Integrate and Test	28-Feb-06	4-Apr-06		C	SL_CP	Hrs	40		3,741		3,741
1	03	02	06	13		Integrate and Test	28-Feb-06	4-Apr-06		C	SL_CE	Hrs	8		925		925
1	03	02	07			Controls - Laser											
1	03	02	08			Controls Timing							16	72,000	1,825	80,640	82,465
1	03	02	08			Prep Bid Pak - Linac Timing Modules	20-Sep-05	26-Sep-05		P	SL_CE	Hrs	8		900		900
1	03	02	08			Evaluate Vendor Proposals	4-Oct-05	10-Oct-05		P	SL_CE	Hrs	8		925		925
1	03	02	08			Vendor Fab & Assy - Timing modules (SLC to VME)	12-Oct-05	8-Dec-05		C	SA_MSEG	\$\$		72,000		80,640	80,640
1	03	02	09			Controls - Vacuum							861	174,110	80,206	195,003	275,209
1	03	02	09	01		Interlocks							861	54,110	80,206	60,603	140,809
1	03	02	09	01		Receive System Requirements	3-Oct-05	7-Oct-05		P	SL_CP	Hrs	8		748		748
1	03	02	09	01		Receive System Requirements	3-Oct-05	7-Oct-05		P	SL_CE	Hrs	8		925		925
1	03	02	09	01		Design - Vacuum Instrumentation	10-Oct-05	2-Feb-06		P	SL_CP	Hrs	80		7,482		7,482
1	03	02	09	01		Design - Vacuum Instrumentation	10-Oct-05	2-Feb-06		P	SL_CE	Hrs	213		24,636		24,636
1	03	02	09	01		Design - Vacuum Instrumentation	10-Oct-05	2-Feb-06		P	SL_CCA	Hrs	208		14,011		14,011
1	03	02	09	01		Prep Bid Pak - Vac H/W	3-Feb-06	9-Feb-06	S	C	SL_CE	Hrs	24		2,776		2,776
1	03	02	09	01		Evaluate Vendor Proposals - Vac H/W	17-Feb-06	24-Feb-06	S	C	SL_CE	Hrs	24		2,776		2,776
1	03	02	09	01		Procure Vacuum Instrumentation & Interlocks H/W	3-Feb-06	3-Mar-06		C	SL_MSEG	\$\$		54,110		60,603	60,603
1	03	02	09	01		Build Vacuum Control H/W	28-Mar-06	4-Apr-06	S	C	SL_CT	Hrs	48		3,040		3,040
1	03	02	09	01		Write Software - Vac Controls	5-Apr-06	11-Apr-06	S	C	SL_CP	Hrs	160		14,963		14,963
1	03	02	09	01		Write Documentation - Vac Controls	12-Apr-06	18-Apr-06	S	C	SL_CP	Hrs	20		1,870		1,870
1	03	02	09	01		Write Documentation - Vac Controls	12-Apr-06	18-Apr-06	S	C	SL_CE	Hrs	20		2,313		2,313
1	03	02	09	01		Integrate & Test	19-Apr-06	30-May-06		C	SL_CP	Hrs	40		3,741		3,741
1	03	02	09	01		Integrate & Test	19-Apr-06	30-May-06		C	SL_CE	Hrs	8		925		925
1	03	02	09	02		Vacuum Instrumentation & Controls							-	120,000	-	134,400	134,400
1	03	02	09	02		Vendor Fab & Assy - Vacuum Valve Chassis (4)	28-Feb-06	27-Mar-06	S	C	SA_MSEG	\$\$		120,000		134,400	134,400
1	03	02	10			Software & Controls Infrastructure							1,548	447,875	138,464	501,620	640,084
1	03	02	10	01		Low Level Application Software											
1	03	02	10	02		Software Utilities											
1	03	02	10	03		Device Support											
1	03	02	10	04		Data Communications							372	46,275	25,534	51,828	77,362
1	03	02	10	04		Supervise Equipment Installation	11-Jul-05	19-Aug-05		P	SL_CCA	Hrs	135		8,847		8,847
1	03	02	10	04		SEM Install Wall Board	23-Aug-05	6-Sep-05		P	SL_TMUC	Hrs	3		224		224

LCLS TPC Detailed Cost Estimate (FY05FY09)

5/5/2005

WBS Level						LCLA DCE March-2005	Early	Early	OBS	Fund	Res	Units	Budgeted Quantity		Fully Burdened and Escalated Cost			
Run Time: 4/22/05 8:43am						Description	Start	Finish		Type	Code		Hours	\$	Labor	M&S	Total (No Conting)	
1	03	02	10	04		SEM Install Two 20 A Circuits	7-Sep-05	4-Oct-05		P	SL_TMUE	Hrs		24		2,318		2,318
1	03	02	10	04		Procure Singlemode Fiber	6-Oct-05	16-Dec-05		P	SL_MSEG	\$\$			16,875		18,900	18,900
1	03	02	10	04		Fiber Cabling Installation	3-Jan-06	31-Jan-06		L	SL_CCA	Hrs		96		6,467		6,467
1	03	02	10	04		Fiber Termination	1-Feb-06	26-Apr-06		L	SL_MSEG	\$\$			5,400		6,048	6,048
1	03	02	10	04		Cabling Installation in Ground & Sub Ground Loc	28-Apr-06	25-May-06		C	SL_CCA	Hrs		48		3,233		3,233
1	03	02	10	04		Cable Termination	26-May-06	23-Jun-06		C	SL_CCA	Hrs		48		3,233		3,233
1	03	02	10	04		Procure Cisco 3550-24 Hubs (6ea)	26-Jul-06	22-Aug-06		C	SL_MSEG	\$\$			24,000		26,880	26,880
1	03	02	10	04		Hub Installation & Data Circuit Activation	23-Aug-06	20-Sep-06		C	SL_CCA	Hrs		18		1,212		1,212
1	03	02	10	05		Computers							1,176	401,600	112,930	449,792	562,722	
1	03	02	10	05		Provide Hardware Engineer & Systems Integ Sup	12-Jul-05	15-Dec-06		P	SL_CE	Hrs		712		82,303		82,303
1	03	02	10	05		Design VME Crates, Control & Support Modules	12-Jul-05	16-Dec-05		P	SL_CCA	Hrs		120		7,968		7,968
1	03	02	10	05		Prep Bid Pak - VME Crates/OCs/Interface Chassis	3-Jan-06	9-Jan-06		P	SL_CCA	Hrs		16		1,078		1,078
1	03	02	10	05		Evaluate Vendors Proposals	18-Jan-06	24-Jan-06		C	SL_CCA	Hrs		16		1,078		1,078
1	03	02	10	05		Vendor Fab/Assy VME Crates/OCs/Interface Chassis	26-Jan-06	20-Apr-06		C	SA_MSEG	\$\$			75,000		84,000	84,000
1	03	02	10	05		Prep Bid Pak - VME Crates for BPMs	3-Jan-06	9-Jan-06		P	SL_CCA	Hrs		16		1,078		1,078
1	03	02	10	05		Evaluate Vendors Proposals	18-Jan-06	24-Jan-06		C	SL_CCA	Hrs		16		1,078		1,078
1	03	02	10	05		Vendor Fab & Assy - VME Crates for BPMs	26-Jan-06	20-Apr-06		C	SA_MSEG	\$\$			273,000		305,760	305,760
1	03	02	10	05		Prep Bid Pak -VME Crates/Cntrl/Supt Chassis	3-Jan-06	9-Jan-06		P	SL_CCA	Hrs		16		1,078		1,078
1	03	02	10	05		Evaluate Vendors Proposals	18-Jan-06	24-Jan-06		C	SL_CCA	Hrs		16		1,078		1,078
1	03	02	10	05		Vendor Fab & Assy -VME Crates/Cntrl/Supt Chassis	26-Jan-06	20-Apr-06		C	SA_MSEG	\$\$			47,900		53,648	53,648
1	03	02	10	05		Procure Cableplant	3-Jan-06	29-Mar-06		C	SL_MSEG	\$\$			1,200		1,344	1,344
1	03	02	10	05		Procure VME System I/O Distribution Cableplant	3-Jan-06	29-Mar-06		C	SL_MSEG	\$\$			4,500		5,040	5,040
1	03	02	10	05		Assemble and Integrate Equipment	21-Apr-06	2-Jun-06		C	SL_CCA	Hrs		120		8,083		8,083
1	03	02	10	05		Conduct Pre-Install Testing	5-Jun-06	17-Jul-06		C	SL_CT	Hrs		128		8,108		8,108
1	03	03				Linac Magnets & Supports							16,720	1,274,200	1,459,217	1,448,368	2,907,585	
1	03	03	01			BX1_BC1_()							725	157,500	56,125	173,175	229,300	
1	03	03	01			Create ICD & Update LCLS Database	1-Oct-04	14-Oct-04		P	SL_ME	Hrs		40		4,228		4,228
1	03	03	01			Review/Accept Reqmts, Update ICD & DB entries	15-Oct-04	12-Nov-04		P	SL_ME	Hrs		2		211		211
1	03	03	01			Develop Preliminary Dsn - Magnet Field Analysis	1-Feb-05	1-Mar-05		P	SL_PHS	Hrs		40		2,912		2,912
1	03	03	01			Conduct Preliminary Design Review (PDR)	1-Apr-05	1-Apr-05		L	SL_ME	Hrs		8		846		846
1	03	03	01			Conduct Preliminary Design Review (PDR)	1-Apr-05	1-Apr-05		L	SL_MDD	Hrs		4		251		251
1	03	03	01			Develop Final Design - Magnets	4-Apr-05	15-Apr-05		L	SL_ME	Hrs		40		4,228		4,228
1	03	03	01			Develop Final Design - Magnets	4-Apr-05	15-Apr-05		L	SL_MDD	Hrs		200		12,548		12,548
1	03	03	01			Conduct Final Design Review (FDR)	18-Apr-05	19-Apr-05		L	SL_ME	Hrs		8		846		846
1	03	03	01			Conduct Final Design Review (FDR)	18-Apr-05	19-Apr-05		L	SL_MDD	Hrs		8		502		502
1	03	03	01			Develop Magnetic Measurement Plan	20-Apr-05	3-May-05		L	SL_ME	Hrs		30		3,171		3,171
1	03	03	01			Prep Bid Pak - Magnets	4-May-05	5-May-05		L	SL_ME	Hrs		8		846		846
1	03	03	01			Prep Bid Pak - Magnets	4-May-05	5-May-05		L	SL_MDD	Hrs		4		251		251
1	03	03	01			Evaluate Vendor Proposals - Magnets	5-Jul-05	6-Jul-05		L	SL_ME	Hrs		8		846		846
1	03	03	01			Vendor Fab 1st Lot - Magnets	8-Jul-05	11-Jan-06		L	SA_MSEG	\$\$			100,000		110,500	110,500
1	03	03	01			Perform Magnet Pre-Instalation Qual	3-Oct-05	4-Oct-05		L	SL_ME	Hrs		8		869		869
1	03	03	01			Define Magnet Support Requirements	1-Apr-05	4-Apr-05		L	SL_ME	Hrs		8		846		846
1	03	03	01			Create ICD & Update LCLS Database	5-Apr-05	5-Apr-05		L	SL_ME	Hrs		4		423		423
1	03	03	01			Review/Accept Reqmts, Update ICD & DB entries	6-Apr-05	6-Apr-05		L	SL_ME	Hrs		4		423		423
1	03	03	01			Develop Preliminary Design - Magnet Supports	7-Apr-05	8-Apr-05		L	SL_ME	Hrs		8		846		846
1	03	03	01			Develop Preliminary Design - Magnet Supports	7-Apr-05	8-Apr-05		L	SL_MDD	Hrs		75		4,706		4,706
1	03	03	01			Conduct Preliminary Design Review (PDR)	11-Apr-05	11-Apr-05		L	SL_ME	Hrs		4		423		423
1	03	03	01			Conduct Preliminary Design Review (PDR)	11-Apr-05	11-Apr-05		L	SL_MDD	Hrs		4		251		251
1	03	03	01			Develop Final Design - Magnet Supports	12-Apr-05	13-Apr-05		L	SL_ME	Hrs		8		846		846
1	03	03	01			Develop Final Design - Magnet Supports	12-Apr-05	13-Apr-05		L	SL_MDD	Hrs		100		6,274		6,274
1	03	03	01			Conduct Final Design Review (FDR)	14-Apr-05	14-Apr-05		L	SL_ME	Hrs		4		423		423
1	03	03	01			Conduct Final Design Review (FDR)	14-Apr-05	14-Apr-05		L	SL_MDD	Hrs		4		251		251
1	03	03	01			Prep Bid Pak - Magnet Supports	15-Apr-05	12-May-05		L	SL_ME	Hrs		2		211		211
1	03	03	01			Prep Bid Pak - Magnet Supports	15-Apr-05	12-May-05		L	SL_MDD	Hrs		4		251		251
1	03	03	01			Evaluate Vendor Proposals - Supports	27-May-05	27-May-05		L	SL_ME	Hrs		4		423		423
1	03	03	01			Vendor Fab 1st Lot - Supts	1-Jun-05	13-Jul-05		L	SA_MSEG	\$\$			50,000		54,500	54,500
1	03	03	01			Procure Misc Materials - Magnet Supports	15-Apr-05	12-May-05		L	SL_MSEG	\$\$			7,500		8,175	8,175
1	03	03	01			Assemble Magnet Supports	16-May-05	13-Jun-05		L	SL_MFAT	Hrs		80		6,550		6,550
1	03	03	01			Perform Pre-Installation Qualification - Support	14-Jun-05	14-Jun-05		L	SL_ME	Hrs		4		423		423
1	03	03	02			BX3_LTU_()							1,942	30,000	170,090	34,500	204,590	
1	03	03	02			Define Magnet Requirements	27-Oct-05	2-Nov-05		P	SL_ME	Hrs		25		2,717		2,717
1	03	03	02			Create ICD & Update LCLS Database	3-Nov-05	16-Nov-05		P	SL_ME	Hrs		40		4,347		4,347
1	03	03	02			Develop Preliminary Design - Magnet	21-Nov-05	29-Nov-05		P	SL_ME	Hrs		40		4,347		4,347
1	03	03	02			Develop Preliminary Design - Magnet	21-Nov-05	29-Nov-05		P	SL_MDD	Hrs		20		1,290		1,290

LCLS TPC Detailed Cost Estimate (FY05FY09)

5/5/2005

WBS Level						LCLA DCE March-2005 Description	Early Start	Early Finish	OBS	Fund Type	Res Code	Units	Budgeted Quantity		Fully Burdened and Escalated Cost			
Run Time: 4/22/05 8:43am													Hours	\$	Labor	M&S	Total (No Conting)	
1	2	3	4	5	6													
1	03	03	02			Develop Preliminary Dsn - Magnet Field Analysis	30-Nov-05	13-Dec-05		C	SL_PHS	Hrs	40			2,994		2,994
1	03	03	02			Conduct Preliminary Design Review (PDR)	14-Dec-05	14-Dec-05		P	SL_ME	Hrs	8			869		869
1	03	03	02			Conduct Preliminary Design Review (PDR)	14-Dec-05	14-Dec-05		P	SL_MDD	Hrs	4			258		258
1	03	03	02			Develop Final Design - Magnets	15-Dec-05	16-Dec-05		P	SL_ME	Hrs	10			1,087		1,087
1	03	03	02			Develop Final Design - Magnets	15-Dec-05	16-Dec-05		P	SL_MDD	Hrs	40			2,580		2,580
1	03	03	02			Conduct Final Design Review (FDR)	3-Jan-06	4-Jan-06		P	SL_ME	Hrs	8			869		869
1	03	03	02			Conduct Final Design Review (FDR)	3-Jan-06	4-Jan-06		P	SL_MDD	Hrs	8			516		516
1	03	03	02			Develop Magnetic Measurement Plan	5-Jan-06	5-Jan-06		C	SL_ME	Hrs	4			435		435
1	03	03	02			Procure Misc Materials - Magnets	3-Oct-06	30-Oct-06		C	SL_MSEG	\$\$		10,000			11,500	11,500
1	03	03	02			Disassemble Magnet	31-Oct-06	6-Dec-06		C	SL_MFMS	Hrs	75			7,941		7,941
1	03	03	02			Disassemble Magnet	31-Oct-06	6-Dec-06		C	SL_MFAT	Hrs	75			6,476		6,476
1	03	03	02			Refurbish Magnet Coils	7-Dec-06	26-Jan-07		C	SL_MFMS	Hrs	100			10,588		10,588
1	03	03	02			Assemble Magnets	29-Jan-07	28-Mar-07		C	SL_MFAT	Hrs	150			12,953		12,953
1	03	03	02			Prep for and Paint Magnets (as required)	29-Mar-07	2-May-07		C	SL_MFAT	Hrs	100			8,635		8,635
1	03	03	02			Perform Magnetic Measurement (as required)	3-May-07	31-May-07		C	SL_MES	Hrs	80			7,622		7,622
1	03	03	02			Perform Magnet Pre-Instalation Qual	1-Jun-07	4-Jun-07		C	SL_ME	Hrs	8			892		892
1	03	03	02			Define Magnet Support Requirements	3-Oct-06	4-Oct-06		C	SL_ME	Hrs	8			892		892
1	03	03	02			Create ICD & Update LCLS Database	5-Oct-06	5-Oct-06		C	SL_ME	Hrs	4			446		446
1	03	03	02			Develop Preliminary Design - Magnet Supports	9-Oct-06	16-Oct-06		C	SL_ME	Hrs	10			1,115		1,115
1	03	03	02			Develop Preliminary Design - Magnet Supports	9-Oct-06	16-Oct-06		C	SL_MDD	Hrs	50			3,309		3,309
1	03	03	02			Conduct Preliminary Design Review (PDR)	17-Oct-06	18-Oct-06		C	SL_ME	Hrs	8			892		892
1	03	03	02			Conduct Preliminary Design Review (PDR)	17-Oct-06	18-Oct-06		C	SL_MDD	Hrs	8			529		529
1	03	03	02			Develop Final Design - Magnet Supports	19-Oct-06	24-Oct-06		C	SL_ME	Hrs	10			1,115		1,115
1	03	03	02			Develop Final Design - Magnet Supports	19-Oct-06	24-Oct-06		C	SL_MDD	Hrs	30			1,985		1,985
1	03	03	02			Conduct Final Design Review (FDR)	25-Oct-06	26-Oct-06		C	SL_ME	Hrs	8			892		892
1	03	03	02			Conduct Final Design Review (FDR)	25-Oct-06	26-Oct-06		C	SL_MDD	Hrs	8			529		529
1	03	03	02			Prep Bid Pak - Magnet Supports	27-Oct-06	27-Oct-06		C	SL_ME	Hrs	2			223		223
1	03	03	02			Prep Bid Pak - Magnet Supports	27-Oct-06	27-Oct-06		C	SL_MDD	Hrs	4			265		265
1	03	03	02			Evaluate Vendor Proposals - Supports	29-Nov-06	29-Nov-06		C	SL_ME	Hrs	4			446		446
1	03	03	02			Vendor Fab 1st Lot - Supts	1-Dec-06	12-Jan-07		C	SA_MSEG	\$\$		15,000			17,250	17,250
1	03	03	02			Procure Misc Materials - Magnet Supports	27-Oct-06	27-Nov-06		C	SL_MSEG	\$\$		5,000			5,750	5,750
1	03	03	02			Fabricate Magnet Supports	28-Nov-06	5-Dec-06		C	SL_MFMS	Hrs	24			2,541		2,541
1	03	03	02			Perform QC & Inspection on Magnets Supts	6-Dec-06	13-Dec-06		C	SL_MES	Hrs	24			2,287		2,287
1	03	03	02			Assemble Magnet Supports	14-Dec-06	1-Feb-07		C	SL_MFAT	Hrs	96			8,290		8,290
1	03	03	02			Perform Pre-Installation Qualification - Support	2-Feb-07	5-Feb-07		C	SL_ME	Hrs	8			892		892
1	03	03	02			Develop Magnet Safety Cover Design	10-Nov-05	24-Jan-06		C	SL_ME	Hrs	16			1,739		1,739
1	03	03	02			Develop Magnet Safety Cover Design	10-Nov-05	24-Jan-06		C	SL_MDD	Hrs	160			10,318		10,318
1	03	03	02			Refurbish Reusable Safety Covers (5ea)	3-Oct-06	9-Apr-07		C	SL_MFAT	Hrs	625			53,969		53,969
1	03	03	03			BX2 BC2 ()							743	260,000		58,107	292,619	350,726
1	03	03	03			Create ICD & Update LCLS Database	1-Oct-04	14-Oct-04		P	SL_ME	Hrs	40			4,228		4,228
1	03	03	03			Develop Preliminary Dsn - Magnet Field Analysis	1-Oct-04	1-Mar-05		P	SL_PHS	Hrs	40			2,912		2,912
1	03	03	03			Conduct Preliminary Design Review (PDR)	2-May-05	2-May-05		L	SL_ME	Hrs	8			846		846
1	03	03	03			Conduct Preliminary Design Review (PDR)	2-May-05	2-May-05		L	SL_MDD	Hrs	4			251		251
1	03	03	03			Develop Final Design - Magnets	3-May-05	16-May-05		L	SL_ME	Hrs	40			4,228		4,228
1	03	03	03			Develop Final Design - Magnets	3-May-05	16-May-05		L	SL_MDD	Hrs	200			12,548		12,548
1	03	03	03			Conduct Final Design Review (FDR)	17-May-05	18-May-05		L	SL_ME	Hrs	8			846		846
1	03	03	03			Conduct Final Design Review (FDR)	17-May-05	18-May-05		L	SL_MDD	Hrs	8			502		502
1	03	03	03			Develop Magnetic Measurement Plan	19-May-05	2-Jun-05		L	SL_ME	Hrs	30			3,171		3,171
1	03	03	03			Prep Bid Pak - Magnets	3-Jun-05	6-Jun-05		L	SL_ME	Hrs	8			846		846
1	03	03	03			Prep Bid Pak - Magnets	3-Jun-05	6-Jun-05		L	SL_MDD	Hrs	4			251		251
1	03	03	03			Evaluate Vendor Proposals - Magnets	31-Aug-05	1-Sep-05		L	SL_ME	Hrs	8			846		846
1	03	03	03			Vendor Fab 1st Lot - Magnets	6-Sep-05	13-Mar-06		L	SA_MSEG	\$\$		175,000			195,169	195,169
1	03	03	03			Assemble Magnets	7-Jun-05	6-Jun-05		L	SL_MFAT	Hrs	-			-		-
1	03	03	03			Perform Magnet Pre-Instalation Qual	14-Mar-06	15-Mar-06		C	SL_ME	Hrs	8			869		869
1	03	03	03			Define Magnet Support Requirements	2-May-05	3-May-05		L	SL_ME	Hrs	8			846		846
1	03	03	03			Create ICD & Update LCLS Database	4-May-05	4-May-05		L	SL_ME	Hrs	4			423		423
1	03	03	03			Develop Preliminary Design - Magnet Supports	6-Jun-05	6-Jun-05		L	SL_ME	Hrs	6			634		634
1	03	03	03			Develop Preliminary Design - Magnet Supports	6-Jun-05	6-Jun-05		L	SL_MDD	Hrs	69			4,329		4,329
1	03	03	03			Conduct Preliminary Design Review (PDR)	7-Jun-05	7-Jun-05		L	SL_ME	Hrs	4			423		423
1	03	03	03			Conduct Preliminary Design Review (PDR)	7-Jun-05	7-Jun-05		L	SL_MDD	Hrs	4			251		251
1	03	03	03			Develop Final Design - Magnet Supports	8-Jun-05	28-Jun-05		L	SL_ME	Hrs	10			1,057		1,057
1	03	03	03			Develop Final Design - Magnet Supports	8-Jun-05	28-Jun-05		L	SL_MDD	Hrs	90			5,647		5,647
1	03	03	03			Conduct Final Design Review (FDR)	29-Jun-05	29-Jun-05		L	SL_ME	Hrs	4			423		423
1	03	03	03			Conduct Final Design Review (FDR)	29-Jun-05	29-Jun-05		L	SL_MDD	Hrs	4			251		251

LCLS TPC Detailed Cost Estimate (FY05FY09)

5/5/2005

WBS Level						LCLA DCE March-2005 Description	Early Start	Early Finish	OBS	Fund Type	Res Code	Units	Budgeted Quantity		Fully Burdened and Escalated Cost				
Run Time: 4/22/05 8:43am													Hours	\$\$	Labor	M&S	Total (No Conting)		
1	2	3	4	5	6	Prep Bid Pak - Magnet Supports	3-Oct-06	3-Oct-06		C	SL_ME	Hrs		2			223		223
1	03	03	03			Prep Bid Pak - Magnet Supports	3-Oct-06	3-Oct-06		C	SL_MDD	Hrs		4			265		265
1	03	03	03			Evaluate Vendor Proposals - Supports	5-Oct-06	5-Oct-06		C	SL_ME	Hrs		4			446		446
1	03	03	03			Vendor Fab 1st Lot - Supts	9-Oct-06	3-Nov-06		C	SA_MSEG	\$\$			75,000			86,250	86,250
1	03	03	03			Procure Misc Materials - Magnet Supports	10-Apr-06	5-May-06		C	SL_MSEG	\$\$			10,000			11,200	11,200
1	03	03	03			Assemble Magnet Supports	8-May-06	19-Jun-06		C	SL_MFAT	Hrs	120				10,099		10,099
1	03	03	03			Perform Pre-Installation Qualification - Support	6-Nov-06	6-Nov-06		C	SL_ME	Hrs		4			446		446
1	03	03	04			BY LTU							1,352	116,000		113,304	133,130	246,434	
1	03	03	04			Define Magnet Requirements	3-Oct-05	4-Nov-05		P	SL_ME	Hrs	100				10,867		10,867
1	03	03	04			Create ICD & Update LCLS Database	7-Nov-05	18-Nov-05		C	SL_ME	Hrs	40				4,347		4,347
1	03	03	04			Develop Preliminary Design - Magnet	23-Nov-05	8-Dec-05		P	SL_ME	Hrs	150				16,301		16,301
1	03	03	04			Develop Preliminary Design - Magnet	23-Nov-05	8-Dec-05		P	SL_MDD	Hrs	40				2,580		2,580
1	03	03	04			Develop Preliminary Dsn - Magnet Field Analysis	9-Dec-05	13-Jan-06		C	SL_PHS	Hrs	60				4,491		4,491
1	03	03	04			Conduct Preliminary Design Review (PDR)	17-Jan-06	17-Jan-06		P	SL_ME	Hrs	8				869		869
1	03	03	04			Conduct Preliminary Design Review (PDR)	17-Jan-06	17-Jan-06		P	SL_MDD	Hrs	4				258		258
1	03	03	04			Develop Final Design - Magnets	18-Jan-06	31-Jan-06		P	SL_ME	Hrs	40				4,347		4,347
1	03	03	04			Develop Final Design - Magnets	18-Jan-06	31-Jan-06		P	SL_MDD	Hrs	300				19,347		19,347
1	03	03	04			Conduct Final Design Review (FDR)	1-Feb-06	2-Feb-06		P	SL_ME	Hrs	8				869		869
1	03	03	04			Conduct Final Design Review (FDR)	1-Feb-06	2-Feb-06		P	SL_MDD	Hrs	8				516		516
1	03	03	04			Develop Magnetic Measurement Plan	3-Feb-06	16-Feb-06		C	SL_ME	Hrs	40				4,347		4,347
1	03	03	04			Prep Bid Pak - Magnets	17-Feb-06	21-Feb-06		C	SL_ME	Hrs	8				869		869
1	03	03	04			Prep Bid Pak - Magnets	17-Feb-06	21-Feb-06		C	SL_MDD	Hrs	4				258		258
1	03	03	04			Evaluate Vendor Proposals - Magnets	23-Feb-06	23-Feb-06		C	SL_ME	Hrs	8				869		869
1	03	03	04			Vendor Fab 1st Lot - Magnets	4-Oct-06	10-Apr-07		C	SA_MSEG	\$\$			100,000			115,000	115,000
1	03	03	04			Assemble Magnets	22-Feb-06	21-Feb-06		C	SL_MFAT	Hrs	-				-		-
1	03	03	04			Perform Magnet Pre-Instalation Qual	11-Apr-07	12-Apr-07		C	SL_ME	Hrs	8				892		892
1	03	03	04			Define Magnet Support Requirements	7-Nov-05	8-Nov-05		P	SL_ME	Hrs	8				869		869
1	03	03	04			Create ICD & Update LCLS Database	9-Nov-05	9-Nov-05		C	SL_ME	Hrs	4				435		435
1	03	03	04			Develop Preliminary Design - Magnet Supports	11-Nov-05	18-Nov-05		P	SL_ME	Hrs	24				2,608		2,608
1	03	03	04			Develop Preliminary Design - Magnet Supports	11-Nov-05	18-Nov-05		P	SL_MDD	Hrs	80				5,159		5,159
1	03	03	04			Conduct Preliminary Design Review (PDR)	21-Nov-05	22-Nov-05		P	SL_ME	Hrs	8				869		869
1	03	03	04			Conduct Preliminary Design Review (PDR)	21-Nov-05	22-Nov-05		P	SL_MDD	Hrs	8				516		516
1	03	03	04			Develop Final Design - Magnet Supports	23-Nov-05	30-Nov-05		P	SL_ME	Hrs	16				1,739		1,739
1	03	03	04			Develop Final Design - Magnet Supports	23-Nov-05	30-Nov-05		P	SL_MDD	Hrs	60				3,869		3,869
1	03	03	04			Conduct Final Design Review (FDR)	1-Dec-05	2-Dec-05		P	SL_ME	Hrs	8				869		869
1	03	03	04			Conduct Final Design Review (FDR)	1-Dec-05	2-Dec-05		P	SL_MDD	Hrs	8				516		516
1	03	03	04			Prep Bid Pak - Magnet Supports	3-Oct-06	3-Oct-06		C	SL_ME	Hrs	2				223		223
1	03	03	04			Prep Bid Pak - Magnet Supports	3-Oct-06	3-Oct-06		C	SL_MDD	Hrs	4				265		265
1	03	03	04			Evaluate Vendor Proposals - Supports	5-Oct-06	5-Oct-06		C	SL_ME	Hrs	4				446		446
1	03	03	04			Vendor Fab 1st Lot - Supts	9-Oct-06	3-Nov-06		C	SA_MSEG	\$\$			7,000			8,050	8,050
1	03	03	04			Procure Misc Materials - Magnet Supports	5-Dec-05	17-Jan-06		C	SL_MSEG	\$\$			2,000			2,240	2,240
1	03	03	04			Fabricate Magnet Supports	18-Jan-06	25-Jan-06		C	SL_MFMS	Hrs	24				2,477		2,477
1	03	03	04			Perform QC & Inspection on Magnets Supts	6-Nov-06	13-Nov-06		C	SL_MES	Hrs	24				2,287		2,287
1	03	03	04			Assemble Magnet Supports	14-Nov-06	6-Dec-06		C	SL_MFAT	Hrs	60				5,181		5,181
1	03	03	04			Perform Pre-Installation Qualification - Support	7-Dec-06	8-Dec-06		C	SL_ME	Hrs	8				892		892
1	03	03	04			Develop Magnet Safety Cover Design	7-Nov-05	19-Jan-06		C	SL_ME	Hrs	16				1,739		1,739
1	03	03	04			Develop Magnet Safety Cover Design	7-Nov-05	19-Jan-06		C	SL_MDD	Hrs	160				10,318		10,318
1	03	03	04			Procure Magnet Safety Cover (2ea)	20-Jan-06	17-Mar-06		C	SL_MSEG	\$\$			7,000			7,840	7,840
1	03	03	05			LTU Quad							3,392	306,000		296,859	351,900	648,759	
1	03	03	05			Define Magnet Requirements	17-Feb-06	24-Mar-06		P	SL_ME	Hrs	50				5,434		5,434
1	03	03	05			Create ICD & Update LCLS Database	27-Mar-06	7-Apr-06		C	SL_ME	Hrs	40				4,347		4,347
1	03	03	05			Develop Preliminary Design - Magnet	12-Apr-06	13-Apr-06		P	SL_ME	Hrs	8				869		869
1	03	03	05			Develop Preliminary Design - Magnet	12-Apr-06	13-Apr-06		P	SL_MDD	Hrs	32				2,064		2,064
1	03	03	05			Develop Preliminary Dsn - Magnet Field Analysis	14-Apr-06	17-Apr-06		P	SL_PHS	Hrs	8				599		599
1	03	03	05			Conduct Preliminary Design Review (PDR)	18-Apr-06	18-Apr-06		P	SL_ME	Hrs	8				869		869
1	03	03	05			Conduct Preliminary Design Review (PDR)	18-Apr-06	18-Apr-06		P	SL_MDD	Hrs	4				258		258
1	03	03	05			Develop Final Design - Magnets	19-Apr-06	2-May-06		P	SL_ME	Hrs	40				4,347		4,347
1	03	03	05			Develop Final Design - Magnets	19-Apr-06	2-May-06		P	SL_MDD	Hrs	200				12,898		12,898
1	03	03	05			Conduct Final Design Review (FDR)	3-May-06	4-May-06		P	SL_ME	Hrs	8				869		869
1	03	03	05			Conduct Final Design Review (FDR)	3-May-06	4-May-06		P	SL_MDD	Hrs	8				516		516
1	03	03	05			Develop Magnetic Measurement Plan	5-May-06	8-May-06		C	SL_ME	Hrs	8				869		869
1	03	03	05			Prep Bid Pak - Magnets	3-Oct-06	3-Oct-06		C	SL_ME	Hrs	8				892		892
1	03	03	05			Prep Bid Pak - Magnets	3-Oct-06	3-Oct-06		C	SL_MDD	Hrs	4				265		265
1	03	03	05			Evaluate Vendor Proposals - Magnets	5-Oct-06	5-Oct-06		C	SL_ME	Hrs	8				892		892

LCLS TPC Detailed Cost Estimate (FY05FY09)

5/5/2005

WBS Level						LCLA DCE March-2005 Description	Early Start	Early Finish	OBS	Fund Type	Res Code	Units	Budgeted Quantity		Fully Burdened and Escalated Cost			
Run Time: 4/22/05 8:43am													Hours	\$	Labor	M&S	Total (No Conting)	
1	2	3	4	5	6	Vendor Fab 1st Lot - Magnets	9-Oct-06	13-Apr-07		C	SA_MSEG	\$\$		190,000			218,500	218,500
1	03	03	05			Disassemble Magnet	9-May-06	21-Jun-06		C	SL_MFMS	Hrs	75		7,740		7,740	
1	03	03	05			Disassemble Magnet	9-May-06	21-Jun-06		C	SL_MFAT	Hrs	75		6,312		6,312	
1	03	03	05			Refurbish Magnet Coils	22-Jun-06	27-Jul-06		C	SL_MFMS	Hrs	200		20,640		20,640	
1	03	03	05			Assemble Magnets	28-Jul-06	6-Oct-06		C	SL_MFAT	Hrs	200		16,876		16,876	
1	03	03	05			Prep for and Paint Magnets (as required)	9-Oct-06	24-Oct-06		C	SL_MFAT	Hrs	100		8,635		8,635	
1	03	03	05			Perform Magnetic Measurement (as required)	25-Oct-06	2-Jan-07		C	SL_MES	Hrs	150		14,292		14,292	
1	03	03	05			Perform Magnet Pre-Instalation Qual	16-Apr-07	17-Apr-07		C	SL_ME	Hrs	8		892		892	
1	03	03	05			Define Magnet Support Requirements	27-Mar-06	28-Mar-06		P	SL_ME	Hrs	8		869		869	
1	03	03	05			Create ICD & Update LCLS Database	29-Mar-06	30-Mar-06		C	SL_ME	Hrs	8		869		869	
1	03	03	05			Develop Preliminary Design - Magnet Supports	4-Apr-06	11-Apr-06		P	SL_ME	Hrs	24		2,608		2,608	
1	03	03	05			Develop Preliminary Design - Magnet Supports	4-Apr-06	11-Apr-06		P	SL_MDD	Hrs	80		5,159		5,159	
1	03	03	05			Conduct Preliminary Design Review (PDR)	12-Apr-06	13-Apr-06		P	SL_ME	Hrs	8		869		869	
1	03	03	05			Conduct Preliminary Design Review (PDR)	12-Apr-06	13-Apr-06		P	SL_MDD	Hrs	8		516		516	
1	03	03	05			Develop Final Design - Magnet Supports	14-Apr-06	19-Apr-06		P	SL_ME	Hrs	16		1,739		1,739	
1	03	03	05			Develop Final Design - Magnet Supports	14-Apr-06	19-Apr-06		P	SL_MDD	Hrs	60		3,869		3,869	
1	03	03	05			Conduct Final Design Review (FDR)	20-Apr-06	21-Apr-06		P	SL_ME	Hrs	8		869		869	
1	03	03	05			Conduct Final Design Review (FDR)	20-Apr-06	21-Apr-06		P	SL_MDD	Hrs	8		516		516	
1	03	03	05			Prep Bid Pak - Magnet Supports	3-Oct-06	4-Oct-06		C	SL_ME	Hrs	8		892		892	
1	03	03	05			Prep Bid Pak - Magnet Supports	3-Oct-06	4-Oct-06		C	SL_MDD	Hrs	4		265		265	
1	03	03	05			Evaluate Vendor Proposals - Supports	6-Oct-06	6-Oct-06		C	SL_ME	Hrs	4		446		446	
1	03	03	05			Vendor Fab 1st Lot - Supts	10-Oct-06	6-Nov-06		C	SA_MSEG	\$\$		45,000			51,750	51,750
1	03	03	05			Procure Misc Materials - Magnet Supports	3-Oct-06	30-Oct-06		C	SL_MSEG	\$\$		15,000			17,250	17,250
1	03	03	05			Fabricate Magnet Supports	31-Oct-06	13-Dec-06		C	SL_MFMS	Hrs	120		12,706		12,706	
1	03	03	05			Perform QC & Inspection on Magnets Supts	14-Dec-06	9-Feb-07		C	SL_MES	Hrs	120		11,434		11,434	
1	03	03	05			Assemble Magnet Supports	12-Feb-07	9-May-07		C	SL_MFAT	Hrs	250		21,588		21,588	
1	03	03	05			Perform Pre-Installation Qualification - Support	10-May-07	17-May-07		C	SL_ME	Hrs	24		2,676		2,676	
1	03	03	05			Develop Magnet Safety Cover Design	27-Mar-06	19-May-06		P	SL_ME	Hrs	16		1,739		1,739	
1	03	03	05			Develop Magnet Safety Cover Design	27-Mar-06	19-May-06		P	SL_MDD	Hrs	160		10,318		10,318	
1	03	03	05			Prep Bid Pak - Magnet Safety Covers	22-May-06	26-May-06		C	SL_ME	Hrs	8		869		869	
1	03	03	05			Evaluate Vendor Proposals	13-Jun-06	19-Jun-06		C	SL_ME	Hrs	8		869		869	
1	03	03	05			Vendor Fab & Assy - Magnet Safety Cover (15ea)	4-Oct-06	13-Mar-07		C	SA_MSEG	\$\$		56,000			64,400	64,400
1	03	03	05			Refurbish Reusable Safety Covers (25ea)	14-Mar-07	12-Oct-07		C	SL_MFAT	Hrs	1,200		103,799		103,799	
1	03	03	06			QM1 ()												
1	03	03	07			QE ()							1,310	15,000	119,167	16,800	135,967	
1	03	03	07			Define Magnet Requirements	15-Apr-05	21-Apr-05		P	SL_ME	Hrs	20		2,114		2,114	
1	03	03	07			Create ICD & Update LCLS Database	22-Apr-05	5-May-05		P	SL_ME	Hrs	40		4,228		4,228	
1	03	03	07			Develop Preliminary Design - Magnet	10-May-05	10-May-05		P	SL_ME	Hrs	2		211		211	
1	03	03	07			Develop Preliminary Design - Magnet	10-May-05	10-May-05		P	SL_MDD	Hrs	14		878		878	
1	03	03	07			Conduct Preliminary Design Review (PDR)	12-May-05	12-May-05		P	SL_ME	Hrs	8		846		846	
1	03	03	07			Conduct Preliminary Design Review (PDR)	12-May-05	12-May-05		P	SL_MDD	Hrs	4		251		251	
1	03	03	07			Develop Final Design - Magnets	13-May-05	13-May-05		P	SL_ME	Hrs	2		211		211	
1	03	03	07			Develop Final Design - Magnets	13-May-05	13-May-05		P	SL_MDD	Hrs	14		878		878	
1	03	03	07			Conduct Final Design Review (FDR)	16-May-05	17-May-05		P	SL_ME	Hrs	8		846		846	
1	03	03	07			Conduct Final Design Review (FDR)	16-May-05	17-May-05		P	SL_MDD	Hrs	8		502		502	
1	03	03	07			Develop Magnetic Measurement Plan	18-May-05	8-Jun-05		P	SL_ME	Hrs	60		6,343		6,343	
1	03	03	07			Procure Misc Materials - Magnets	3-Oct-05	11-Nov-05		C	SL_MSEG	\$\$		15,000			16,800	16,800
1	03	03	07			Fab Tooling	14-Nov-05	4-Jan-06		C	SL_MFMS	Hrs	100		10,320		10,320	
1	03	03	07			Fab Magnet Core	14-Nov-05	13-Dec-05		C	SL_MFMS	Hrs	200		20,640		20,640	
1	03	03	07			Fab Magnet Coils	14-Nov-05	24-Feb-06		C	SL_MFAT	Hrs	600		50,496		50,496	
1	03	03	07			Prep for and Paint Magnets (as required)	27-Feb-06	10-Mar-06		C	SL_MFAT	Hrs	30		2,525		2,525	
1	03	03	07			Assemble Magnets	13-Mar-06	7-Apr-06		C	SL_MFAT	Hrs	80		6,733		6,733	
1	03	03	07			Perform Magnet Fiducialization (as required)	10-Apr-06	21-Apr-06		C	SL_MES	Hrs	40		3,715		3,715	
1	03	03	07			Perform QC & Inspection - Magnets	24-Apr-06	5-May-06		C	SL_MES	Hrs	40		3,715		3,715	
1	03	03	07			Perform Magnetic Measurement (as required)	8-May-06	19-May-06		C	SL_MES	Hrs	40		3,715		3,715	
1	03	03	07			Prep Bid Pak - Magnet Supports	19-Apr-06	19-Apr-06		C	SL_ME	Hrs	-		-		-	
1	03	03	07			Prep Bid Pak - Magnet Supports	19-Apr-06	19-Apr-06		C	SL_MDD	Hrs	-		-		-	
1	03	03	08			Corr (Type 4)							223	57,700	19,404	64,624	84,028	
1	03	03	08			Define Magnet Requirements	9-Jun-05	15-Jun-05		P	SL_ME	Hrs	10		1,057		1,057	
1	03	03	08			Create ICD & Update LCLS Database	16-Jun-05	29-Jun-05		P	SL_ME	Hrs	40		4,228		4,228	
1	03	03	08			Develop Preliminary Design - Magnet	5-Jul-05	5-Jul-05		P	SL_ME	Hrs	2		211		211	
1	03	03	08			Develop Preliminary Design - Magnet	5-Jul-05	5-Jul-05		P	SL_MDD	Hrs	6		376		376	
1	03	03	08			Conduct Preliminary Design Review (PDR)	7-Jul-05	7-Jul-05		P	SL_ME	Hrs	8		846		846	
1	03	03	08			Conduct Preliminary Design Review (PDR)	7-Jul-05	7-Jul-05		P	SL_MDD	Hrs	4		251		251	

LCLS TPC Detailed Cost Estimate (FY05FY09)

5/5/2005

WBS Level						LCLA DCE March-2005 Description	Early Start	Early Finish	OBS	Fund Type	Res Code	Units	Budgeted Quantity		Fully Burdened and Escalated Cost			
Run Time: 4/22/05 8:43am	1	2	3	4	5								6	Hours	\$\$	Labor	M&S	Total (No Conting)
1	03	03	08			Develop Final Design - Magnets	8-Jul-05	8-Jul-05		P	SL_ME	Hrs	2			211		211
1	03	03	08			Develop Final Design - Magnets	8-Jul-05	8-Jul-05		P	SL_MDD	Hrs	6			376		376
1	03	03	08			Conduct Final Design Review (FDR)	11-Jul-05	12-Jul-05		P	SL_ME	Hrs	8			846		846
1	03	03	08			Conduct Final Design Review (FDR)	11-Jul-05	12-Jul-05		P	SL_MDD	Hrs	8			502		502
1	03	03	08			Prep Bid Pak - Magnets	15-Jul-05	11-Aug-05		P	SL_ME	Hrs	8			846		846
1	03	03	08			Prep Bid Pak - Magnets	15-Jul-05	11-Aug-05		P	SL_MDD	Hrs	2			125		125
1	03	03	08			Evaluate Vendor Proposals - Magnets	15-Aug-05	16-Aug-05		P	SL_ME	Hrs	8			846		846
1	03	03	08			Vendor Fab 1st Lot - Magnets	4-Oct-05	10-Apr-06		C	SA_MSEG	\$\$		53,000			59,360	59,360
1	03	03	08			Procure Misc Materials - Magnets	3-Oct-05	28-Oct-05		C	SL_MSEG	\$\$		500			560	560
1	03	03	08			Disassemble Magnet	31-Oct-05	31-Oct-05		C	SL_MFAT	Hrs	20			1,683		1,683
1	03	03	08			Refurbish Magnet Coils	1-Nov-05	9-Nov-05		C	SL_MFMS	Hrs	16			1,651		1,651
1	03	03	08			Assemble Magnets	10-Nov-05	16-Nov-05		C	SL_MFAT	Hrs	20			1,683		1,683
1	03	03	08			Fab Magnet Core	3-Oct-05	3-Oct-05		C	SL_MFMS	Hrs	-			-		-
1	03	03	08			Prep Bid Pak - Magnet Supports	26-Jul-05	26-Jul-05		P	SL_ME	Hrs	-			-		-
1	03	03	08			Prep Bid Pak - Magnet Supports	26-Jul-05	26-Jul-05		P	SL_MDD	Hrs	-			-		-
1	03	03	08			Develop Magnet Safety Cover Design	16-Jun-05	14-Jul-05		P	SL_ME	Hrs	5			529		529
1	03	03	08			Develop Magnet Safety Cover Design	16-Jun-05	14-Jul-05		P	SL_MDD	Hrs	50			3,137		3,137
1	03	03	08			Procure Magnet Safety Cover (42ea)	3-Oct-05	15-Feb-06		C	SL_MSEG	\$\$		4,200			4,704	4,704
1	03	03	09			BYD (Dump Bend)							1,529	174,000		131,080	200,100	331,180
1	03	03	09			Define Magnet Requirements	3-Oct-06	6-Nov-06		C	SL_ME	Hrs	100			11,149		11,149
1	03	03	09			Create ICD & Update LCLS Database	7-Nov-06	20-Nov-06		C	SL_ME	Hrs	40			4,460		4,460
1	03	03	09			Develop Preliminary Design - Magnet	27-Nov-06	8-Dec-06		C	SL_ME	Hrs	150			16,724		16,724
1	03	03	09			Develop Preliminary Design - Magnet	27-Nov-06	8-Dec-06		C	SL_MDD	Hrs	40			2,647		2,647
1	03	03	09			Develop Preliminary Dsn - Magnet Field Analysis	11-Dec-06	16-Jan-07		C	SL_PHS	Hrs	60			4,608		4,608
1	03	03	09			Conduct Preliminary Design Review (PDR)	17-Jan-07	17-Jan-07		C	SL_ME	Hrs	8			892		892
1	03	03	09			Conduct Preliminary Design Review (PDR)	17-Jan-07	17-Jan-07		C	SL_MDD	Hrs	4			265		265
1	03	03	09			Develop Final Design - Magnets	18-Jan-07	31-Jan-07		C	SL_ME	Hrs	40			4,460		4,460
1	03	03	09			Develop Final Design - Magnets	18-Jan-07	31-Jan-07		C	SL_MDD	Hrs	300			19,851		19,851
1	03	03	09			Conduct Final Design Review (FDR)	1-Feb-07	2-Feb-07		C	SL_ME	Hrs	8			892		892
1	03	03	09			Conduct Final Design Review (FDR)	1-Feb-07	2-Feb-07		C	SL_MDD	Hrs	8			529		529
1	03	03	09			Develop Magnetic Measurement Plan	5-Feb-07	16-Feb-07		C	SL_ME	Hrs	40			4,460		4,460
1	03	03	09			Prep Bid Pak - Magnets	20-Feb-07	20-Feb-07		C	SL_ME	Hrs	8			892		892
1	03	03	09			Prep Bid Pak - Magnets	20-Feb-07	20-Feb-07		C	SL_MDD	Hrs	4			265		265
1	03	03	09			Evaluate Vendor Proposals - Magnets	22-Feb-07	23-Feb-07		C	SL_ME	Hrs	8			892		892
1	03	03	09			Vendor Fab 1st Lot - Magnets	27-Feb-07	15-Aug-07		C	SA_MSEG	\$\$		150,000			172,500	172,500
1	03	03	09			Perform Magnet Pre-Installation Qual	16-Aug-07	20-Aug-07		C	SL_ME	Hrs	12			1,338		1,338
1	03	03	09			Define Magnet Support Requirements	7-Nov-06	9-Nov-06		C	SL_ME	Hrs	12			1,338		1,338
1	03	03	09			Create ICD & Update LCLS Database	10-Nov-06	10-Nov-06		C	SL_ME	Hrs	6			669		669
1	03	03	09			Develop Preliminary Design - Magnet Supports	14-Nov-06	28-Nov-06		C	SL_ME	Hrs	36			4,014		4,014
1	03	03	09			Develop Preliminary Design - Magnet Supports	14-Nov-06	28-Nov-06		C	SL_MDD	Hrs	120			7,940		7,940
1	03	03	09			Conduct Preliminary Design Review (PDR)	29-Nov-06	1-Dec-06		C	SL_ME	Hrs	12			1,338		1,338
1	03	03	09			Conduct Preliminary Design Review (PDR)	29-Nov-06	1-Dec-06		C	SL_MDD	Hrs	12			794		794
1	03	03	09			Develop Final Design - Magnet Supports	4-Dec-06	11-Dec-06		C	SL_ME	Hrs	24			2,676		2,676
1	03	03	09			Develop Final Design - Magnet Supports	4-Dec-06	11-Dec-06		C	SL_MDD	Hrs	90			5,955		5,955
1	03	03	09			Conduct Final Design Review (FDR)	12-Dec-06	14-Dec-06		C	SL_ME	Hrs	12			1,338		1,338
1	03	03	09			Conduct Final Design Review (FDR)	12-Dec-06	14-Dec-06		C	SL_MDD	Hrs	12			794		794
1	03	03	09			Prep Bid Pak - Magnet Supports	15-Dec-06	15-Dec-06		C	SL_ME	Hrs	3			334		334
1	03	03	09			Prep Bid Pak - Magnet Supports	15-Dec-06	15-Dec-06		C	SL_MDD	Hrs	6			397		397
1	03	03	09			Evaluate Vendor Proposals - Supports	3-Jan-07	4-Jan-07		C	SL_ME	Hrs	4			446		446
1	03	03	09			Vendor Fab 1st Lot - Supts	8-Jan-07	5-Feb-07		C	SA_MSEG	\$\$		10,500			12,075	12,075
1	03	03	09			Procure Misc Materials - Magnet Supports	15-Dec-06	29-Jan-07		C	SL_MSEG	\$\$		3,000			3,450	3,450
1	03	03	09			Fabricate Magnet Supports	30-Jan-07	9-Feb-07		C	SL_MFMS	Hrs	36			3,812		3,812
1	03	03	09			Perform QC & Inspection on Magnets Supts	12-Feb-07	23-Feb-07		C	SL_MES	Hrs	36			3,430		3,430
1	03	03	09			Assemble Magnet Supports	26-Feb-07	27-Mar-07		C	SL_MFAT	Hrs	90			7,772		7,772
1	03	03	09			Perform Pre-Installation Qualification - Support	28-Mar-07	30-Mar-07		C	SL_ME	Hrs	12			1,338		1,338
1	03	03	09			Develop Magnet Safety Cover Design	7-Nov-06	19-Jan-07		C	SL_ME	Hrs	16			1,784		1,784
1	03	03	09			Develop Magnet Safety Cover Design	7-Nov-06	19-Jan-07		C	SL_MDD	Hrs	160			10,587		10,587
1	03	03	09			Procure Magnet Safety Cover Material	22-Jan-07	5-Mar-07		C	SL_MSEG	\$\$		10,500			12,075	12,075
1	03	03	10			QA ()							268	6,000		22,840	6,720	29,560
1	03	03	10			Define Magnet Requirements	1-Jun-05	7-Jun-05		P	SL_ME	Hrs	8			846		846
1	03	03	10			Create ICD & Update LCLS Database	8-Jun-05	21-Jun-05		P	SL_ME	Hrs	8			846		846
1	03	03	10			Develop Preliminary Design - Magnet	24-Jun-05	8-Jul-05		P	SL_MDD	Hrs	4			251		251
1	03	03	10			Develop Final Design - Magnets	12-Jul-05	25-Jul-05		P	SL_ME	Hrs	2			211		211
1	03	03	10			Develop Final Design - Magnets	12-Jul-05	25-Jul-05		P	SL_MDD	Hrs	20			1,255		1,255

LCLS TPC Detailed Cost Estimate (FY05FY09)

5/5/2005

WBS Level						LCLA DCE March-2005 Description	Early Start	Early Finish	OBS	Fund Type	Res Code	Units	Budgeted Quantity		Fully Burdened and Escalated Cost				
Run Time: 4/22/05 8:43am													Hours	\$\$	Labor	M&S	Total (No Conting)		
1	2	3	4	5	6														
1	03	03	10			Conduct Final Design Review (FDR)	26-Jul-05	27-Jul-05		P	SL_ME	Hrs	8			846		846	
1	03	03	10			Conduct Final Design Review (FDR)	26-Jul-05	27-Jul-05		P	SL_MDD	Hrs	8			502		502	
1	03	03	10			Develop Magnetic Measurement Plan	28-Jul-05	29-Jul-05		P	SL_ME	Hrs	8			846		846	
1	03	03	10			Procure Misc Materials - Magnets	3-Oct-05	28-Oct-05		C	SL_MSEG	\$\$		500			560		560
1	03	03	10			Disassemble Magnet	31-Oct-05	31-Oct-05		C	SL_MFMS	Hrs	8			826		826	
1	03	03	10			Disassemble Magnet	31-Oct-05	31-Oct-05		C	SL_MFAT	Hrs	-			-		-	
1	03	03	10			Refurbish Magnet Coils	1-Nov-05	1-Nov-05		C	SL_MFMS	Hrs	4			413		413	
1	03	03	10			Assemble Magnets	2-Nov-05	3-Nov-05		C	SL_MFAT	Hrs	8			673		673	
1	03	03	10			Perform Magnetic Measurement (as required)	4-Nov-05	5-Dec-05		C	SL_MES	Hrs	40			3,715		3,715	
1	03	03	10			Perform Magnet Pre-Instalation Qual	6-Dec-05	7-Dec-05		C	SL_ME	Hrs	8			869		869	
1	03	03	10			Define Magnet Support Requirements	8-Jun-05	9-Jun-05		P	SL_ME	Hrs	8			846		846	
1	03	03	10			Create ICD & Update LCLS Database	10-Jun-05	10-Jun-05		P	SL_ME	Hrs	4			423		423	
1	03	03	10			Develop Preliminary Design - Magnet Supports	14-Jun-05	15-Jun-05		P	SL_ME	Hrs	8			846		846	
1	03	03	10			Develop Preliminary Design - Magnet Supports	14-Jun-05	15-Jun-05		P	SL_MDD	Hrs	40			2,510		2,510	
1	03	03	10			Conduct Preliminary Design Review (PDR)	16-Jun-05	16-Jun-05		P	SL_ME	Hrs	4			423		423	
1	03	03	10			Conduct Preliminary Design Review (PDR)	16-Jun-05	16-Jun-05		P	SL_MDD	Hrs	4			251		251	
1	03	03	10			Develop Final Design - Magnet Supports	17-Jun-05	20-Jun-05		P	SL_ME	Hrs	8			846		846	
1	03	03	10			Develop Final Design - Magnet Supports	17-Jun-05	20-Jun-05		P	SL_MDD	Hrs	20			1,255		1,255	
1	03	03	10			Conduct Final Design Review (FDR)	21-Jun-05	21-Jun-05		P	SL_ME	Hrs	4			423		423	
1	03	03	10			Conduct Final Design Review (FDR)	21-Jun-05	21-Jun-05		P	SL_MDD	Hrs	4			251		251	
1	03	03	10			Prep Bid Pak - Magnet Supports	22-Jun-05	22-Jun-05		P	SL_ME	Hrs	2			211		211	
1	03	03	10			Prep Bid Pak - Magnet Supports	22-Jun-05	22-Jun-05		P	SL_MDD	Hrs	4			251		251	
1	03	03	10			Evaluate Vendor Proposals - Supports	24-Jun-05	24-Jun-05		P	SL_ME	Hrs	4			423		423	
1	03	03	10			Vendor Fab 1st Lot - Supts	4-Oct-05	30-Nov-05		C	SA_MSEG	\$\$		5,000			5,600		5,600
1	03	03	10			Procure Misc Materials - Magnet Supports	3-Oct-05	28-Oct-05		C	SL_MSEG	\$\$		500			560		560
1	03	03	10			Assemble Magnet Supports	31-Oct-05	11-Nov-05		C	SL_MFAT	Hrs	16			1,347		1,347	
1	03	03	10			Perform Pre-Installation Qualification - Support	1-Dec-05	1-Dec-05		C	SL_ME	Hrs	4			435		435	
1	03	03	11			BYPM (Safety Dump)							2,508	99,500	228,578	114,425	343,003		
1	03	03	11			Define Magnet Requirements	3-Oct-05	4-Nov-05		P	SL_ME	Hrs	100			10,867		10,867	
1	03	03	11			Create ICD & Update LCLS Database	7-Nov-05	18-Nov-05		C	SL_ME	Hrs	40			4,347		4,347	
1	03	03	11			Develop Preliminary Design - Magnet	23-Nov-05	8-Dec-05		P	SL_ME	Hrs	150			16,301		16,301	
1	03	03	11			Develop Preliminary Design - Magnet	23-Nov-05	8-Dec-05		P	SL_MDD	Hrs	40			2,580		2,580	
1	03	03	11			Develop Preliminary Dsn - Magnet Field Analysis	9-Dec-05	13-Jan-06		P	SL_PHS	Hrs	60			4,491		4,491	
1	03	03	11			Conduct Preliminary Design Review (PDR)	17-Jan-06	17-Jan-06		P	SL_ME	Hrs	8			869		869	
1	03	03	11			Conduct Preliminary Design Review (PDR)	17-Jan-06	17-Jan-06		P	SL_MDD	Hrs	4			258		258	
1	03	03	11			Develop Final Design - Magnets	18-Jan-06	31-Jan-06		P	SL_ME	Hrs	40			4,347		4,347	
1	03	03	11			Develop Final Design - Magnets	18-Jan-06	31-Jan-06		P	SL_MDD	Hrs	300			19,347		19,347	
1	03	03	11			Conduct Final Design Review (FDR)	1-Feb-06	2-Feb-06		P	SL_ME	Hrs	8			869		869	
1	03	03	11			Conduct Final Design Review (FDR)	1-Feb-06	2-Feb-06		P	SL_MDD	Hrs	8			516		516	
1	03	03	11			Develop Magnetic Measurement Plan	3-Feb-06	16-Feb-06		C	SL_ME	Hrs	40			4,347		4,347	
1	03	03	11			Prep Bid Pak - Misc Materials - Magnets	3-Oct-06	9-Oct-06		C	SL_ME	Hrs	8			892		892	
1	03	03	11			Evaluate Vendor Proposals - Misc Mtrls - Magnets	17-Oct-06	23-Oct-06		C	SL_ME	Hrs	8			892		892	
1	03	03	11			Vendor Fab & Assy - Misc Materials - Magnets	25-Oct-06	21-Nov-06		C	SA_MSEG	\$\$		80,000			92,000		92,000
1	03	03	11			Fab Tooling	22-Nov-06	5-Jan-07		C	SL_MFMS	Hrs	100			10,588		10,588	
1	03	03	11			Fab Magnet Core	8-Jan-07	1-May-07		C	SL_MFMS	Hrs	500			52,940		52,940	
1	03	03	11			Prep for and Paint Magnets (as required)	2-May-07	30-May-07		C	SL_MFAT	Hrs	100			8,635		8,635	
1	03	03	11			Assemble Magnets	31-May-07	5-Jul-07		C	SL_MFAT	Hrs	150			12,953		12,953	
1	03	03	11			Perform Magnet Fiducialization (as required)	6-Jul-07	19-Jul-07		C	SL_MES	Hrs	40			3,811		3,811	
1	03	03	11			Perform QC & Inspection - Magnets	20-Jul-07	16-Aug-07		C	SL_MES	Hrs	150			14,292		14,292	
1	03	03	11			Perform Magnetic Measurement (as required)	17-Aug-07	14-Sep-07		C	SL_MES	Hrs	120			11,434		11,434	
1	03	03	11			Perform Magnet Pre-Instalation Qual	17-Sep-07	18-Sep-07		C	SL_ME	Hrs	8			892		892	
1	03	03	11			Define Magnet Support Requirements	3-Oct-06	4-Oct-06		C	SL_ME	Hrs	8			892		892	
1	03	03	11			Create ICD & Update LCLS Database	5-Oct-06	5-Oct-06		C	SL_ME	Hrs	4			446		446	
1	03	03	11			Develop Preliminary Design - Magnet Supports	9-Oct-06	16-Oct-06		C	SL_ME	Hrs	24			2,676		2,676	
1	03	03	11			Develop Preliminary Design - Magnet Supports	9-Oct-06	16-Oct-06		C	SL_MDD	Hrs	80			5,294		5,294	
1	03	03	11			Conduct Preliminary Design Review (PDR)	17-Oct-06	18-Oct-06		C	SL_ME	Hrs	8			892		892	
1	03	03	11			Conduct Preliminary Design Review (PDR)	17-Oct-06	18-Oct-06		C	SL_MDD	Hrs	8			529		529	
1	03	03	11			Develop Final Design - Magnet Supports	19-Oct-06	24-Oct-06		C	SL_ME	Hrs	16			1,784		1,784	
1	03	03	11			Develop Final Design - Magnet Supports	19-Oct-06	24-Oct-06		C	SL_MDD	Hrs	60			3,970		3,970	
1	03	03	11			Conduct Final Design Review (FDR)	25-Oct-06	26-Oct-06		C	SL_ME	Hrs	8			892		892	
1	03	03	11			Conduct Final Design Review (FDR)	25-Oct-06	26-Oct-06		C	SL_MDD	Hrs	8			529		529	
1	03	03	11			Prep Bid Pak - Magnet Supports	27-Oct-06	27-Oct-06		C	SL_ME	Hrs	2			223		223	
1	03	03	11			Prep Bid Pak - Magnet Supports	27-Oct-06	27-Oct-06		C	SL_MDD	Hrs	4			265		265	
1	03	03	11			Evaluate Vendor Proposals - Supports	31-Oct-06	31-Oct-06		C	SL_ME	Hrs	4			446		446	

LCLS TPC Detailed Cost Estimate (FY05FY09)

5/5/2005

WBS Level						LCLA DCE March-2005 Description	Early Start	Early Finish	OBS	Fund Type	Res Code	Units	Budgeted Quantity		Fully Burdened and Escalated Cost				
Run Time: 4/22/05 8:43am													Hours	\$	Labor	M&S	Total (No Conting)		
1	2	3	4	5	6														
1	03	03	11			Vendor Fab 1st Lot - Supts	2-Nov-06	1-Dec-06		C	SA_MSSC	\$\$			7,000			8,050	8,050
1	03	03	11			Procure Misc Materials - Magnet Supports	27-Oct-06	27-Nov-06		C	SL_MSEG	\$\$			2,000			2,300	2,300
1	03	03	11			Fabricate Magnet Supports	28-Nov-06	5-Dec-06		C	SL_MFMS	Hrs	24				2,541		2,541
1	03	03	11			Perform QC & Inspection on Magnets Supts	6-Dec-06	13-Dec-06		C	SL_MES	Hrs	24				2,287		2,287
1	03	03	11			Assemble Magnet Supports	14-Dec-06	19-Jan-07		C	SL_MFAT	Hrs	60				5,181		5,181
1	03	03	11			Perform Pre-Installation Qualification - Support	22-Jan-07	23-Jan-07		C	SL_ME	Hrs	8				892		892
1	03	03	11			Develop Magnet Safety Cover Design	3-Oct-06	29-Nov-06		C	SL_ME	Hrs	16				1,784		1,784
1	03	03	11			Develop Magnet Safety Cover Design	3-Oct-06	29-Nov-06		C	SL_MDD	Hrs	160				10,587		10,587
1	03	03	11			Procure Magnet Safety Cover Material	30-Nov-06	12-Mar-07		C	SL_MSEG	\$\$			10,500			12,075	12,075
1	03	03	12			BYKIK (Single Beam Kicker)							2,212	32,500		202,942	37,375	240,317	
1	03	03	12			Define Magnet Requirements	3-Oct-06	6-Nov-06		C	SL_ME	Hrs	100				11,149		11,149
1	03	03	12			Create ICD & Update LCLS Database	7-Nov-06	20-Nov-06		C	SL_ME	Hrs	40				4,460		4,460
1	03	03	12			Develop Preliminary Design - Magnet	27-Nov-06	8-Dec-06		C	SL_PCE	Hrs	120				14,240		14,240
1	03	03	12			Develop Preliminary Design - Magnet	27-Nov-06	8-Dec-06		C	SL_ME	Hrs	20				2,230		2,230
1	03	03	12			Develop Preliminary Design - Magnet	27-Nov-06	8-Dec-06		C	SL_MDD	Hrs	40				2,647		2,647
1	03	03	12			Develop Preliminary Dsn - Magnet Field Analysis	11-Dec-06	16-Jan-07		C	SL_PHS	Hrs	60				4,608		4,608
1	03	03	12			Conduct Preliminary Design Review (PDR)	17-Jan-07	17-Jan-07		C	SL_ME	Hrs	8				892		892
1	03	03	12			Conduct Preliminary Design Review (PDR)	17-Jan-07	17-Jan-07		C	SL_MDD	Hrs	4				265		265
1	03	03	12			Develop Final Design - Magnets	18-Jan-07	31-Jan-07		C	SL_PCE	Hrs	120				14,240		14,240
1	03	03	12			Develop Final Design - Magnets	18-Jan-07	31-Jan-07		C	SL_ME	Hrs	40				4,460		4,460
1	03	03	12			Develop Final Design - Magnets	18-Jan-07	31-Jan-07		C	SL_MDD	Hrs	300				19,851		19,851
1	03	03	12			Conduct Final Design Review (FDR)	1-Feb-07	2-Feb-07		C	SL_ME	Hrs	8				892		892
1	03	03	12			Conduct Final Design Review (FDR)	1-Feb-07	2-Feb-07		C	SL_MDD	Hrs	8				529		529
1	03	03	12			Develop Magnetic Measurement Plan	5-Feb-07	16-Feb-07		C	SL_ME	Hrs	40				4,460		4,460
1	03	03	12			Procure Misc Materials - Magnets	20-Feb-07	19-Mar-07		C	SL_MSEG	\$\$			20,000			23,000	23,000
1	03	03	12			Fab Tooling	20-Mar-07	30-Apr-07		C	SL_MFMS	Hrs	150				15,882		15,882
1	03	03	12			Fab Magnet Core	1-May-07	26-Jun-07		C	SL_MFMS	Hrs	200				21,176		21,176
1	03	03	12			Fab Magnet Coils	27-Jun-07	20-Sep-07		C	SL_MFAT	Hrs	200				17,270		17,270
1	03	03	12			Prep for and Paint Magnets (as required)	21-Sep-07	27-Sep-07		C	SL_MFAT	Hrs	40				3,454		3,454
1	03	03	12			Assemble Magnets	28-Sep-07	4-Oct-07		C	SL_MFAT	Hrs	40				3,526		3,526
1	03	03	12			Perform Magnet Fiducialization (as required)	5-Oct-07	18-Oct-07		C	SL_MES	Hrs	40				3,910		3,910
1	03	03	12			Perform QC & Inspection - Magnets	19-Oct-07	15-Nov-07		C	SL_MES	Hrs	60				5,866		5,866
1	03	03	12			Perform Magnetic Measurement (as required)	16-Nov-07	2-Jan-08		C	SL_MES	Hrs	40				3,910		3,910
1	03	03	12			Perform Magnet Pre-Instlation Qual	3-Jan-08	4-Jan-08		C	SL_ME	Hrs	8				915		915
1	03	03	12			Define Magnet Support Requirements	7-Nov-06	8-Nov-06		C	SL_ME	Hrs	8				892		892
1	03	03	12			Create ICD & Update LCLS Database	9-Nov-06	9-Nov-06		C	SL_ME	Hrs	4				446		446
1	03	03	12			Develop Preliminary Design - Magnet Supports	13-Nov-06	20-Nov-06		C	SL_ME	Hrs	24				2,676		2,676
1	03	03	12			Develop Preliminary Design - Magnet Supports	13-Nov-06	20-Nov-06		C	SL_MDD	Hrs	80				5,294		5,294
1	03	03	12			Conduct Preliminary Design Review (PDR)	21-Nov-06	22-Nov-06		C	SL_ME	Hrs	8				892		892
1	03	03	12			Conduct Preliminary Design Review (PDR)	21-Nov-06	22-Nov-06		C	SL_MDD	Hrs	8				529		529
1	03	03	12			Develop Final Design - Magnet Supports	27-Nov-06	30-Nov-06		C	SL_ME	Hrs	16				1,784		1,784
1	03	03	12			Develop Final Design - Magnet Supports	27-Nov-06	30-Nov-06		C	SL_MDD	Hrs	60				3,970		3,970
1	03	03	12			Conduct Final Design Review (FDR)	1-Dec-06	4-Dec-06		C	SL_ME	Hrs	8				892		892
1	03	03	12			Conduct Final Design Review (FDR)	1-Dec-06	4-Dec-06		C	SL_MDD	Hrs	8				529		529
1	03	03	12			Prep Bid Pak - Magnet Supports	5-Dec-06	5-Dec-06		C	SL_ME	Hrs	2				223		223
1	03	03	12			Prep Bid Pak - Magnet Supports	5-Dec-06	5-Dec-06		C	SL_MDD	Hrs	4				265		265
1	03	03	12			Evaluate Vendor Proposals - Supports	7-Dec-06	7-Dec-06		C	SL_ME	Hrs	4				446		446
1	03	03	12			Vendor Fab 1st Lot - Supts	11-Dec-06	23-Jan-07		C	SA_MSSC	\$\$			7,000			8,050	8,050
1	03	03	12			Procure Misc Materials - Magnet Supports	5-Dec-06	17-Jan-07		C	SL_MSEG	\$\$			2,000			2,300	2,300
1	03	03	12			Fabricate Magnet Supports	18-Jan-07	25-Jan-07		C	SL_MFMS	Hrs	24				2,541		2,541
1	03	03	12			Perform QC & Inspection on Magnets Supts	26-Jan-07	2-Feb-07		C	SL_MES	Hrs	24				2,287		2,287
1	03	03	12			Assemble Magnet Supports	5-Feb-07	26-Feb-07		C	SL_MFAT	Hrs	60				5,181		5,181
1	03	03	12			Perform Pre-Installation Qualification - Support	27-Feb-07	28-Feb-07		C	SL_ME	Hrs	8				892		892
1	03	03	12			Develop Magnet Safety Cover Design	7-Nov-06	19-Jan-07		C	SL_ME	Hrs	16				1,784		1,784
1	03	03	12			Develop Magnet Safety Cover Design	7-Nov-06	19-Jan-07		C	SL_MDD	Hrs	160				10,587		10,587
1	03	03	12			Procure Magnet Safety Cover (1ea)	22-Jan-07	16-Feb-07		C	SL_MSEG	\$\$			3,500			4,025	4,025
1	03	03	13			BYW ()							516	20,000		40,721	23,000	63,721	
1	03	03	13			Define Magnet Support Requirements	3-Oct-05	4-Oct-05		P	SL_ME	Hrs	8				869		869
1	03	03	13			Create ICD & Update LCLS Database	5-Oct-05	5-Oct-05		C	SL_ME	Hrs	4				435		435
1	03	03	13			Develop Preliminary Design - Magnet Supports	7-Oct-05	14-Oct-05		P	SL_ME	Hrs	24				2,608		2,608
1	03	03	13			Develop Preliminary Design - Magnet Supports	7-Oct-05	14-Oct-05		P	SL_MDD	Hrs	80				5,159		5,159
1	03	03	13			Conduct Preliminary Design Review (PDR)	17-Oct-05	18-Oct-05		P	SL_ME	Hrs	8				869		869
1	03	03	13			Conduct Preliminary Design Review (PDR)	17-Oct-05	18-Oct-05		P	SL_MDD	Hrs	8				516		516
1	03	03	13			Develop Final Design - Magnet Supports	19-Oct-05	24-Oct-05		P	SL_ME	Hrs	16				1,739		1,739

LCLS TPC Detailed Cost Estimate (FY05FY09)

5/5/2005

WBS Level						LCLA DCE March-2005	Early	Early	OBS	Fund	Res	Units	Budgeted Quantity		Fully Burdened and Escalated Cost				
Run Time: 4/22/05 8:43am						Description	Start	Finish		Type	Code		Hours	\$	Labor	M&S	Total (No Conting)		
1	2	3	4	5	6														
1	03	03	13			Develop Final Design - Magnet Supports	19-Oct-05	24-Oct-05		P	SL_MDD	Hrs	60			3,869		3,869	
1	03	03	13			Conduct Final Design Review (FDR)	25-Oct-05	26-Oct-05		P	SL_ME	Hrs	8			869		869	
1	03	03	13			Conduct Final Design Review (FDR)	25-Oct-05	26-Oct-05		P	SL_MDD	Hrs	8			516		516	
1	03	03	13			Procure Magnet Supports	3-Oct-06	30-Oct-06		C	SL_MSEG	\$\$		5,000			5,750		5,750
1	03	03	13			Procure Misc Materials - Magnet Supports	3-Oct-06	30-Oct-06		C	SL_MSEG	\$\$		1,000			1,150		1,150
1	03	03	13			Fabricate Magnet Supports	31-Oct-06	7-Nov-06		C	SL_MFMS	Hrs	24			2,541		2,541	
1	03	03	13			Perform QC & Inspection on Magnets Supts	8-Nov-06	15-Nov-06		C	SL_MES	Hrs	24			2,287		2,287	
1	03	03	13			Assemble Magnet Supports	16-Nov-06	8-Dec-06		C	SL_MFAT	Hrs	60			5,181		5,181	
1	03	03	13			Perform Pre-Installation Qualification - Support	11-Dec-06	12-Dec-06		C	SL_ME	Hrs	8			892		892	
1	03	03	13			Develop Magnet Safety Cover Design	3-Oct-06	29-Nov-06		C	SL_ME	Hrs	16			1,784		1,784	
1	03	03	13			Develop Magnet Safety Cover Design	3-Oct-06	29-Nov-06		C	SL_MDD	Hrs	160			10,587		10,587	
1	03	03	13			Procure Magnet Safety Cover (4ea)	30-Nov-06	9-Feb-07		C	SL_MSEG	\$\$		14,000			16,100		16,100
1	03	04				Linac Vacuum Subsystem							13,142	587,896	1,256,858	662,927	1,919,785		
1	03	04	02			Linac Beamline Vacuum System							2,712	51,250	261,362	57,400	318,762		
1	03	04	02			Define Linac BL Vac Sys Requirements	5-Jan-05	19-Jan-05		P	SL_ME	Hrs	24			2,537		2,537	
1	03	04	02			Create ICD & Update LCLS Database	20-Jan-05	21-Jan-05		P	SL_ME	Hrs	8			846		846	
1	03	04	02			Review & Accept Requirements, ICD & DB Entries	24-Jan-05	24-Jan-05		P	SL_ME	Hrs	24			2,537		2,537	
1	03	04	02			Develop Preliminary Vacuum System Design	25-Jan-05	19-Apr-05		P	SL_ME	Hrs	120			12,685		12,685	
1	03	04	02			Develop Prelim Component Layouts, Details & Supp	9-Mar-05	3-May-05		P	SL_MDD	Hrs	120			7,529		7,529	
1	03	04	02			Conduct Prelim Design Review (PDR) - BL Vac Sys	4-May-05	4-May-05		P	SL_ME	Hrs	8			846		846	
1	03	04	02			Develop Final Design	5-May-05	15-Jul-05		P	SL_ME	Hrs	-			-		-	
1	03	04	02			Develop Final Design	5-May-05	15-Jul-05		P	SL_MDD	Hrs	240			15,058		15,058	
1	03	04	02			Conduct Final Design Review (FDR) - BL Vac Sys	18-Jul-05	18-Jul-05		P	SL_ME	Hrs	8			846		846	
1	03	04	02			Develop Vacuum Post-Processing Plan	3-Oct-05	7-Oct-05		P	SL_ME	Hrs	40			4,347		4,347	
1	03	04	02			Prep Bid Pak - Linac Beamline Vacuum System	10-Oct-05	21-Oct-05		C	SL_ME	Hrs	40			4,347		4,347	
1	03	04	02			Evaluate Vendor Proposals	24-Oct-05	4-Nov-05		C	SL_ME	Hrs	40			4,347		4,347	
1	03	04	02			Procure Vacuum Chamber Materials	3-Oct-05	28-Oct-05		C	SL_MSEG	\$\$		12,000			13,440		13,440
1	03	04	02			Fab Vacuum Chamber	31-Oct-05	11-Jan-06		C	SL_MFMS	Hrs	320			33,024		33,024	
1	03	04	02			Vacuum Chamber QA	12-Jan-06	26-Jan-06		C	SL_MFMS	Hrs	40			4,128		4,128	
1	03	04	02			Prep for, Clean & Plate Vacuum Equipment	27-Jan-06	24-Feb-06		C	SL_MFPC	Hrs	120			19,771		19,771	
1	03	04	02			Vacuum Chamber Welding	27-Feb-06	21-Apr-06		C	SL_MFMS	Hrs	200			20,640		20,640	
1	03	04	02			Process Vacuum Chamber	24-Apr-06	5-Jun-06		C	SL_MFAT	Hrs	240			20,198		20,198	
1	03	04	02			Perform QC and Inspection	6-Jun-06	13-Jun-06		C	SL_MES	Hrs	40			3,715		3,715	
1	03	04	02			Prep for & Deliver to "Pre-Install Qual Test"	14-Jun-06	14-Jun-06		C	SL_MFAT	Hrs	40			3,366		3,366	
1	03	04	02			Perform Pre-Installation Qual Test	15-Jun-06	21-Jun-06		C	SL_MFAT	Hrs	40			3,366		3,366	
1	03	04	02			Prep Bid Pak - BL Vacuum Bellows Module	3-Oct-05	21-Oct-05		P	SL_ME	Hrs	40			4,347		4,347	
1	03	04	02			Evaluate Vendor Proposals	24-Oct-05	4-Nov-05		C	SL_ME	Hrs	40			4,347		4,347	
1	03	04	02			Procure Bellows Modules	3-Oct-05	28-Oct-05		C	SL_MSEG	\$\$		8,250			9,240		9,240
1	03	04	02			Procure Bellows Material	3-Oct-05	28-Oct-05		C	SL_MSEG	\$\$		3,000			3,360		3,360
1	03	04	02			Bellows Fabrication	13-Jan-06	10-Feb-06		C	SL_MFMS	Hrs	80			8,256		8,256	
1	03	04	02			Bellows QA	13-Feb-06	16-Feb-06		C	SL_MFMS	Hrs	16			1,651		1,651	
1	03	04	02			Bellows Cleaning/Plating	17-Feb-06	1-Mar-06		C	SL_MFPC	Hrs	32			5,272		5,272	
1	03	04	02			Bellows Welding	2-Mar-06	13-Mar-06		C	SL_MFMS	Hrs	32			3,302		3,302	
1	03	04	02			Bellows Vacuum Processing	14-Mar-06	3-Apr-06		C	SL_MFAT	Hrs	120			10,099		10,099	
1	03	04	02			Procure Misc Materials - Vacuum Supports	3-Oct-05	28-Oct-05		C	SL_MSEG	\$\$		28,000			31,360		31,360
1	03	04	02			Fab Vacuum Support	31-Oct-05	7-Apr-06		C	SL_MFMS	Hrs	320			33,024		33,024	
1	03	04	02			Assemble Beamline Vacuum Supports	30-Nov-05	5-May-06		C	SL_MFAT	Hrs	320			26,931		26,931	
1	03	04	03			BC1 Vacuum System							1,560	112,370	150,824	122,483	273,307		
1	03	04	03			Develop Final Design	1-Oct-04	13-Dec-04		P	SL_ME	Hrs	100			10,571		10,571	
1	03	04	03			Develop Final Design	1-Oct-04	13-Dec-04		P	SL_MDD	Hrs	300			18,822		18,822	
1	03	04	03			Conduct Final Design Review (FDR) - BC1 Vac Sys	14-Dec-04	14-Dec-04		P	SL_ME	Hrs	20			2,114		2,114	
1	03	04	03			Conduct Final Design Review (FDR) - BC1 Vac Sys	14-Dec-04	14-Dec-04		P	SL_MDD	Hrs	20			1,255		1,255	
1	03	04	03			Develop Vacuum Post-Processing Plan	15-Dec-04	4-Jan-05		P	SL_ME	Hrs	40			4,228		4,228	
1	03	04	03			Vendor Fab & Assy - Vacuum Chamber Materials	2-Jun-05	29-Jun-05		L	SA_MSEG	\$\$		112,370			122,483		122,483
1	03	04	03			RCV: from Vendor - Vacuum Chamber Materials	0-Jan-00	29-Jun-05		L	SL_MSEG	\$\$		-		-		-	
1	03	04	03			Fab Vacuum Chamber	30-Jun-05	18-Nov-05		L	SL_MFMS	Hrs	480			48,659		48,659	
1	03	04	03			Vacuum Chamber QA	21-Nov-05	2-Dec-05		C	SL_MES	Hrs	120			11,144		11,144	
1	03	04	03			Prep for, Clean & Plate Vacuum Equipment	5-Dec-05	3-Jan-06		C	SL_MFPC	Hrs	120			19,771		19,771	
1	03	04	03			Vacuum Chamber Welding	4-Jan-06	27-Jan-06		C	SL_MFMS	Hrs	120			12,384		12,384	
1	03	04	03			Process Vacuum Chamber	30-Jan-06	7-Feb-06		C	SL_MFAT	Hrs	80			6,733		6,733	
1	03	04	03			Perform QC and Inspection	8-Feb-06	15-Feb-06		C	SL_MES	Hrs	80			7,430		7,430	
1	03	04	03			Prep for & Deliver to "Pre-Install Qual Test"	16-Feb-06	16-Feb-06		C	SL_MFAT	Hrs	40			3,366		3,366	
1	03	04	03			Perform Pre-Installation Qual Test	17-Feb-06	24-Feb-06		C	SL_ME	Hrs	40			4,347		4,347	
1	03	04	04			BC2 Vacuum System							1,896	162,550	182,158	182,056	364,214		

LCLS TPC Detailed Cost Estimate (FY05FY09)

5/5/2005

WBS Level						LCLA DCE March-2005 Description	Early Start	Early Finish	OBS	Fund Type	Res Code	Units	Budgeted Quantity		Fully Burdened and Escalated Cost				
Run Time: 4/22/05 8:43am													Hours	\$	Labor	M&S	Total (No Conting)		
1	03	04	04	5	6	Define BC2 Vac Sys Requirements	5-May-05	18-May-05		P	SL_ME	Hrs	40			4,228		4,228	
1	03	04	04			Create ICD & Update LCLS Database	19-May-05	20-May-05		P	SL_ME	Hrs	8			846		846	
1	03	04	04			Review & Accept Requirements, ICD & DB Entries	23-May-05	23-May-05		P	SL_ME	Hrs	8			846		846	
1	03	04	04			Develop Preliminary Vacuum System Design	24-May-05	20-Jul-05		P	SL_ME	Hrs	100			10,571		10,571	
1	03	04	04			Develop Preliminary Vacuum System Design	24-May-05	20-Jul-05		P	SL_MDD	Hrs	200			12,548		12,548	
1	03	04	04			Conduct Prelim Design Review (PDR) - BC2 Vac Sys	21-Jul-05	27-Jul-05		P	SL_ME	Hrs	40			4,228		4,228	
1	03	04	04			Conduct Prelim Design Review (PDR) - BC2 Vac Sys	21-Jul-05	27-Jul-05		P	SL_MDD	Hrs	40			2,510		2,510	
1	03	04	04			Develop Final Design -BC2 Vac	28-Jul-05	6-Oct-05		P	SL_ME	Hrs	100			10,595		10,595	
1	03	04	04			Develop Final Design -BC2 Vac	28-Jul-05	6-Oct-05		P	SL_MDD	Hrs	200			12,576		12,576	
1	03	04	04			Conduct Final Design Review (FDR) - BC2 Vac Sys	7-Oct-05	13-Oct-05		P	SL_ME	Hrs	20			2,173		2,173	
1	03	04	04			Conduct Final Design Review (FDR) - BC2 Vac Sys	7-Oct-05	13-Oct-05		P	SL_MDD	Hrs	20			1,290		1,290	
1	03	04	04			Develop Vacuum Post-Processing Plan	14-Oct-05	20-Oct-05		P	SL_ME	Hrs	40			4,347		4,347	
1	03	04	04			Procure Vacuum Chamber Materials	23-Jan-06	17-Feb-06		C	SA_MSEG	\$\$		150,000			168,000		168,000
1	03	04	04			Procure Bellows Module	23-Jan-06	17-Feb-06		C	SA_MSEG	\$\$		12,000			13,440		13,440
1	03	04	04			Procure CF Copper Gasket	23-Jan-06	17-Feb-06		C	SA_MSEG	\$\$		170			190		190
1	03	04	04			Procure CF Bolt Set	23-Jan-06	17-Feb-06		C	SA_MSEG	\$\$		380			426		426
1	03	04	04			Fab Vacuum Chamber	21-Feb-06	28-Aug-06		C	SL_MFMS	Hrs	480			49,536		49,536	
1	03	04	04			Vacuum Chamber QA	2-Oct-06	11-Oct-06		C	SL_MES	Hrs	120			11,434		11,434	
1	03	04	04			Prep for, Clean & Plate Vacuum Equipment	12-Oct-06	26-Oct-06		C	SL_MFPC	Hrs	120			20,286		20,286	
1	03	04	04			Vacuum Chamber Welding	27-Oct-06	20-Nov-06		C	SL_MFMS	Hrs	120			12,706		12,706	
1	03	04	04			Process Vacuum Chamber	21-Nov-06	1-Dec-06		C	SL_MFAT	Hrs	80			6,908		6,908	
1	03	04	04			Perform QC and Inspection	4-Dec-06	11-Dec-06		C	SL_MES	Hrs	80			7,622		7,622	
1	03	04	04			Prep for & Deliver to "Pre-Install Qual Test"	12-Dec-06	12-Dec-06		C	SL_MFAT	Hrs	40			3,454		3,454	
1	03	04	04			Perform Pre-Installation Qual Test	13-Dec-06	3-Jan-07		C	SL_MFAT	Hrs	40			3,454		3,454	
1	03	04	05			Linac to Undulator (LTU) Vacuum System							4,142	231,744	389,197	266,507	655,704		
1	03	04	05			Define LTU Vac Sys Requirements	3-Oct-05	14-Oct-05		P	SL_ME	Hrs	24			2,608		2,608	
1	03	04	05			Create ICD & Update LCLS Database	17-Oct-05	18-Oct-05		C	SL_ME	Hrs	8			869		869	
1	03	04	05			Review & Accept Requirements, ICD & DB Entries	19-Oct-05	20-Oct-05		P	SL_ME	Hrs	8			869		869	
1	03	04	05			Develop Preliminary Vacuum System Design	21-Oct-05	30-Mar-06		C	SL_ME	Hrs	320			34,774		34,774	
1	03	04	05			Develop Preliminary Vacuum System Design	21-Oct-05	30-Mar-06		C	SL_MDD	Hrs	600			38,694		38,694	
1	03	04	05			Develop Preliminary Vac Sys Supports Design	21-Oct-05	3-Jan-06		C	SL_ME	Hrs	24			2,608		2,608	
1	03	04	05			Develop Preliminary Vac Sys Supports Design	21-Oct-05	3-Jan-06		C	SL_MDD	Hrs	160			10,318		10,318	
1	03	04	05			Conduct Prelim Design Review (PDR) - LTU Vac Sys	31-Mar-06	5-Apr-06		P	SL_ME	Hrs	16			1,739		1,739	
1	03	04	05			Conduct Prelim Design Review (PDR) - LTU Vac Sys	31-Mar-06	5-Apr-06		P	SL_MDD	Hrs	8			516		516	
1	03	04	05			Develop Final Design	6-Apr-06	15-Jun-06		P	SL_ME	Hrs	90			9,780		9,780	
1	03	04	05			Develop Final Design	6-Apr-06	15-Jun-06		P	SL_MDD	Hrs	300			19,347		19,347	
1	03	04	05			Conduct Final Design Review (FDR) - LTU Vac Sys	16-Jun-06	21-Jun-06		P	SL_ME	Hrs	8			869		869	
1	03	04	05			Conduct Final Design Review (FDR) - LTU Vac Sys	16-Jun-06	21-Jun-06		P	SL_MDD	Hrs	8			516		516	
1	03	04	05			Develop Vacuum Post-Processing Plan	22-Jun-06	20-Jul-06		C	SL_ME	Hrs	100			10,867		10,867	
1	03	04	05			Prep Bid Pak - Vacuum Equipment	3-Oct-06	9-Oct-06		C	SL_ME	Hrs	40			4,460		4,460	
1	03	04	05			Prep Bid Pak - Vacuum Equipment	3-Oct-06	9-Oct-06		C	SL_MDD	Hrs	40			2,647		2,647	
1	03	04	05			Evaluate Vendor Proposals	24-Oct-06	25-Oct-06		C	SL_ME	Hrs	40			4,460		4,460	
1	03	04	05			Procure Vacuum Chamber Material	27-Oct-06	27-Oct-06		C	SL_MSEG	\$\$		5,600			6,440		6,440
1	03	04	05			Fab Vacuum Chamber	28-Nov-06	5-Apr-07		C	SL_MFMS	Hrs	320			33,882		33,882	
1	03	04	05			Prep for, Clean & Plate Vacuum Equipment	6-Apr-07	29-Jun-07		C	SL_MFPC	Hrs	240			40,572		40,572	
1	03	04	05			Vacuum Chamber Welding	4-May-07	13-Aug-07		C	SL_MFMS	Hrs	300			31,764		31,764	
1	03	04	05			Process Vacuum Chamber	4-Jun-07	11-Sep-07		C	SL_MFAT	Hrs	240			20,724		20,724	
1	03	04	05			Perform QC and Inspection	12-Sep-07	19-Sep-07		C	SL_MES	Hrs	240			22,867		22,867	
1	03	04	05			Prep for & Deliver to "Pre-Install Qual Test"	20-Sep-07	20-Sep-07		C	SL_MFAT	Hrs	240			20,724		20,724	
1	03	04	05			Perform Pre-Installation Qual Test	21-Sep-07	27-Sep-07		C	SL_MFAT	Hrs	120			10,362		10,362	
1	03	04	05			Procure Misc Materials - Vacuum Supports	3-Oct-06	30-Oct-06		C	SL_MFMS	Hrs	8			847		847	
1	03	04	05			Procure Materials for Vacuum Supports	3-Oct-06	30-Oct-06		C	SL_MTRL	\$\$		60,000			69,000		69,000
1	03	04	05			Procure Bellows	27-Oct-06	5-Apr-07		C	SA_MSEG	\$\$		14,250			16,388		16,388
1	03	04	05			Procure CF Flanges	27-Oct-06	5-Apr-07		C	SA_MSEG	\$\$		3,840			4,416		4,416
1	03	04	05			Procure CF Crosses	27-Oct-06	5-Apr-07		C	SA_MSEG	\$\$		3,520			4,048		4,048
1	03	04	05			Fab Vacuum Support	31-Oct-06	12-Mar-07		C	SL_MFMS	Hrs	320			33,882		33,882	
1	03	04	05			Procure Vat Valve	27-Oct-06	5-Apr-07		C	SA_MSEG	\$\$		60,720			69,828		69,828
1	03	04	05			Procure Pump Out Valve	27-Oct-06	5-Apr-07		C	SA_MSEG	\$\$		15,720			18,078		18,078
1	03	04	05			Procure Cold Cathode Gauge	27-Oct-06	5-Apr-07		C	SA_MSEG	\$\$		4,500			5,175		5,175
1	03	04	05			Procure Pirani Gauge	27-Oct-06	5-Apr-07		C	SA_MSEG	\$\$		1,344			1,546		1,546
1	03	04	05			Assemble LTU Vacuum Supports	12-Jan-07	7-May-07		C	SL_MFAT	Hrs	320			27,632		27,632	
1	03	04	05			Procure Gauge Pig Tail	27-Oct-06	5-Apr-07		C	SA_MSEG	\$\$		1,800			2,070		2,070
1	03	04	05			Procure Ion Pump	27-Oct-06	5-Apr-07		C	SA_MSEG	\$\$		45,480			52,302		52,302
1	03	04	05			Procure Ion Pump Pig Tail	27-Oct-06	5-Apr-07		C	SA_MSEG	\$\$		8,520			9,798		9,798

LCLS TPC Detailed Cost Estimate (FY05FY09)

5/5/2005

WBS Level						LCLA DCE March-2005 Description	Early Start	Early Finish	OBS	Fund Type	Res Code	Units	Budgeted Quantity		Fully Burdened and Escalated Cost				
Run Time: 4/22/05 8:43am													Hours	\$	Labor	M&S	Total (No Conting)		
1	2	3	4	5	6														
1	03	04	05			Procure Copper Gasket	27-Oct-06	5-Apr-07		C	SA_MSEG	\$\$			1,700			1,955	1,955
1	03	04	05			Procure CF Bolt Set	27-Oct-06	5-Apr-07		C	SA_MSEG	\$\$			4,750			5,463	5,463
1	03	04	06			Dumpline Vacuum System							2,832	29,982		273,317	34,481	307,798	
1	03	04	06			Define Dumpline Vac Sys Requirements	14-Oct-05	27-Oct-05		C	SL_ME	Hrs	24			2,608		2,608	
1	03	04	06			Create ICD & Update LCLS Database	28-Oct-05	31-Oct-05		C	SL_ME	Hrs	20			2,173		2,173	
1	03	04	06			Review & Accept Requirements, ICD & DB Entries	1-Nov-05	1-Nov-05		C	SL_ME	Hrs	8			869		869	
1	03	04	06			Develop Preliminary Vacuum System Design	2-Nov-05	30-Jan-06		C	SL_ME	Hrs	80			8,694		8,694	
1	03	04	06			Develop Preliminary Vacuum System Design	2-Nov-05	30-Jan-06		C	SL_MDD	Hrs	120			7,739		7,739	
1	03	04	06			Define Requirements LTU Vac Sys Supports	2-Nov-05	15-Nov-05		C	SL_ME	Hrs	24			2,608		2,608	
1	03	04	06			Develop Prelim Design LTU Vacuum Sys Supports	16-Nov-05	13-Feb-06		C	SL_ME	Hrs	80			8,694		8,694	
1	03	04	06			Develop Prelim Design LTU Vacuum Sys Supports	16-Nov-05	13-Feb-06		C	SL_MDD	Hrs	120			7,739		7,739	
1	03	04	06			Conduct Prelim Design Review (PDR) - D/L Vac Sys	31-Jan-06	1-Feb-06		C	SL_ME	Hrs	8			869		869	
1	03	04	06			Conduct Prelim Design Review (PDR) - D/L Vac Sys	31-Jan-06	1-Feb-06		C	SL_MDD	Hrs	8			516		516	
1	03	04	06			Develop Final Design	2-Feb-06	13-Apr-06		C	SL_ME	Hrs	100			10,867		10,867	
1	03	04	06			Develop Final Design	2-Feb-06	13-Apr-06		C	SL_MDD	Hrs	300			19,347		19,347	
1	03	04	06			Conduct Final Design Review (FDR) - D/L Vac Sys	14-Apr-06	17-Apr-06		C	SL_ME	Hrs	8			869		869	
1	03	04	06			Conduct Final Design Review (FDR) - D/L Vac Sys	14-Apr-06	17-Apr-06		C	SL_MDD	Hrs	8			516		516	
1	03	04	06			Develop Vacuum Post-Processing Plan	3-Oct-06	16-Oct-06		C	SL_ME	Hrs	40			4,460		4,460	
1	03	04	06			Prep Bid Pak - Dumpline Vacuum System	17-Oct-06	6-Nov-06		C	SL_ME	Hrs	40			4,460		4,460	
1	03	04	06			Prep Bid Pak - Dumpline Vacuum System	17-Oct-06	6-Nov-06		C	SL_MDD	Hrs	20			1,323		1,323	
1	03	04	06			Evaluate Vendor Proposals	30-Nov-06	4-Jan-07		C	SL_ME	Hrs	20			2,230		2,230	
1	03	04	06			Procure Bellows Modules	3-Oct-06	11-Jan-07		C	SL_MSEG	\$\$			3,800			4,370	4,370
1	03	04	06			Procure CF Flanges	3-Oct-06	11-Jan-07		C	SL_MSEG	\$\$			640			736	736
1	03	04	06			Procure CF Crosses	3-Oct-06	11-Jan-07		C	SL_MSEG	\$\$			3,520			4,048	4,048
1	03	04	06			Procure VAT Valve	3-Oct-06	11-Jan-07		C	SL_MSEG	\$\$			5,060			5,819	5,819
1	03	04	06			Procure Pump Out Valve	3-Oct-06	11-Jan-07		C	SL_MSEG	\$\$			655			753	753
1	03	04	06			Procure Cold Cathode Gauge	3-Oct-06	11-Jan-07		C	SL_MSEG	\$\$			375			431	431
1	03	04	06			Procure Pirani Gauge	3-Oct-06	11-Jan-07		C	SL_MSEG	\$\$			112			129	129
1	03	04	06			Procure Gauge Pig Tail	3-Oct-06	11-Jan-07		C	SL_MSEG	\$\$			150			173	173
1	03	04	06			Procure Ion Pump	3-Oct-06	11-Jan-07		C	SL_MSEG	\$\$			3,790			4,359	4,359
1	03	04	06			Fab Vacuum Chamber	12-Jan-07	9-Apr-07		C	SL_MFMS	Hrs	320			33,882		33,882	
1	03	04	06			Procure Ion Pump Pig Tail	3-Oct-06	11-Jan-07		C	SL_MSEG	\$\$			710			817	817
1	03	04	06			Procure CF Copper Gasket	3-Oct-06	11-Jan-07		C	SL_MSEG	\$\$			170			196	196
1	03	04	06			Procure CF Bolt Set	3-Oct-06	11-Jan-07		C	SL_MSEG	\$\$			475			546	546
1	03	04	06			Procure 304 Tubing	3-Oct-06	11-Jan-07		C	SL_MSEG	\$\$			525			604	604
1	03	04	06			Clean & Plate Vacuum Equipment	13-Mar-07	3-Jul-07		C	SL_MFPC	Hrs	160			27,048		27,048	
1	03	04	06			Vacuum Chamber Welding	6-Jun-07	29-Aug-07		C	SL_MFMS	Hrs	240			25,411		25,411	
1	03	04	06			Process Vacuum Chamber	5-Jul-07	27-Sep-07		C	SL_MFAT	Hrs	240			20,724		20,724	
1	03	04	06			Perform QC and Inspection	28-Sep-07	5-Oct-07		C	SL_ME	Hrs	24			2,734		2,734	
1	03	04	06			Prep for & Deliver to "Pre-Install Qual Test"	8-Oct-07	8-Oct-07		C	SL_MFAT	Hrs	80			7,087		7,087	
1	03	04	06			Perform Pre-Installation Qual Test	9-Oct-07	15-Oct-07		C	SL_MFAT	Hrs	80			7,087		7,087	
1	03	04	06			Prep Bid Pak - Vacuum Supports	3-Oct-06	23-Oct-06		C	SL_ME	Hrs	40			4,460		4,460	
1	03	04	06			Evaluate Vendor Proposals - UHV Components	21-Nov-06	13-Dec-06		C	SL_ME	Hrs	20			2,230		2,230	
1	03	04	06			Procure Misc Materials - Vacuum Supports	28-Feb-07	27-Mar-07		C	SL_MTRL	\$\$			10,000			11,500	11,500
1	03	04	06			Fab Vacuum Support	28-Mar-07	19-Jul-07		C	SL_MFMS	Hrs	200			21,176		21,176	
1	03	04	06			Assemble DL Vacuum Supports	25-Apr-07	16-Aug-07		C	SL_MFAT	Hrs	360			31,086		31,086	
1	03	04	06			Assemble DL Vacuum Supports	25-Apr-07	16-Aug-07		C	SL_MES	Hrs	40			3,811		3,811	
1	03	05				Linac Electron Diagnostics							15,044	710,100		1,326,470	800,152	2,126,622	
1	03	05	01			Wire Scanners (15)							1,428	194,500		119,829	217,840	337,669	
1	03	05	01			Review & Accept Requirements	11-Jan-05	11-Jan-05		P	SL_ME	Hrs	4			423		423	
1	03	05	01			Write ICD - Wire Scanner	12-Jan-05	18-Jan-05		P	SL_ME	Hrs	16			1,691		1,691	
1	03	05	01			Collect Area Specific Requirements	19-Jan-05	24-Jan-05		P	SL_ME	Hrs	8			846		846	
1	03	05	01			Collect Area Specific Requirements	19-Jan-05	24-Jan-05		P	SL_MDD	Hrs	16			1,004		1,004	
1	03	05	01			Evaluate Existing Design Documentation	25-Jan-05	1-Feb-05		P	SL_ME	Hrs	8			846		846	
1	03	05	01			Evaluate Existing Design Documentation	25-Jan-05	1-Feb-05		P	SL_MDD	Hrs	24			1,506		1,506	
1	03	05	01			Produce Common Layout	2-Feb-05	2-Mar-05		P	SL_MDD	Hrs	160			10,038		10,038	
1	03	05	01			Develop General Specifications / Analysis	3-Mar-05	8-Mar-05		P	SL_ME	Hrs	16			1,691		1,691	
1	03	05	01			Create / Remodel / Revise Dsn Documentation	9-Mar-05	29-Mar-05		P	SL_MDD	Hrs	80			5,019		5,019	
1	03	05	01			Make Simplified Models	30-Mar-05	31-Mar-05		P	SL_MDD	Hrs	4			251		251	
1	03	05	01			Release Final Model To Server	1-Apr-05	1-Apr-05		P	SL_MDD	Hrs	4			251		251	
1	03	05	01			Update Component Data Base	4-Apr-05	5-Apr-05		P	SL_ME	Hrs	4			423		423	
1	03	05	01			Write Component Traveler	6-Apr-05	15-Jun-05		P	SL_ME	Hrs	16			1,691		1,691	
1	03	05	01			Prepare for PDR - Wire Scanners	16-Jun-05	20-Jun-05		P	SL_ME	Hrs	8			846		846	
1	03	05	01			Conduct Wire Scanners PDR	21-Jun-05	21-Jun-05		P	SL_ME	Hrs	8			846		846	

LCLS TPC Detailed Cost Estimate (FY05FY09)

5/5/2005

WBS Level						LCLA DCE March-2005	Early Start	Early Finish	OBS	Fund Type	Res Code	Units	Budgeted Quantity		Fully Burdened and Escalated Cost			
Run Time: 4/22/05 8:43am													Description	Hours	\$	Labor	M&S	Total (No Conting)
1	2	3	4	5	6													
1	03	05	01			Generate Detailed Procurement Plan	22-Jun-05	22-Jun-05		P	SL_ME	Hrs	16			1,691		1,691
1	03	05	01			Establish Subordinate Work Orders	23-Jun-05	23-Jun-05		P	SL_ME	Hrs	8			846		846
1	03	05	01			Prepare for FDR - Wire Scanners	24-Jun-05	28-Jun-05		P	SL_ME	Hrs	8			846		846
1	03	05	01			Prepare for FDR - Wire Scanners	24-Jun-05	28-Jun-05		P	SL_MDD	Hrs	8			502		502
1	03	05	01			Prep Bid Pak - Wire Scanner	3-Oct-05	3-Oct-05		P	SL_ME	Hrs	2			217		217
1	03	05	01			Prep Bid Pak - Wire Scanner	3-Oct-05	3-Oct-05		P	SL_MDD	Hrs	8			516		516
1	03	05	01			Evaluate Vendor Proposals	1-Nov-05	7-Nov-05		C	SL_ME	Hrs	24			2,608		2,608
1	03	05	01			Vendor Fab 1st Lot	9-Nov-05	21-Mar-06		C	SA_MSEG	\$\$		75,000			84,000	84,000
1	03	05	01			Vendor Fab Remaining Lot	22-Mar-06	13-Jul-06		C	SA_MSEG	\$\$		75,000			84,000	84,000
1	03	05	01			Procure Misc Materials - Wire Scanners	3-Oct-05	7-Apr-06		C	SL_MSEG	\$\$		6,500			7,280	7,280
1	03	05	01			Component Fab & Assembly - Wire Scanners	12-Jan-06	5-May-06		C	SL_MFPC	Hrs	24			3,954		3,954
1	03	05	01			Component Fab & Assembly - Wire Scanners	12-Jan-06	5-May-06		C	SL_MFMS	Hrs	40			4,128		4,128
1	03	05	01			Component Fab & Assembly - Wire Scanners	12-Jan-06	5-May-06		C	SL_MFAT	Hrs	420			35,347		35,347
1	03	05	01			Perform QC / Metrology	14-Jul-06	19-Jul-06		C	SL_MES	Hrs	60			5,572		5,572
1	03	05	01			Perform Functional Testing - Wire Scanners	20-Jul-06	21-Jul-06		C	SL_CCA	Hrs	60			4,042		4,042
1	03	05	01			Collect Component Performance Data	24-Jul-06	28-Jul-06		C	SL_ME	Hrs	40			4,347		4,347
1	03	05	01			Load Component Data Base	24-Jul-06	28-Jul-06		C	SL_ME	Hrs	16			1,739		1,739
1	03	05	01			Post Process & Test	24-Jul-06	28-Jul-06		C	SL_MFAT	Hrs	100			8,416		8,416
1	03	05	01			Define Diagnostics Support Requirements	9-Mar-05	9-Mar-05		P	SL_ME	Hrs	4			423		423
1	03	05	01			Create ICD & Update LCLS Database	10-Mar-05	10-Mar-05		P	SL_ME	Hrs	4			423		423
1	03	05	01			Develop Preliminary Design - Diagnostic Supports	11-Mar-05	17-Mar-05		P	SL_ME	Hrs	8			846		846
1	03	05	01			Develop Preliminary Design - Diagnostic Supports	11-Mar-05	17-Mar-05		P	SL_MDD	Hrs	40			2,510		2,510
1	03	05	01			Conduct Preliminary Design Review (PDR)	18-Mar-05	18-Mar-05		P	SL_ME	Hrs	2			211		211
1	03	05	01			Conduct Preliminary Design Review (PDR)	18-Mar-05	18-Mar-05		P	SL_MDD	Hrs	2			125		125
1	03	05	01			Develop Final Design - Diagnostics Supports	21-Mar-05	25-Mar-05		P	SL_ME	Hrs	8			846		846
1	03	05	01			Develop Final Design - Diagnostics Supports	21-Mar-05	25-Mar-05		P	SL_MDD	Hrs	40			2,510		2,510
1	03	05	01			Conduct Final Design Review (FDR)	28-Mar-05	28-Mar-05		P	SL_ME	Hrs	2			211		211
1	03	05	01			Conduct Final Design Review (FDR)	28-Mar-05	28-Mar-05		P	SL_MDD	Hrs	2			125		125
1	03	05	01			Prep Bid Pak - Diagnostics Supports	29-Mar-05	29-Mar-05		P	SL_ME	Hrs	2			211		211
1	03	05	01			Prep Bid Pak - Diagnostics Supports	29-Mar-05	29-Mar-05		P	SL_MDD	Hrs	4			251		251
1	03	05	01			Evaluate Vendor Proposals - Supports	27-Apr-05	28-Apr-05		P	SL_ME	Hrs	8			846		846
1	03	05	01			Vendor Fab 1st Lot - Supports	4-Oct-05	10-Feb-06		C	SA_MSEG	\$\$		16,000			17,920	17,920
1	03	05	01			Vendor Fab Remaining Lot - Supports	13-Feb-06	6-Jun-06		C	SA_MSEG	\$\$		16,000			17,920	17,920
1	03	05	01			Procure Misc Materials - Diagnostics Supports	3-Oct-05	29-Nov-05		C	SL_MSEG	\$\$		6,000			6,720	6,720
1	03	05	01			Perform QC & Inspection - Diagnostic Supports	7-Jun-06	12-Jun-06		C	SL_MES	Hrs	24			2,229		2,229
1	03	05	01			Assemble Supports	13-Jun-06	19-Jun-06		C	SL_MFAT	Hrs	60			5,050		5,050
1	03	05	01			Perform Pre-Installation Qualification - Support	20-Jun-06	21-Jun-06		C	SL_ME	Hrs	8			869		869
1	03	05	02			Beam Position Monitors							2,543	46,400	228,646	52,268	280,914	
1	03	05	02	01		BPM's - Linac Standard (4ea)							516	5,000	42,721	5,600	48,321	
1	03	05	02	01		Receive BPM Requirements	2-May-05	6-May-05		P	SL_ME	Hrs	1			106		106
1	03	05	02	01		Review & Accept Requirements	9-May-05	13-May-05		P	SL_ME	Hrs	1			106		106
1	03	05	02	01		Write ICD - Beam Path Monitor	16-May-05	20-May-05		P	SL_ME	Hrs	8			846		846
1	03	05	02	01		Collect Area Specific Requirements	23-May-05	27-May-05		P	SL_ME	Hrs	4			423		423
1	03	05	02	01		Collect Area Specific Requirements	23-May-05	27-May-05		P	SL_MDD	Hrs	4			251		251
1	03	05	02	01		Evaluate Existing Design Documentation	31-May-05	6-Jun-05		P	SL_ME	Hrs	4			423		423
1	03	05	02	01		Evaluate Existing Design Documentation	31-May-05	6-Jun-05		P	SL_MDD	Hrs	24			1,506		1,506
1	03	05	02	01		Produce Common Layout	7-Jun-05	13-Jun-05		P	SL_MDD	Hrs	16			1,004		1,004
1	03	05	02	01		Develop General Specifications / Analysis	14-Jun-05	16-Jun-05		P	SL_ME	Hrs	8			846		846
1	03	05	02	01		Create / Remodel / Revise Dsn Documentation	17-Jun-05	29-Jul-05		P	SL_MDD	Hrs	160			10,038		10,038
1	03	05	02	01		Make Simplified Models	1-Aug-05	3-Aug-05		P	SL_MDD	Hrs	8			502		502
1	03	05	02	01		Release Final Model To Server	4-Aug-05	10-Aug-05		P	SL_MDD	Hrs	4			251		251
1	03	05	02	01		Update Component Data Base	11-Aug-05	12-Aug-05		P	SL_ME	Hrs	4			423		423
1	03	05	02	01		Write Component Traveler	15-Aug-05	19-Aug-05		P	SL_ME	Hrs	4			423		423
1	03	05	02	01		Prepare for PDR - BPMs	22-Aug-05	24-Aug-05		P	SL_ME	Hrs	2			211		211
1	03	05	02	01		Conduct Prelim Design Review (PDR) - BPMs	25-Aug-05	25-Aug-05		P	SL_ME	Hrs	2			211		211
1	03	05	02	01		Generate Detailed Procurement Plan	26-Aug-05	26-Aug-05		P	SL_ME	Hrs	4			423		423
1	03	05	02	01		Establish Subordinate Work Orders	29-Aug-05	29-Aug-05		P	SL_ME	Hrs	4			423		423
1	03	05	02	01		Prepare for FDR - BPMs	30-Aug-05	1-Sep-05		P	SL_ME	Hrs	2			211		211
1	03	05	02	01		Conduct Final Design Review (FDR) - BPMs	2-Sep-05	2-Sep-05		P	SL_ME	Hrs	2			211		211
1	03	05	02	01		Procure Component Material - BPMs	3-Oct-05	10-Mar-06		C	SL_MSEG	\$\$		5,000			5,600	5,600
1	03	05	02	01		Component Fab & Assembly - BPMs	30-Nov-05	5-Jun-06		C	SL_MFPC	Hrs	8			1,318		1,318
1	03	05	02	01		Component Fab & Assembly - BPMs	30-Nov-05	5-Jun-06		C	SL_MFMS	Hrs	120			12,384		12,384
1	03	05	02	01		Component Fab & Assembly - BPMs	30-Nov-05	5-Jun-06		C	SL_MFAT	Hrs	80			6,733		6,733
1	03	05	02	01		Perform QC / Metrology	6-Jun-06	7-Jun-06		C	SL_MES	Hrs	4			371		371

LCLS TPC Detailed Cost Estimate (FY05FY09)

5/5/2005

WBS Level						LCLA DCE March-2005 Description	Early Start	Early Finish	OBS	Fund Type	Res Code	Units	Budgeted Quantity		Fully Burdened and Escalated Cost			
Run Time: 4/22/05 8:43am													Hours	\$	Labor	M&S	Total (No Conting)	
1	2	3	4	5	6													
1	03	05	02	01		Perform Functional Testing - BPMs	8-Jun-06	9-Jun-06		C	SL_CCA	Hrs	16			1,078		1,078
1	03	05	02	01		Collect Component Performance Data	12-Jun-06	16-Jun-06		C	SL_ME	Hrs	4			435		435
1	03	05	02	01		Load Component Data Base	12-Jun-06	16-Jun-06		C	SL_ME	Hrs	2			217		217
1	03	05	02	01		Post Process & Test	12-Jun-06	16-Jun-06		C	SL_MFAT	Hrs	16			1,347		1,347
1	03	05	02	02		BPMs - RF (8ea)							696	26,400	57,284	29,568	86,852	
1	03	05	02	02		Receive RF BPM Requirements	3-Oct-05	7-Oct-05		P	SL_ME	Hrs	2			217		217
1	03	05	02	02		Review & Accept Requirements	10-Oct-05	14-Oct-05		P	SL_ME	Hrs	2			217		217
1	03	05	02	02		Write ICD - Beam Path Monitor	17-Oct-05	21-Oct-05		C	SL_ME	Hrs	8			869		869
1	03	05	02	02		Collect Area Specific Requirements	24-Oct-05	28-Oct-05		P	SL_ME	Hrs	4			435		435
1	03	05	02	02		Collect Area Specific Requirements	24-Oct-05	28-Oct-05		P	SL_MDD	Hrs	4			258		258
1	03	05	02	02		Evaluate Existing Design Documentation	31-Oct-05	4-Nov-05		C	SL_ME	Hrs	4			435		435
1	03	05	02	02		Evaluate Existing Design Documentation	31-Oct-05	4-Nov-05		C	SL_MDD	Hrs	16			1,032		1,032
1	03	05	02	02		Produce Common Layout	7-Nov-05	11-Nov-05		P	SL_MDD	Hrs	24			1,548		1,548
1	03	05	02	02		Develop General Specifications / Analysis	14-Nov-05	16-Nov-05		P	SL_ME	Hrs	8			869		869
1	03	05	02	02		Create / Remodel / Revise Dsn Documentation	17-Nov-05	18-Jan-06		P	SL_MDD	Hrs	160			10,318		10,318
1	03	05	02	02		Make Simplified Models	19-Jan-06	23-Jan-06		P	SL_MDD	Hrs	4			258		258
1	03	05	02	02		Release Final Model To Server	24-Jan-06	30-Jan-06		P	SL_MDD	Hrs	4			258		258
1	03	05	02	02		Update Component Data Base	31-Jan-06	1-Feb-06		P	SL_ME	Hrs	2			217		217
1	03	05	02	02		Write Component Traveler	2-Feb-06	8-Feb-06		C	SL_ME	Hrs	8			869		869
1	03	05	02	02		Prepare for PDR - RF BPMs	9-Feb-06	13-Feb-06		P	SL_ME	Hrs	2			217		217
1	03	05	02	02		Conduct RF BPMs PDR	14-Feb-06	14-Feb-06		P	SL_ME	Hrs	2			217		217
1	03	05	02	02		Generate Detailed Procurement Plan	15-Feb-06	15-Feb-06		C	SL_ME	Hrs	4			435		435
1	03	05	02	02		Establish Subordinate Work Orders	16-Feb-06	16-Feb-06		C	SL_ME	Hrs	4			435		435
1	03	05	02	02		Prepare for FDR - RF BPMs	17-Feb-06	22-Feb-06		C	SL_ME	Hrs	2			217		217
1	03	05	02	02		Conduct RF BPMs FDR	23-Feb-06	23-Feb-06		C	SL_ME	Hrs	2			217		217
1	03	05	02	02		Procure Component Material - RF BPMs	10-Apr-06	3-Jul-06		C	SL_MSEG	\$\$		20,000			22,400	22,400
1	03	05	02	02		Component Fab & Assembly - RF BPMs	6-Jun-06	27-Sep-06		C	SL_MFPC	Hrs	24			3,954		3,954
1	03	05	02	02		Component Fab & Assembly - RF BPMs	6-Jun-06	27-Sep-06		C	SL_MFAT	Hrs	200			16,832		16,832
1	03	05	02	02		Perform QC / Metrology	28-Sep-06	3-Oct-06		C	SL_MES	Hrs	8			753		753
1	03	05	02	02		Perform Functional Testing - RF BPMs	4-Oct-06	5-Oct-06		C	SL_CCA	Hrs	32			2,212		2,212
1	03	05	02	02		Collect Component Performance Data	6-Oct-06	12-Oct-06		C	SL_ME	Hrs	4			446		446
1	03	05	02	02		Load Component Data Base	6-Oct-06	12-Oct-06		C	SL_ME	Hrs	2			223		223
1	03	05	02	02		Post Process & Test	6-Oct-06	12-Oct-06		C	SL_MFAT	Hrs	32			2,763		2,763
1	03	05	02	02		Define Diagnostics Support Requirements	24-Feb-06	1-Mar-06		C	SL_ME	Hrs	4			435		435
1	03	05	02	02		Create ICD & Update LCLS Database	2-Mar-06	7-Mar-06		C	SL_ME	Hrs	4			435		435
1	03	05	02	02		Develop Preliminary Design - Diagnostic Supports	8-Mar-06	21-Mar-06		C	SL_ME	Hrs	8			869		869
1	03	05	02	02		Develop Preliminary Design - Diagnostic Supports	8-Mar-06	21-Mar-06		C	SL_MDD	Hrs	16			1,032		1,032
1	03	05	02	02		Conduct Preliminary Design Review (PDR)	22-Mar-06	23-Mar-06		C	SL_ME	Hrs	2			217		217
1	03	05	02	02		Conduct Preliminary Design Review (PDR)	22-Mar-06	23-Mar-06		C	SL_MDD	Hrs	2			129		129
1	03	05	02	02		Develop Final Design - Diagnostics Supports	24-Mar-06	6-Apr-06		C	SL_ME	Hrs	8			869		869
1	03	05	02	02		Develop Final Design - Diagnostics Supports	24-Mar-06	6-Apr-06		C	SL_MDD	Hrs	40			2,580		2,580
1	03	05	02	02		Conduct Final Design Review (FDR)	7-Apr-06	10-Apr-06		C	SL_ME	Hrs	2			217		217
1	03	05	02	02		Conduct Final Design Review (FDR)	7-Apr-06	10-Apr-06		C	SL_MDD	Hrs	2			129		129
1	03	05	02	02		Prep Bid Pak - Diagnostics Supports	11-Apr-06	11-Apr-06		C	SL_ME	Hrs	2			217		217
1	03	05	02	02		Prep Bid Pak - Diagnostics Supports	11-Apr-06	11-Apr-06		C	SL_MDD	Hrs	4			258		258
1	03	05	02	02		Evaluate Vendor Proposals - Supports	10-May-06	15-May-06		C	SL_ME	Hrs	8			869		869
1	03	05	02	02		Vendor Fab 1st Lot - Supports	17-May-06	14-Jun-06		C	SA_MSEG	\$\$		6,000			6,720	6,720
1	03	05	02	02		Procure Misc Materials - Diagnostics Supports	11-Apr-06	8-May-06		C	SL_MSEG	\$\$		400			448	448
1	03	05	02	02		Perform QC & Inspection - Diagnostic Supports	15-Jun-06	16-Jun-06		C	SL_MES	Hrs	8			743		743
1	03	05	02	02		Assemble Supports	19-Jun-06	22-Jun-06		C	SL_MFAT	Hrs	16			1,347		1,347
1	03	05	02	02		Perform Pre-Installation Qualification - Support	23-Jun-06	23-Jun-06		C	SL_ME	Hrs	2			217		217
1	03	05	02	03		BPMs - FFTB (37ea)							797	10,000	76,631	11,500	88,131	
1	03	05	02	03		Receive BPM Requirements	3-Oct-06	3-Oct-06		C	SL_ME	Hrs	1			111		111
1	03	05	02	03		Review & Accept Requirements	4-Oct-06	5-Oct-06		C	SL_ME	Hrs	4			446		446
1	03	05	02	03		Write ICD - Beam Path Monitor	6-Oct-06	9-Oct-06		C	SL_ME	Hrs	8			892		892
1	03	05	02	03		Collect Area Specific Requirements	10-Oct-06	11-Oct-06		C	SL_ME	Hrs	4			446		446
1	03	05	02	03		Collect Area Specific Requirements	10-Oct-06	11-Oct-06		C	SL_MDD	Hrs	4			265		265
1	03	05	02	03		Evaluate Existing Design Documentation	12-Oct-06	17-Oct-06		C	SL_ME	Hrs	4			446		446
1	03	05	02	03		Evaluate Existing Design Documentation	12-Oct-06	17-Oct-06		C	SL_MDD	Hrs	24			1,588		1,588
1	03	05	02	03		Produce Common Layout	18-Oct-06	20-Oct-06		C	SL_MDD	Hrs	24			1,588		1,588
1	03	05	02	03		Develop General Specifications / Analysis	23-Oct-06	24-Oct-06		C	SL_ME	Hrs	8			892		892
1	03	05	02	03		Create / Remodel / Revise Dsn Documentation	25-Oct-06	21-Nov-06		C	SL_MDD	Hrs	120			7,940		7,940
1	03	05	02	03		Make Simplified Models	22-Nov-06	27-Nov-06		C	SL_MDD	Hrs	8			529		529
1	03	05	02	03		Release Final Model To Server	28-Nov-06	28-Nov-06		C	SL_MDD	Hrs	4			265		265

LCLS TPC Detailed Cost Estimate (FY05FY09)

5/5/2005

WBS Level						LCLA DCE March-2005 Description	Early Start	Early Finish	OBS	Fund Type	Res Code	Units	Budgeted Quantity		Fully Burdened and Escalated Cost					
Run Time: 4/22/05 8:43am													Hours	\$\$	Labor	M&S	Total (No Conting)			
1	2	3	4	5	6															
1	03	05	02	03		Update Component Data Base	29-Nov-06	29-Nov-06		C	SL_ME	Hrs	4				446		446	
1	03	05	02	03		Write Component Traveler	30-Nov-06	5-Dec-06		C	SL_ME	Hrs	16				1,784		1,784	
1	03	05	02	03		Prepare for PDR - BPMs	6-Dec-06	6-Dec-06		C	SL_ME	Hrs	2				223		223	
1	03	05	02	03		Prepare for PDR - BPMs	6-Dec-06	6-Dec-06		C	SL_MDD	Hrs	2				132		132	
1	03	05	02	03		Conduct Prelim Design Review (PDR) - FFTB BPMs	7-Dec-06	7-Dec-06		C	SL_ME	Hrs	2				223		223	
1	03	05	02	03		Conduct Prelim Design Review (PDR) - FFTB BPMs	7-Dec-06	7-Dec-06		C	SL_MDD	Hrs	2				132		132	
1	03	05	02	03		Generate Detailed Procurement Plan	8-Dec-06	8-Dec-06		C	SL_ME	Hrs	4				446		446	
1	03	05	02	03		Establish Subordinate Work Orders	11-Dec-06	11-Dec-06		C	SL_ME	Hrs	4				446		446	
1	03	05	02	03		Prepare for FDR - BPMs	12-Dec-06	14-Dec-06		C	SL_ME	Hrs	2				223		223	
1	03	05	02	03		Conduct Final Design Review (FDR) - FFTB BPMs	15-Dec-06	15-Dec-06		C	SL_ME	Hrs	2				223		223	
1	03	05	02	03		Procure Component Material - BPMs	2-Jan-07	28-Feb-07		C	SL_MSEG	\$\$		10,000				11,500		11,500
1	03	05	02	03		Component Fab & Assembly - BPMs	1-Mar-07	25-Apr-07		C	SL_MFPC	Hrs	40				6,762		6,762	
1	03	05	02	03		Component Fab & Assembly - BPMs	1-Mar-07	25-Apr-07		C	SL_MFMS	Hrs	320				33,882		33,882	
1	03	05	02	03		Component Fab & Assembly - BPMs	1-Mar-07	25-Apr-07		C	SL_MFAT	Hrs	80				6,908		6,908	
1	03	05	02	03		Perform QC / Metrology	26-Apr-07	2-May-07		C	SL_MES	Hrs	32				3,049		3,049	
1	03	05	02	03		Perform Functional Testing - BPMs	3-May-07	8-May-07		C	SL_CCA	Hrs	16				1,106		1,106	
1	03	05	02	03		Collect Component Performance Data	9-May-07	10-May-07		C	SL_ME	Hrs	8				892		892	
1	03	05	02	03		Load Component Data Base	9-May-07	10-May-07		C	SL_ME	Hrs	8				892		892	
1	03	05	02	03		Post Process & Test	9-May-07	22-May-07		C	SL_MFAT	Hrs	40				3,454		3,454	
1	03	05	02	04		BPMs - BC1 & BC2 (2ea)							534	5,000		52,010	5,600	57,610		
1	03	05	02	04		Write ICD - Beam Position Monitor	1-Oct-04	20-Oct-04		P	SL_ME	Hrs	2				211		211	
1	03	05	02	04		Develop General Specifications / Analysis	1-Oct-04	18-Oct-04		P	SL_ME	Hrs	16				1,691		1,691	
1	03	05	02	04		Create / Remodel / Revise Dsn Documentation	1-Oct-04	18-Oct-04		P	SL_MDD	Hrs	16				1,004		1,004	
1	03	05	02	04		Make Simplified Models	1-Oct-04	18-Oct-04		P	SL_MDD	Hrs	4				251		251	
1	03	05	02	04		Release Final Model To Server	19-Oct-04	1-Nov-04		P	SL_MDD	Hrs	4				251		251	
1	03	05	02	04		Update Component Data Base	19-Oct-04	1-Nov-04		P	SL_ME	Hrs	4				423		423	
1	03	05	02	04		Write Component Traveler	2-Nov-04	15-Nov-04		P	SL_ME	Hrs	8				846		846	
1	03	05	02	04		Prepare for PDR - BPMs	1-Oct-04	14-Oct-04		P	SL_ME	Hrs	2				211		211	
1	03	05	02	04		Prepare for PDR - BPMs	1-Oct-04	14-Oct-04		P	SL_MDD	Hrs	2				125		125	
1	03	05	02	04		Conduct BPMs PDR	15-Oct-04	21-Oct-04		P	SL_ME	Hrs	2				211		211	
1	03	05	02	04		Conduct BPMs PDR	15-Oct-04	21-Oct-04		P	SL_MDD	Hrs	2				125		125	
1	03	05	02	04		Generate Detailed Procurement Plan	22-Oct-04	4-Nov-04		P	SL_ME	Hrs	4				423		423	
1	03	05	02	04		Establish Subordinate Work Orders	5-Nov-04	5-Nov-04		P	SL_ME	Hrs	4				423		423	
1	03	05	02	04		Prepare for FDR - BPMs	8-Nov-04	8-Nov-04		P	SL_ME	Hrs	2				211		211	
1	03	05	02	04		Prepare for FDR - BPMs	8-Nov-04	8-Nov-04		P	SL_MDD	Hrs	2				125		125	
1	03	05	02	04		Conduct BPMs FDR	16-Nov-04	16-Nov-04		P	SL_ME	Hrs	2				211		211	
1	03	05	02	04		Conduct BPMs FDR	16-Nov-04	16-Nov-04		P	SL_MDD	Hrs	2				125		125	
1	03	05	02	04		Procure Component Material - BPMs	3-Oct-05	29-Nov-05		C	SL_MSEG	\$\$		5,000				5,600		5,600
1	03	05	02	04		Component Fab & Assembly - BPMs	30-Nov-05	5-Jun-06		C	SL_MFPC	Hrs	24				3,954		3,954	
1	03	05	02	04		Component Fab & Assembly - BPMs	30-Nov-05	5-Jun-06		C	SL_MFMS	Hrs	240				24,768		24,768	
1	03	05	02	04		Component Fab & Assembly - BPMs	30-Nov-05	5-Jun-06		C	SL_MFAT	Hrs	120				10,099		10,099	
1	03	05	02	04		Perform QC / Metrology	6-Jun-06	9-Jun-06		C	SL_MES	Hrs	16				1,486		1,486	
1	03	05	02	04		Perform Functional Testing - BPMs	12-Jun-06	15-Jun-06		C	SL_CCA	Hrs	16				1,078		1,078	
1	03	05	02	04		Collect Component Performance Data	16-Jun-06	19-Jun-06		C	SL_ME	Hrs	8				869		869	
1	03	05	02	04		Load Component Data Base	20-Jun-06	21-Jun-06		C	SL_ME	Hrs	8				869		869	
1	03	05	02	04		Post Process & Test	22-Jun-06	27-Jun-06		C	SL_MFAT	Hrs	24				2,020		2,020	
1	03	05	03			Toroids (9ea) Beam Charge							1,030	10,800		93,883	12,096	105,979		
1	03	05	03			Receive Toroid Requirements	1-Apr-05	7-Apr-05		P	SL_ME	Hrs	2				211		211	
1	03	05	03			Review & Accept Requirements	8-Apr-05	14-Apr-05		P	SL_ME	Hrs	2				211		211	
1	03	05	03			Write ICD - Toroid	15-Apr-05	21-Apr-05		P	SL_ME	Hrs	8				846		846	
1	03	05	03			Collect Area Specific Requirements	22-Apr-05	12-May-05		P	SL_ME	Hrs	8				846		846	
1	03	05	03			Collect Area Specific Requirements	22-Apr-05	12-May-05		P	SL_MDD	Hrs	8				502		502	
1	03	05	03			Evaluate Existing Design Documentation	13-May-05	19-May-05		P	SL_ME	Hrs	8				846		846	
1	03	05	03			Evaluate Existing Design Documentation	13-May-05	19-May-05		P	SL_MDD	Hrs	24				1,506		1,506	
1	03	05	03			Produce Common Layout	20-May-05	26-May-05		P	SL_MDD	Hrs	40				2,510		2,510	
1	03	05	03			Develop General Specifications / Analysis	27-May-05	1-Jun-05		P	SL_ME	Hrs	8				846		846	
1	03	05	03			Create / Remodel / Revise Dsn Documentation	2-Jun-05	14-Jul-05		P	SL_MDD	Hrs	80				5,019		5,019	
1	03	05	03			Make Simplified Models	15-Jul-05	19-Jul-05		P	SL_MDD	Hrs	24				1,506		1,506	
1	03	05	03			Release Final Model To Server	20-Jul-05	2-Aug-05		P	SL_MDD	Hrs	8				502		502	
1	03	05	03			Update Component Data Base	3-Aug-05	4-Aug-05		P	SL_ME	Hrs	4				423		423	
1	03	05	03			Write Component Traveler	5-Aug-05	16-Sep-05		P	SL_ME	Hrs	24				2,537		2,537	
1	03	05	03			Prepare for PDR - Toroids	19-Sep-05	21-Sep-05		P	SL_ME	Hrs	4				423		423	
1	03	05	03			Conduct Toroids PDR	22-Sep-05	22-Sep-05		P	SL_ME	Hrs	4				423		423	
1	03	05	03			Generate Detailed Procurement Plan	23-Sep-05	23-Sep-05		L	SL_ME	Hrs	8				846		846	

LCLS TPC Detailed Cost Estimate (FY05FY09)

5/5/2005

WBS Level						LCLA DCE March-2005 Description	Early Start	Early Finish	OBS	Fund Type	Res Code	Units	Budgeted Quantity		Fully Burdened and Escalated Cost			
Run Time: 4/22/05 8:43am													Hours	\$\$	Labor	M&S	Total (No Conting)	
1	2	3	4	5	6													
1	03	05	03			Establish Subordinate Work Orders	26-Sep-05	26-Sep-05		L	SL_ME	Hrs	4			423		423
1	03	05	03			Prepare for FDR - Toroids	27-Sep-05	29-Sep-05		P	SL_ME	Hrs	4			423		423
1	03	05	03			Conduct Toroids FDR	30-Sep-05	30-Sep-05		P	SL_ME	Hrs	4			423		423
1	03	05	03			Procure Component Material - Toroids	3-Oct-05	11-Jan-06		C	SL_MSEG	\$\$		6,750			7,560	7,560
1	03	05	03			Component Fab & Assembly - Toroids	3-Oct-05	9-Feb-06		C	SL_MFPC	Hrs	54			8,897		8,897
1	03	05	03			Component Fab & Assembly - Toroids	3-Oct-05	9-Feb-06		C	SL_MFMS	Hrs	288			29,722		29,722
1	03	05	03			Component Fab & Assembly - Toroids	3-Oct-05	9-Feb-06		C	SL_MFAT	Hrs	160			13,466		13,466
1	03	05	03			Perform Functional Testing - Toroids	10-Feb-06	13-Feb-06		C	SL_CCA	Hrs	36			2,425		2,425
1	03	05	03			Collect Component Performance Data	14-Feb-06	21-Feb-06		C	SL_ME	Hrs	8			869		869
1	03	05	03			Load Component Data Base	14-Feb-06	21-Feb-06		C	SL_ME	Hrs	4			435		435
1	03	05	03			Post Process & Test	14-Feb-06	21-Feb-06		C	SL_MFAT	Hrs	54			4,545		4,545
1	03	05	03			Define Diagnostics Support Requirements	15-Jul-05	20-Jul-05		P	SL_ME	Hrs	4			423		423
1	03	05	03			Create ICD & Update LCLS Database	21-Jul-05	26-Jul-05		P	SL_ME	Hrs	4			423		423
1	03	05	03			Develop Preliminary Design - Diagnostic Supports	27-Jul-05	9-Aug-05		P	SL_ME	Hrs	8			846		846
1	03	05	03			Develop Preliminary Design - Diagnostic Supports	27-Jul-05	9-Aug-05		P	SL_MDD	Hrs	16			1,004		1,004
1	03	05	03			Conduct Preliminary Design Review (PDR)	10-Aug-05	11-Aug-05		P	SL_ME	Hrs	2			211		211
1	03	05	03			Conduct Preliminary Design Review (PDR)	10-Aug-05	11-Aug-05		P	SL_MDD	Hrs	2			125		125
1	03	05	03			Develop Final Design - Diagnostics Supports	12-Aug-05	25-Aug-05		P	SL_ME	Hrs	8			846		846
1	03	05	03			Develop Final Design - Diagnostics Supports	12-Aug-05	25-Aug-05		P	SL_MDD	Hrs	40			2,510		2,510
1	03	05	03			Conduct Final Design Review (FDR)	26-Aug-05	29-Aug-05		P	SL_ME	Hrs	2			211		211
1	03	05	03			Conduct Final Design Review (FDR)	26-Aug-05	29-Aug-05		P	SL_MDD	Hrs	2			125		125
1	03	05	03			Prep Bid Pak - Diagnostics Supports	30-Aug-05	30-Aug-05		P	SL_ME	Hrs	2			211		211
1	03	05	03			Prep Bid Pak - Diagnostics Supports	30-Aug-05	30-Aug-05		P	SL_MDD	Hrs	4			251		251
1	03	05	03			Evaluate Vendor Proposals - Supports	29-Sep-05	4-Oct-05		L	SL_ME	Hrs	8			858		858
1	03	05	03			Vendor Fab 1st Lot - Supports	6-Oct-05	2-Nov-05		C	SA_MSEG	\$\$		3,600			4,032	4,032
1	03	05	03			Procure Misc Materials - Diagnostics Supports	3-Oct-05	28-Oct-05		C	SL_MSEG	\$\$		450			504	504
1	03	05	03			Perform QC & Inspection - Diagnostic Supports	3-Nov-05	4-Nov-05		C	SL_MES	Hrs	8			743		743
1	03	05	03			Assemble Supports	7-Nov-05	18-Nov-05		C	SL_MFAT	Hrs	36			3,030		3,030
1	03	05	03			Perform Pre-Installation Qualification - Support	21-Nov-05	28-Nov-05		C	SL_ME	Hrs	4			435		435
1	03	05	04			Stoppers TU Dump (2ea)							1,161	8,200	103,070	9,184	112,254	
1	03	05	04			Receive Stopper Requirements	3-Oct-05	3-Oct-05		P	SL_ME	Hrs	1			109		109
1	03	05	04			Review & Accept Requirements	4-Oct-05	5-Oct-05		P	SL_ME	Hrs	4			435		435
1	03	05	04			Write ICD - Stopper	6-Oct-05	7-Oct-05		L	SL_ME	Hrs	8			869		869
1	03	05	04			Collect Area Specific Requirements	10-Oct-05	13-Oct-05		P	SL_ME	Hrs	16			1,739		1,739
1	03	05	04			Collect Area Specific Requirements	10-Oct-05	13-Oct-05		P	SL_MDD	Hrs	16			1,032		1,032
1	03	05	04			Evaluate Existing Design Documentation	14-Oct-05	25-Oct-05		L	SL_ME	Hrs	8			869		869
1	03	05	04			Evaluate Existing Design Documentation	14-Oct-05	25-Oct-05		L	SL_MDD	Hrs	60			3,869		3,869
1	03	05	04			Produce Common Layout	26-Oct-05	8-Nov-05		P	SL_MDD	Hrs	60			3,869		3,869
1	03	05	04			Develop General Specifications / Analysis	9-Nov-05	10-Nov-05		P	SL_ME	Hrs	8			869		869
1	03	05	04			Create / Remodel / Revise Dsn Documentation	11-Nov-05	12-Dec-05		P	SL_MDD	Hrs	160			10,318		10,318
1	03	05	04			Make Simplified Models	13-Dec-05	14-Dec-05		P	SL_MDD	Hrs	8			516		516
1	03	05	04			Release Final Model To Server	15-Dec-05	15-Dec-05		P	SL_MDD	Hrs	4			258		258
1	03	05	04			Update Component Data Base	16-Dec-05	16-Dec-05		P	SL_ME	Hrs	2			217		217
1	03	05	04			Write Component Traveler	3-Jan-06	4-Jan-06		C	SL_ME	Hrs	8			869		869
1	03	05	04			Prepare for PDR - Stoppers	5-Jan-06	5-Jan-06		P	SL_ME	Hrs	2			217		217
1	03	05	04			Prepare for PDR - Stoppers	5-Jan-06	5-Jan-06		P	SL_MDD	Hrs	2			129		129
1	03	05	04			Generate Detailed Procurement Plan	6-Jan-06	6-Jan-06		C	SL_ME	Hrs	8			869		869
1	03	05	04			Establish Subordinate Work Orders	9-Jan-06	9-Jan-06		C	SL_ME	Hrs	4			435		435
1	03	05	04			Prepare for FDR - Stoppers	10-Jan-06	12-Jan-06		P	SL_ME	Hrs	4			435		435
1	03	05	04			Conduct Stoppers FDR	13-Jan-06	13-Jan-06		P	SL_ME	Hrs	4			435		435
1	03	05	04			Procure Component Material - Stoppers	17-Jan-06	7-Jun-06		C	SL_MSEG	\$\$		6,000			6,720	6,720
1	03	05	04			Component Fab & Assembly - Stoppers	14-Feb-06	6-Jul-06		C	SL_MFPC	Hrs	40			6,590		6,590
1	03	05	04			Component Fab & Assembly - Stoppers	14-Feb-06	6-Jul-06		C	SL_MFMS	Hrs	320			33,024		33,024
1	03	05	04			Component Fab & Assembly - Stoppers	14-Feb-06	6-Jul-06		C	SL_MFAT	Hrs	160			13,466		13,466
1	03	05	04			Perform QC / Metrology	7-Jul-06	12-Jul-06		C	SL_MES	Hrs	32			2,972		2,972
1	03	05	04			Perform Functional Testing - Stoppers	13-Jul-06	14-Jul-06		C	SL_MFAT	Hrs	16			1,347		1,347
1	03	05	04			Collect Component Performance Data	17-Jul-06	21-Jul-06		C	SL_ME	Hrs	8			869		869
1	03	05	04			Load Component Data Base	24-Jul-06	28-Jul-06		C	SL_ME	Hrs	8			869		869
1	03	05	04			Post Process & Test	31-Jul-06	4-Aug-06		C	SL_MFAT	Hrs	40			3,366		3,366
1	03	05	04			Define Diagnostics Support Requirements	11-Nov-05	16-Nov-05		P	SL_ME	Hrs	4			435		435
1	03	05	04			Create ICD & Update LCLS Database	17-Nov-05	22-Nov-05		P	SL_ME	Hrs	4			435		435
1	03	05	04			Develop Preliminary Design - Diagnostic Supports	23-Nov-05	8-Dec-05		P	SL_ME	Hrs	4			435		435
1	03	05	04			Develop Preliminary Design - Diagnostic Supports	23-Nov-05	8-Dec-05		P	SL_MDD	Hrs	24			1,548		1,548
1	03	05	04			Conduct Preliminary Design Review (PDR)	9-Dec-05	12-Dec-05		P	SL_ME	Hrs	2			217		217

LCLS TPC Detailed Cost Estimate (FY05FY09)

5/5/2005

WBS Level						LCLA DCE March-2005 Description	Early Start	Early Finish	OBS	Fund Type	Res Code	Units	Budgeted Quantity		Fully Burdened and Escalated Cost				
Run Time: 4/22/05 8:43am													Hours	\$	Labor	M&S	Total (No Conting)		
1	2	3	4	5	6														
1	03	05	04			Conduct Preliminary Design Review (PDR)	9-Dec-05	12-Dec-05		P	SL_MDD	Hrs	2				129		129
1	03	05	04			Develop Final Design - Diagnostics Supports	13-Dec-05	10-Jan-06		P	SL_ME	Hrs	8				869		869
1	03	05	04			Develop Final Design - Diagnostics Supports	13-Dec-05	10-Jan-06		P	SL_MDD	Hrs	40				2,580		2,580
1	03	05	04			Conduct Final Design Review (FDR)	11-Jan-06	12-Jan-06		P	SL_ME	Hrs	2				217		217
1	03	05	04			Conduct Final Design Review (FDR)	11-Jan-06	12-Jan-06		P	SL_MDD	Hrs	2				129		129
1	03	05	04			Prep Bid Pak - Diagnostics Supports	13-Jan-06	13-Jan-06		C	SL_ME	Hrs	2				217		217
1	03	05	04			Prep Bid Pak - Diagnostics Supports	13-Jan-06	13-Jan-06		C	SL_MDD	Hrs	4				258		258
1	03	05	04			Evaluate Vendor Proposals - Supports	14-Feb-06	17-Feb-06		C	SL_ME	Hrs	8				869		869
1	03	05	04			Vendor Fab 1st Lot - Supports	22-Feb-06	21-Mar-06		C	SA_MSEG	\$\$		2,000				2,240	2,240
1	03	05	04			Procure Misc Materials - Diagnostics Supports	13-Jan-06	10-Feb-06		C	SL_MSEG	\$\$		200				224	224
1	03	05	04			Perform QC & Inspection - Diagnostic Supports	22-Mar-06	23-Mar-06		C	SL_MES	Hrs	8				743		743
1	03	05	04			Assemble Supports	24-Mar-06	6-Apr-06		C	SL_MFAT	Hrs	32				2,693		2,693
1	03	05	04			Perform Pre-Installation Qualification - Support	7-Apr-06	12-Apr-06		C	SL_ME	Hrs	4				435		435
1	03	05	05			Profile Monitors (5ea)							1,134	174,000		94,953	194,880	289,833	
1	03	05	05			Write ICD - Profile Monitor	1-Oct-04	18-Oct-04		P	SL_ME	Hrs	12				1,269		1,269
1	03	05	05			Develop General Specifications / Analysis	1-Oct-04	18-Oct-04		P	SL_ME	Hrs	8				846		846
1	03	05	05			Create / Remodel / Revise Dsn Documentation	19-Oct-04	2-Dec-04		P	SL_MDD	Hrs	80				5,019		5,019
1	03	05	05			Design Phosphor Screen Option	3-Dec-04	16-Dec-04		P	SL_ME	Hrs	16				1,691		1,691
1	03	05	05			Design Phosphor Screen Option	3-Dec-04	16-Dec-04		P	SL_MDD	Hrs	40				2,510		2,510
1	03	05	05			Design OTR Screen Options	17-Dec-04	13-Jan-05		P	SL_ME	Hrs	16				1,691		1,691
1	03	05	05			Design OTR Screen Options	17-Dec-04	13-Jan-05		P	SL_MDD	Hrs	40				2,510		2,510
1	03	05	05			Make Simplified Models	14-Jan-05	19-Jan-05		P	SL_MDD	Hrs	24				1,506		1,506
1	03	05	05			Release Final Model To Server	20-Jan-05	10-Feb-05		P	SL_MDD	Hrs	16				1,004		1,004
1	03	05	05			Update Component Data Base	11-Feb-05	14-Feb-05		P	SL_ME	Hrs	4				423		423
1	03	05	05			Write Component Traveler	15-Feb-05	26-Apr-05		P	SL_ME	Hrs	8				846		846
1	03	05	05			Prepare for PDR - Profile Monitors	27-Apr-05	29-Apr-05		P	SL_ME	Hrs	8				846		846
1	03	05	05			Conduct Profile Monitors PDR	2-May-05	2-May-05		P	SL_ME	Hrs	8				846		846
1	03	05	05			Generate Detailed Procurement Plan	3-May-05	3-May-05		P	SL_ME	Hrs	4				423		423
1	03	05	05			Establish Subordinate Work Orders	4-May-05	4-May-05		P	SL_ME	Hrs	4				423		423
1	03	05	05			Prepare for FDR - Profile Monitors	5-May-05	9-May-05		P	SL_ME	Hrs	8				846		846
1	03	05	05			Conduct Profile Monitors FDR	10-May-05	10-May-05		P	SL_ME	Hrs	8				846		846
1	03	05	05			Prep Bid Pak - Profile Monitor	11-May-05	12-May-05		P	SL_ME	Hrs	8				846		846
1	03	05	05			Prep Bid Pak - Profile Monitor	11-May-05	12-May-05		P	SL_MDD	Hrs	16				1,004		1,004
1	03	05	05			Evaluate Vendor Proposals	13-Jun-05	16-Jun-05		P	SL_ME	Hrs	32				3,383		3,383
1	03	05	05			Vendor Fab 1st Lot	4-Oct-05	14-Nov-05		C	SA_MSEG	\$\$		50,000				56,000	56,000
1	03	05	05			Vendor Fab Remaining Lot	15-Nov-05	12-Jan-06		C	SL_MSEG	\$\$		50,000				56,000	56,000
1	03	05	05			Procure 50B1 Profile Monitor	4-Oct-05	31-Oct-05	S	C	SA_MSEG	\$\$		50,000				56,000	56,000
1	03	05	05			Procure Component Material - Profile Monitors	3-Oct-05	29-Nov-05		C	SL_MSEG	\$\$		2,000				2,240	2,240
1	03	05	05			Component Fab & Assembly - Profile Monitors	17-Oct-05	13-Dec-05		C	SL_MFPC	Hrs	24				3,954		3,954
1	03	05	05			Component Fab & Assembly - Profile Monitors	17-Oct-05	13-Dec-05		C	SL_MFMS	Hrs	40				4,128		4,128
1	03	05	05			Component Fab & Assembly - Profile Monitors	17-Oct-05	13-Dec-05		C	SL_MFAT	Hrs	240				20,198		20,198
1	03	05	05			Perform QC / Metrology	13-Jan-06	27-Jan-06		C	SL_MES	Hrs	32				2,972		2,972
1	03	05	05			Perform Functional Testing - Profile Monitors	30-Jan-06	27-Feb-06		C	SL_CCA	Hrs	40				2,694		2,694
1	03	05	05			Collect Component Performance Data	28-Feb-06	1-Mar-06		C	SL_ME	Hrs	8				869		869
1	03	05	05			Load Component Data Base	28-Feb-06	3-Mar-06		C	SL_ME	Hrs	8				869		869
1	03	05	05			Post Process & Test	28-Feb-06	13-Mar-06		C	SL_MFAT	Hrs	40				3,366		3,366
1	03	05	05			Define Diagnostics Support Requirements	11-May-05	12-May-05		P	SL_ME	Hrs	4				423		423
1	03	05	05			Create ICD & Update LCLS Database	13-May-05	16-May-05		P	SL_ME	Hrs	4				423		423
1	03	05	05			Develop Preliminary Design - Diagnostic Supports	17-May-05	31-May-05		P	SL_ME	Hrs	8				846		846
1	03	05	05			Develop Preliminary Design - Diagnostic Supports	17-May-05	31-May-05		P	SL_MDD	Hrs	40				2,510		2,510
1	03	05	05			Conduct Preliminary Design Review (PDR)	1-Jun-05	1-Jun-05		P	SL_ME	Hrs	2				211		211
1	03	05	05			Conduct Preliminary Design Review (PDR)	1-Jun-05	1-Jun-05		P	SL_MDD	Hrs	2				125		125
1	03	05	05			Develop Final Design - Diagnostics Supports	2-Jun-05	17-Jun-05		P	SL_ME	Hrs	8				846		846
1	03	05	05			Develop Final Design - Diagnostics Supports	2-Jun-05	17-Jun-05		P	SL_MDD	Hrs	80				5,019		5,019
1	03	05	05			Conduct Final Design Review (FDR)	20-Jun-05	20-Jun-05		P	SL_ME	Hrs	2				211		211
1	03	05	05			Conduct Final Design Review (FDR)	20-Jun-05	20-Jun-05		P	SL_MDD	Hrs	2				125		125
1	03	05	05			Prep Bid Pak - Diagnostics Supports	21-Jun-05	21-Jun-05		P	SL_ME	Hrs	2				211		211
1	03	05	05			Prep Bid Pak - Diagnostics Supports	21-Jun-05	21-Jun-05		P	SL_MDD	Hrs	4				251		251
1	03	05	05			Evaluate Vendor Proposals - Supports	21-Jul-05	26-Jul-05		P	SL_ME	Hrs	8				846		846
1	03	05	05			Vendor Fab 1st Lot - Supports	4-Oct-05	31-Oct-05		C	SA_MSEG	\$\$		19,000				21,280	21,280
1	03	05	05			Procure Misc Materials - Diagnostics Supports	3-Oct-05	28-Oct-05		C	SL_MSEG	\$\$		3,000				3,360	3,360
1	03	05	05			Perform QC & Inspection - Diagnostic Supports	31-Oct-05	1-Nov-05		C	SL_MES	Hrs	8				743		743
1	03	05	05			Assemble Supports	2-Nov-05	22-Nov-05		C	SL_MFAT	Hrs	160				13,466		13,466
1	03	05	05			Perform Pre-Installation Qualification - Support	23-Nov-05	30-Nov-05		C	SL_ME	Hrs	8				869		869

LCLS TPC Detailed Cost Estimate (FY05FY09)

5/5/2005

WBS Level						LCLA DCE March-2005 Description	Early Start	Early Finish	OBS	Fund Type	Res Code	Units	Budgeted Quantity		Fully Burdened and Escalated Cost		
Run Time: 4/22/05 8:43am													Hours	\$	Labor	M&S	Total (No Conting)
1	2	3	4	5	6	E/O Bunch Length Monitors (1ea)							812	60,000	73,269	67,500	140,769
1	03	05	06			Write ICD - E/O Monitor	1-Oct-04	28-Oct-04		P	SL_ME	Hrs	8		846		846
1	03	05	06			Prep Bid Pak - Profile Monitor	3-Oct-06	4-Oct-06		C	SL_ME	Hrs	8		892		892
1	03	05	06			Prep Bid Pak - Profile Monitor	3-Oct-06	4-Oct-06		C	SL_MDD	Hrs	16		1,059		1,059
1	03	05	06			Remodel / REvise Dsn Documentation	1-Oct-04	29-Nov-04		P	SL_ME	Hrs	20		2,114		2,114
1	03	05	06			Remodel / REvise Dsn Documentation	1-Oct-04	29-Nov-04		P	SL_MDD	Hrs	100		6,274		6,274
1	03	05	06			Evaluate Vendor Proposals	2-Nov-06	7-Nov-06		C	SL_ME	Hrs	16		1,784		1,784
1	03	05	06			Vendor Fab 1st Lot	9-Nov-06	8-Jan-07		C	SA_MSEG	\$\$		5,000		5,750	5,750
1	03	05	06			Vendor Fab Remaining Lot	9-Jan-07	21-Feb-07		C	SA_MSEG	\$\$		5,000		5,750	5,750
1	03	05	06			Prep Bid Pak - Misc Equip/Comp - E/O Mon	30-Nov-04	1-Dec-04		P	SL_ME	Hrs	8		846		846
1	03	05	06			Prep Bid Pak - Misc Equip/Comp - E/O Mon	30-Nov-04	1-Dec-04		P	SL_MDD	Hrs	16		1,004		1,004
1	03	05	06			Evaluate Vendor Proposals	13-Jan-05	19-Jan-05		P	SL_ME	Hrs	16		1,691		1,691
1	03	05	06			Vendor Fab & Assy - Misc Equip/Comp - E/O Mon	4-Oct-05	13-Mar-06		C	SA_MSEG	\$\$		50,000		56,000	56,000
1	03	05	06			Component Fab & Assembly - E/O Monitors	14-Mar-06	5-Jul-06		C	SL_MFPC	Hrs	20		3,295		3,295
1	03	05	06			Component Fab & Assembly - E/O Monitors	14-Mar-06	5-Jul-06		C	SL_MFMS	Hrs	160		16,512		16,512
1	03	05	06			Component Fab & Assembly - E/O Monitors	14-Mar-06	5-Jul-06		C	SL_MFAT	Hrs	40		3,366		3,366
1	03	05	06			E/O Laser Optics Assembly and Test	6-Jul-06	16-Aug-06		C	SL_PHS	Hrs	120		8,982		8,982
1	03	05	06			E/O Laser Optics Assembly	2-Oct-06	27-Oct-06		C	SL_MFMS	Hrs	80		8,470		8,470
1	03	05	06			E/O Laser Optics Fabrication	30-Oct-06	10-Nov-06		C	SL_MFAT	Hrs	40		3,454		3,454
1	03	05	06			Perform QC / Metrology	22-Feb-07	27-Feb-07		C	SL_MES	Hrs	8		762		762
1	03	05	06			Perform Functional Testing - E/O Monitors	28-Feb-07	1-Mar-07		C	SL_CCA	Hrs	40		2,764		2,764
1	03	05	06			Collect Component Performance Data	2-Mar-07	8-Mar-07		C	SL_ME	Hrs	24		2,676		2,676
1	03	05	06			Load Component Data Base	9-Mar-07	15-Mar-07		C	SL_ME	Hrs	8		892		892
1	03	05	06			Post Process & Test	16-Mar-07	22-Mar-07		C	SL_MFAT	Hrs	40		3,454		3,454
1	03	05	06			Prepare for Post-Test FDR - E/O Monitor	23-Mar-07	23-Mar-07		C	SL_ME	Hrs	8		892		892
1	03	05	06			Prepare for Post-Test FDR - E/O Monitor	23-Mar-07	23-Mar-07		C	SL_MDD	Hrs	8		529		529
1	03	05	06			Conduct Post-Test E/O Monitor FDR	26-Mar-07	26-Mar-07		C	SL_ME	Hrs	4		446		446
1	03	05	06			Conduct Post-Test E/O Monitor FDR	26-Mar-07	26-Mar-07		C	SL_MDD	Hrs	4		265		265
1	03	05	07			Bunch Length Monitors (4ea)							782	9,050	71,364	10,136	81,500
1	03	05	07			Receive Bunch Length Monitor Requirements	16-Dec-04	16-Dec-04		P	SL_ME	Hrs	4		423		423
1	03	05	07			Review & Accept Requirements	17-Dec-04	17-Dec-04		P	SL_ME	Hrs	4		423		423
1	03	05	07			Write ICD - Bunch Length Monitor	3-Jan-05	4-Jan-05		P	SL_ME	Hrs	8		846		846
1	03	05	07			Collect Area Specific Requirements	5-Jan-05	6-Jan-05		P	SL_ME	Hrs	4		423		423
1	03	05	07			Collect Area Specific Requirements	5-Jan-05	6-Jan-05		P	SL_MDD	Hrs	8		502		502
1	03	05	07			Evaluate Existing Design Documentation	7-Jan-05	12-Jan-05		P	SL_ME	Hrs	8		846		846
1	03	05	07			Evaluate Existing Design Documentation	7-Jan-05	12-Jan-05		P	SL_MDD	Hrs	16		1,004		1,004
1	03	05	07			Produce Common Layout	13-Jan-05	19-Jan-05		P	SL_MDD	Hrs	24		1,506		1,506
1	03	05	07			Develop General Specifications / Analysis	20-Jan-05	25-Jan-05		P	SL_ME	Hrs	16		1,691		1,691
1	03	05	07			Create / Remodel / Revise Dsn Documentation	26-Jan-05	9-Mar-05		P	SL_MDD	Hrs	160		10,038		10,038
1	03	05	07			Make Simplified Models	10-Mar-05	15-Mar-05		P	SL_MDD	Hrs	16		1,004		1,004
1	03	05	07			Release Final Model To Server	16-Mar-05	16-Mar-05		P	SL_MDD	Hrs	4		251		251
1	03	05	07			Update Component Data Base	17-Mar-05	17-Mar-05		P	SL_ME	Hrs	4		423		423
1	03	05	07			Write Component Traveler	18-Mar-05	21-Mar-05		P	SL_ME	Hrs	8		846		846
1	03	05	07			Prepare for PDR - Bunch Length Monitors	22-Mar-05	22-Mar-05		P	SL_ME	Hrs	2		211		211
1	03	05	07			Conduct B/L Monitors PDR	23-Mar-05	23-Mar-05		P	SL_ME	Hrs	2		211		211
1	03	05	07			Generate Detailed Procurement Plan	24-Mar-05	24-Mar-05		P	SL_ME	Hrs	4		423		423
1	03	05	07			Establish Subordinate Work Orders	25-Mar-05	25-Mar-05		P	SL_ME	Hrs	4		423		423
1	03	05	07			Prepare for FDR - Bunch Length Monitors	28-Mar-05	28-Mar-05		P	SL_ME	Hrs	2		211		211
1	03	05	07			Conduct B/L Monitors FDR	29-Mar-05	29-Mar-05		P	SL_ME	Hrs	2		211		211
1	03	05	07			Procure Component Material - Bunch Length Mon	3-Oct-05	28-Oct-05		C	SL_MSEG	\$\$		5,000		5,600	5,600
1	03	05	07			Component Fab & Assembly - Bunch Length Monit	31-Oct-05	29-Nov-05		C	SL_MFPC	Hrs	100		16,476		16,476
1	03	05	07			Component Fab & Assembly - Bunch Length Monit	31-Oct-05	29-Nov-05		C	SL_MFMS	Hrs	16		1,651		1,651
1	03	05	07			Component Fab & Assembly - Bunch Length Monit	31-Oct-05	29-Nov-05		C	SL_MFAT	Hrs	150		12,624		12,624
1	03	05	07			Perform QC / Metrology	30-Nov-05	11-Jan-06		C	SL_MES	Hrs	16		1,486		1,486
1	03	05	07			Perform Functional Testing - Bunch Length Mon	12-Jan-06	13-Jan-06		C	SL_CE	Hrs	16		1,851		1,851
1	03	05	07			Collect Component Performance Data	17-Jan-06	18-Jan-06		C	SL_ME	Hrs	8		869		869
1	03	05	07			Load Component Data Base	17-Jan-06	18-Jan-06		C	SL_ME	Hrs	8		869		869
1	03	05	07			Post Process & Test	17-Jan-06	30-Jan-06		C	SL_MFAT	Hrs	40		3,366		3,366
1	03	05	07			Define Diagnostics Support Requirements	30-Mar-05	30-Mar-05		P	SL_ME	Hrs	2		211		211
1	03	05	07			Create ICD & Update LCLS Database	31-Mar-05	31-Mar-05		P	SL_ME	Hrs	2		211		211
1	03	05	07			Develop Preliminary Design - Diagnostic Supports	1-Apr-05	6-Apr-05		P	SL_ME	Hrs	2		211		211
1	03	05	07			Develop Preliminary Design - Diagnostic Supports	1-Apr-05	6-Apr-05		P	SL_MDD	Hrs	24		1,506		1,506
1	03	05	07			Conduct Preliminary Design Review (PDR)	7-Apr-05	7-Apr-05		P	SL_ME	Hrs	2		211		211
1	03	05	07			Conduct Preliminary Design Review (PDR)	7-Apr-05	7-Apr-05		P	SL_MDD	Hrs	2		125		125

LCLS TPC Detailed Cost Estimate (FY05FY09)

5/5/2005

WBS Level						LCLA DCE March-2005 Description	Early Start	Early Finish	OBS	Fund Type	Res Code	Units	Budgeted Quantity		Fully Burdened and Escalated Cost			
Run Time: 4/22/05 8:43am													Hours	\$\$	Labor	M&S	Total (No Conting)	
1	2	3	4	5	6													
1	03	05	07			Develop Final Design - Diagnostics Supports	8-Apr-05	13-Apr-05		P	SL_ME	Hrs	4			423		423
1	03	05	07			Develop Final Design - Diagnostics Supports	8-Apr-05	13-Apr-05		P	SL_MDD	Hrs	24			1,506		1,506
1	03	05	07			Conduct Final Design Review (FDR)	14-Apr-05	14-Apr-05		P	SL_ME	Hrs	2			211		211
1	03	05	07			Conduct Final Design Review (FDR)	14-Apr-05	14-Apr-05		P	SL_MDD	Hrs	2			125		125
1	03	05	07			Prep Bid Pak - Diagnostics Supports	15-Apr-05	15-Apr-05		P	SL_ME	Hrs	2			211		211
1	03	05	07			Prep Bid Pak - Diagnostics Supports	15-Apr-05	15-Apr-05		P	SL_MDD	Hrs	4			251		251
1	03	05	07			Evaluate Vendor Proposals - Supports	16-May-05	17-May-05		P	SL_ME	Hrs	8			846		846
1	03	05	07			Vendor Fab 1st Lot - Supports	4-Oct-05	31-Oct-05		C	SA_MSEG	\$\$		3,600			4,032	4,032
1	03	05	07			Procure Misc Materials - Diagnostics Supports	3-Oct-05	7-Oct-05		C	SL_MSEG	\$\$		450			504	504
1	03	05	07			Perform QC & Inspection - Diagnostic Supports	1-Nov-05	2-Nov-05		C	SL_MES	Hrs	8			743		743
1	03	05	07			Assemble Supports	3-Nov-05	16-Nov-05		C	SL_MFAT	Hrs	36			3,030		3,030
1	03	05	07			Perform Pre-Installation Qualification - Support	17-Nov-05	18-Nov-05		C	SL_ME	Hrs	4			435		435
1	03	05	08			Beam Loss Monitors							1,838	15,600	176,842	17,941	194,783	
1	03	05	08	01		Beam Loss Monitors (10 PIC)							602	6,550	51,463	7,533	58,996	
1	03	05	08	01		Receive Beam Loss Monitor Requirements	14-Jun-06	14-Jun-06		P	SL_ME	Hrs	2			217		217
1	03	05	08	01		Review & Accept Requirements	15-Jun-06	15-Jun-06		P	SL_ME	Hrs	2			217		217
1	03	05	08	01		Write ICD - Beam Loss Monitor	16-Jun-06	19-Jun-06		C	SL_ME	Hrs	8			869		869
1	03	05	08	01		Collect Area Specific Requirements	20-Jun-06	21-Jun-06		C	SL_ME	Hrs	4			435		435
1	03	05	08	01		Collect Area Specific Requirements	20-Jun-06	21-Jun-06		C	SL_MDD	Hrs	8			516		516
1	03	05	08	01		Evaluate Existing Design Documentation	22-Jun-06	3-Jul-06		C	SL_ME	Hrs	8			869		869
1	03	05	08	01		Evaluate Existing Design Documentation	22-Jun-06	3-Jul-06		C	SL_MDD	Hrs	40			2,580		2,580
1	03	05	08	01		Produce Common Layout	5-Jul-06	14-Jul-06		P	SL_MDD	Hrs	40			2,580		2,580
1	03	05	08	01		Develop General Specifications / Analysis	17-Jul-06	20-Jul-06		C	SL_ME	Hrs	16			1,739		1,739
1	03	05	08	01		Revise Design Documentation	21-Jul-06	3-Aug-06		P	SL_MDD	Hrs	80			5,159		5,159
1	03	05	08	01		Make Simplified Models	4-Aug-06	4-Aug-06		C	SL_MDD	Hrs	4			258		258
1	03	05	08	01		Release Final Model To Server	7-Aug-06	7-Aug-06		C	SL_MDD	Hrs	4			258		258
1	03	05	08	01		Update Component Data Base	8-Aug-06	9-Aug-06		C	SL_ME	Hrs	4			435		435
1	03	05	08	01		Write Component Traveler	10-Aug-06	11-Aug-06		C	SL_ME	Hrs	8			869		869
1	03	05	08	01		Prepare for PDR - Beam Loss Monitors	14-Aug-06	14-Aug-06		C	SL_ME	Hrs	2			217		217
1	03	05	08	01		Prepare for PDR - Beam Loss Monitors	14-Aug-06	14-Aug-06		C	SL_MDD	Hrs	2			129		129
1	03	05	08	01		Conduct Beam Loss Monitors PDR	15-Aug-06	15-Aug-06		C	SL_ME	Hrs	8			869		869
1	03	05	08	01		Generate Detailed Procurement Plan	16-Aug-06	16-Aug-06		C	SL_ME	Hrs	4			435		435
1	03	05	08	01		Establish Subordinate Work Orders	17-Aug-06	17-Aug-06		C	SL_ME	Hrs	4			435		435
1	03	05	08	01		Prepare for FDR - Beam Loss Monitors	18-Aug-06	18-Aug-06		C	SL_ME	Hrs	2			217		217
1	03	05	08	01		Prepare for FDR - Beam Loss Monitors	18-Aug-06	18-Aug-06		C	SL_MDD	Hrs	2			129		129
1	03	05	08	01		Conduct Beam Loss Monitors FDR	21-Aug-06	21-Aug-06		C	SL_ME	Hrs	2			217		217
1	03	05	08	01		Procure Component Material - Beam Loss Monitors	3-Oct-06	11-Jan-07		C	SL_MSEG	\$\$		2,500			2,875	2,875
1	03	05	08	01		Component Fab & Assembly - Beam Loss Monitors	31-Oct-06	9-Feb-07		C	SL_MFMS	Hrs	100			10,588		10,588
1	03	05	08	01		Component Fab & Assembly - Beam Loss Monitors	31-Oct-06	9-Feb-07		C	SL_MFAT	Hrs	40			3,454		3,454
1	03	05	08	01		Perform QC / Metrology	12-Feb-07	16-Feb-07		C	SL_MES	Hrs	16			1,524		1,524
1	03	05	08	01		Perform Functional Testing - Beam Loss Monito	20-Feb-07	5-Mar-07		C	SL_CCA	Hrs	12			829		829
1	03	05	08	01		Collect Component Performance Data	6-Mar-07	12-Mar-07		C	SL_ME	Hrs	4			446		446
1	03	05	08	01		Load Component Data Base	6-Mar-07	12-Mar-07		C	SL_ME	Hrs	4			446		446
1	03	05	08	01		Post Process & Test	6-Mar-07	12-Mar-07		C	SL_MFAT	Hrs	10			864		864
1	03	05	08	01		Define Diagnostics Support Requirements	3-Oct-06	6-Oct-06		C	SL_ME	Hrs	4			446		446
1	03	05	08	01		Create ICD & Update LCLS Database	9-Oct-06	12-Oct-06		C	SL_ME	Hrs	4			446		446
1	03	05	08	01		Develop Preliminary Design - Diagnostic Supports	13-Oct-06	26-Oct-06		C	SL_ME	Hrs	8			892		892
1	03	05	08	01		Develop Preliminary Design - Diagnostic Supports	13-Oct-06	26-Oct-06		C	SL_MDD	Hrs	24			1,588		1,588
1	03	05	08	01		Conduct Preliminary Design Review (PDR)	27-Oct-06	27-Oct-06		C	SL_ME	Hrs	2			223		223
1	03	05	08	01		Conduct Preliminary Design Review (PDR)	27-Oct-06	27-Oct-06		C	SL_MDD	Hrs	2			132		132
1	03	05	08	01		Develop Final Design - Diagnostics Supports	30-Oct-06	10-Nov-06		C	SL_ME	Hrs	8			892		892
1	03	05	08	01		Develop Final Design - Diagnostics Supports	30-Oct-06	10-Nov-06		C	SL_MDD	Hrs	40			2,647		2,647
1	03	05	08	01		Conduct Final Design Review (FDR)	13-Nov-06	13-Nov-06		C	SL_ME	Hrs	2			223		223
1	03	05	08	01		Conduct Final Design Review (FDR)	13-Nov-06	13-Nov-06		C	SL_MDD	Hrs	2			132		132
1	03	05	08	01		Prep Bid Pak - Diagnostics Supports	14-Nov-06	14-Nov-06		C	SL_ME	Hrs	2			223		223
1	03	05	08	01		Prep Bid Pak - Diagnostics Supports	14-Nov-06	14-Nov-06		C	SL_MDD	Hrs	4			265		265
1	03	05	08	01		Evaluate Vendor Proposals - Supports	8-Dec-06	11-Dec-06		C	SL_ME	Hrs	8			892		892
1	03	05	08	01		Vendor Fab 1st Lot - Supports	13-Dec-06	25-Jan-07		C	SA_MSEG	\$\$		3,600			4,140	4,140
1	03	05	08	01		Procure Misc Materials - Diagnostics Supports	14-Nov-06	6-Dec-06		C	SL_MSEG	\$\$		450			518	518
1	03	05	08	01		Perform QC & Inspection - Diagnostic Supports	7-Dec-06	8-Dec-06		C	SL_MES	Hrs	8			762		762
1	03	05	08	01		Assemble Supports	26-Jan-07	8-Feb-07		C	SL_MFAT	Hrs	40			3,454		3,454
1	03	05	08	01		Perform Pre-Installation Qualification - Support	9-Feb-07	12-Feb-07		C	SL_ME	Hrs	4			446		446
1	03	05	08	02		Beam Loss Monitors (2 PLIC)							1,236	9,050	125,379	10,408	135,787	
1	03	05	08	02		Receive Beam Loss Monitor Requirements	3-Oct-05	3-Oct-05		P	SL_ME	Hrs	2			217		217

LCLS TPC Detailed Cost Estimate (FY05FY09)

5/5/2005

WBS Level						LCLA DCE March-2005 Description	Early Start	Early Finish	OBS	Fund Type	Res Code	Units	Budgeted Quantity		Fully Burdened and Escalated Cost			
Run Time: 4/22/05 8:43am													Hours	\$\$	Labor	M&S	Total (No Conting)	
1	2	3	4	5	6													
1	03	05	08	02		Review & Accept Requirements	3-Oct-06	3-Oct-06		C	SL_ME	Hrs	2			223		223
1	03	05	08	02		Write ICD - Beam Loss Monitor	4-Oct-06	5-Oct-06		C	SL_ME	Hrs	8			892		892
1	03	05	08	02		Collect Area Specific Requirements	6-Oct-06	11-Oct-06		C	SL_ME	Hrs	16			1,784		1,784
1	03	05	08	02		Collect Area Specific Requirements	6-Oct-06	11-Oct-06		C	SL_MDD	Hrs	8			529		529
1	03	05	08	02		Evaluate Existing Design Documentation	12-Oct-06	16-Oct-06		C	SL_ME	Hrs	8			892		892
1	03	05	08	02		Evaluate Existing Design Documentation	12-Oct-06	16-Oct-06		C	SL_MDD	Hrs	24			1,588		1,588
1	03	05	08	02		Produce Common Layout	17-Oct-06	23-Oct-06		C	SL_MDD	Hrs	40			2,647		2,647
1	03	05	08	02		Develop General Specifications / Analysis	24-Oct-06	25-Oct-06		C	SL_ME	Hrs	8			892		892
1	03	05	08	02		Revise Design Documentation	26-Oct-06	1-Nov-06		C	SL_MDD	Hrs	40			2,647		2,647
1	03	05	08	02		Make Simplified Models	2-Nov-06	3-Nov-06		C	SL_MDD	Hrs	8			529		529
1	03	05	08	02		Release Final Model To Server	6-Nov-06	6-Nov-06		C	SL_MDD	Hrs	4			265		265
1	03	05	08	02		Update Component Data Base	7-Nov-06	8-Nov-06		C	SL_ME	Hrs	4			446		446
1	03	05	08	02		Write Component Traveler	9-Nov-06	10-Nov-06		C	SL_ME	Hrs	8			892		892
1	03	05	08	02		Prepare for PDR - Beam Loss Monitors	13-Nov-06	13-Nov-06		C	SL_ME	Hrs	2			223		223
1	03	05	08	02		Prepare for PDR - Beam Loss Monitors	13-Nov-06	13-Nov-06		C	SL_MDD	Hrs	2			132		132
1	03	05	08	02		Conduct Beam Loss Monitors PDR	14-Nov-06	14-Nov-06		C	SL_ME	Hrs	8			892		892
1	03	05	08	02		Generate Detailed Procurement Plan	15-Nov-06	15-Nov-06		C	SL_ME	Hrs	4			446		446
1	03	05	08	02		Establish Subordinate Work Orders	16-Nov-06	16-Nov-06		C	SL_ME	Hrs	4			446		446
1	03	05	08	02		Prepare for FDR - Beam Loss Monitors	17-Nov-06	17-Nov-06		C	SL_ME	Hrs	2			223		223
1	03	05	08	02		Prepare for FDR - Beam Loss Monitors	17-Nov-06	17-Nov-06		C	SL_MDD	Hrs	2			132		132
1	03	05	08	02		Conduct Beam Loss Monitors FDR	20-Nov-06	20-Nov-06		C	SL_ME	Hrs	2			223		223
1	03	05	08	02		Procure Component Material - Beam Loss Monitors	21-Nov-06	4-Jan-07		C	SL_MSEG	\$\$		5,000			5,750	5,750
1	03	05	08	02		Component Fab & Assembly - Beam Loss Monitors	5-Jan-07	5-Mar-07		C	SL_MFPC	Hrs	100			16,905		16,905
1	03	05	08	02		Component Fab & Assembly - Beam Loss Monitors	5-Jan-07	5-Mar-07		C	SL_MFMS	Hrs	550			58,234		58,234
1	03	05	08	02		Component Fab & Assembly - Beam Loss Monitors	5-Jan-07	5-Mar-07		C	SL_MFAT	Hrs	150			12,953		12,953
1	03	05	08	02		Perform QC / Metrology	6-Mar-07	19-Mar-07		C	SL_MES	Hrs	16			1,524		1,524
1	03	05	08	02		Perform Functional Testing - Beam Loss Monito	20-Mar-07	23-Mar-07		C	SL_CCA	Hrs	16			1,106		1,106
1	03	05	08	02		Collect Component Performance Data	26-Mar-07	27-Mar-07		C	SL_ME	Hrs	8			892		892
1	03	05	08	02		Load Component Data Base	28-Mar-07	29-Mar-07		C	SL_ME	Hrs	8			892		892
1	03	05	08	02		Post Process & Test	30-Mar-07	12-Apr-07		C	SL_MFAT	Hrs	40			3,454		3,454
1	03	05	08	02		Define Diagnostics Support Requirements	21-Nov-06	28-Nov-06		C	SL_ME	Hrs	4			446		446
1	03	05	08	02		Create ICD & Update LCLS Database	29-Nov-06	4-Dec-06		C	SL_ME	Hrs	4			446		446
1	03	05	08	02		Develop Preliminary Design - Diagnostic Supports	5-Dec-06	8-Dec-06		C	SL_ME	Hrs	8			892		892
1	03	05	08	02		Develop Preliminary Design - Diagnostic Supports	5-Dec-06	8-Dec-06		C	SL_MDD	Hrs	24			1,588		1,588
1	03	05	08	02		Conduct Preliminary Design Review (PDR)	11-Dec-06	11-Dec-06		C	SL_ME	Hrs	2			223		223
1	03	05	08	02		Conduct Preliminary Design Review (PDR)	11-Dec-06	11-Dec-06		C	SL_MDD	Hrs	2			132		132
1	03	05	08	02		Develop Final Design - Diagnostics Supports	12-Dec-06	14-Dec-06		C	SL_ME	Hrs	8			892		892
1	03	05	08	02		Develop Final Design - Diagnostics Supports	12-Dec-06	14-Dec-06		C	SL_MDD	Hrs	24			1,588		1,588
1	03	05	08	02		Conduct Final Design Review (FDR)	15-Dec-06	15-Dec-06		C	SL_ME	Hrs	2			223		223
1	03	05	08	02		Conduct Final Design Review (FDR)	15-Dec-06	15-Dec-06		C	SL_MDD	Hrs	2			132		132
1	03	05	08	02		Prep Bid Pak - Diagnostics Supports	2-Jan-07	2-Jan-07		C	SL_ME	Hrs	2			223		223
1	03	05	08	02		Prep Bid Pak - Diagnostics Supports	2-Jan-07	2-Jan-07		C	SL_MDD	Hrs	4			265		265
1	03	05	08	02		Evaluate Vendor Proposals - Supports	1-Feb-07	2-Feb-07		C	SL_ME	Hrs	8			892		892
1	03	05	08	02		Vendor Fab 1st Lot - Supports	6-Feb-07	6-Mar-07		C	SA_MSEG	\$\$		3,600			4,140	4,140
1	03	05	08	02		Procure Misc Materials - Diagnostics Supports	2-Jan-07	30-Jan-07		C	SL_MSEG	\$\$		450			518	518
1	03	05	08	02		Perform QC & Inspection - Diagnostic Supports	7-Mar-07	8-Mar-07		C	SL_MES	Hrs	8			762		762
1	03	05	08	02		Assemble Supports	9-Mar-07	22-Mar-07		C	SL_MFAT	Hrs	36			3,109		3,109
1	03	05	08	02		Perform Pre-Installation Qualification - Support	23-Mar-07	28-Mar-07		C	SL_ME	Hrs	4			446		446
1	03	05	09			Single Beam Dump (1ea)							594	8,950	51,425	10,293	61,718	
1	03	05	09			Receive Single Beam Dump Requirements	3-Oct-06	3-Oct-06		C	SL_ME	Hrs	4			446		446
1	03	05	09			Review & Accept Requirements	4-Oct-06	4-Oct-06		C	SL_ME	Hrs	4			446		446
1	03	05	09			Write ICD - Single Beam Dump	5-Oct-06	6-Oct-06		C	SL_ME	Hrs	8			892		892
1	03	05	09			Collect Area Specific Requirements	9-Oct-06	12-Oct-06		C	SL_ME	Hrs	8			892		892
1	03	05	09			Collect Area Specific Requirements	9-Oct-06	12-Oct-06		C	SL_MDD	Hrs	32			2,117		2,117
1	03	05	09			Evaluate Existing Design Documentation	13-Oct-06	17-Oct-06		C	SL_ME	Hrs	8			892		892
1	03	05	09			Evaluate Existing Design Documentation	13-Oct-06	17-Oct-06		C	SL_MDD	Hrs	24			1,588		1,588
1	03	05	09			Produce Common Layout	18-Oct-06	31-Oct-06		C	SL_MDD	Hrs	60			3,970		3,970
1	03	05	09			Develop General Specifications / Analysis	1-Nov-06	14-Nov-06		C	SL_ME	Hrs	16			1,784		1,784
1	03	05	09			Create / Remodel / Revise Dsn Documentation	15-Nov-06	30-Nov-06		C	SL_MDD	Hrs	60			3,970		3,970
1	03	05	09			Make Simplified Models	1-Dec-06	14-Dec-06		C	SL_MDD	Hrs	16			1,059		1,059
1	03	05	09			Release Final Model To Server	15-Dec-06	15-Dec-06		C	SL_MDD	Hrs	4			265		265
1	03	05	09			Update Component Data Base	2-Jan-07	2-Jan-07		C	SL_ME	Hrs	4			446		446
1	03	05	09			Write Component Traveler	3-Jan-07	4-Jan-07		C	SL_ME	Hrs	8			892		892
1	03	05	09			Prepare for PDR - Single Beam Dump	5-Jan-07	5-Jan-07		C	SL_ME	Hrs	2			223		223

LCLS TPC Detailed Cost Estimate (FY05FY09)

5/5/2005

WBS Level						LCLA DCE March-2005 Description	Early Start	Early Finish	OBS	Fund Type	Res Code	Units	Budgeted Quantity		Fully Burdened and Escalated Cost				
Run Time: 4/22/05 8:43am													Hours	\$	Labor	M&S	Total (No Conting)		
1	2	3	4	5	6														
1	03	05	09			Prepare for PDR - Single Beam Dump	5-Jan-07	5-Jan-07		C	SL_MDD	Hrs	4			265		265	
1	03	05	09			Conduct Single Beam Dump PDR	8-Jan-07	8-Jan-07		C	SL_ME	Hrs	2			223		223	
1	03	05	09			Conduct Single Beam Dump PDR	8-Jan-07	8-Jan-07		C	SL_MDD	Hrs	2			132		132	
1	03	05	09			Generate Detailed Procurement Plan	9-Jan-07	9-Jan-07		C	SL_ME	Hrs	4			446		446	
1	03	05	09			Establish Subordinate Work Orders	10-Jan-07	10-Jan-07		C	SL_ME	Hrs	4			446		446	
1	03	05	09			Prepare for FDR - Single Beam Dump	11-Jan-07	11-Jan-07		C	SL_ME	Hrs	2			223		223	
1	03	05	09			Prepare for FDR - Single Beam Dump	11-Jan-07	11-Jan-07		C	SL_MDD	Hrs	4			265		265	
1	03	05	09			Conduct Single Beam Dump FDR	12-Jan-07	12-Jan-07		C	SL_ME	Hrs	2			223		223	
1	03	05	09			Conduct Single Beam Dump FDR	12-Jan-07	12-Jan-07		C	SL_MDD	Hrs	2			132		132	
1	03	05	09			Procure Component Material - Single Beam Dump	16-Jan-07	12-Feb-07		C	SL_MSEG	\$\$		6,000			6,900		6,900
1	03	05	09			Component Fab & Assembly - Single Beam Dump	13-Feb-07	27-Feb-07		C	SL_MFPC	Hrs	16			2,705		2,705	
1	03	05	09			Component Fab & Assembly - Single Beam Dump	13-Feb-07	27-Feb-07		C	SL_MFMS	Hrs	16			1,694		1,694	
1	03	05	09			Component Fab & Assembly - Single Beam Dump	13-Feb-07	27-Feb-07		C	SL_MFAT	Hrs	40			3,454		3,454	
1	03	05	09			Perform QC / Metrology	28-Feb-07	1-Mar-07		C	SL_MES	Hrs	16			1,524		1,524	
1	03	05	09			Perform Functional Testing - Single Beam Dump	2-Mar-07	5-Mar-07		C	SL_ME	Hrs	16			1,784		1,784	
1	03	05	09			Collect Component Performance Data	6-Mar-07	7-Mar-07		C	SL_ME	Hrs	8			892		892	
1	03	05	09			Load Component Data Base	8-Mar-07	9-Mar-07		C	SL_ME	Hrs	8			892		892	
1	03	05	09			Post Process & Test	12-Mar-07	23-Mar-07		C	SL_MFAT	Hrs	40			3,454		3,454	
1	03	05	09			Define Diagnostics Support Requirements	1-Nov-06	1-Nov-06		C	SL_ME	Hrs	4			446		446	
1	03	05	09			Create ICD & Update LCLS Database	2-Nov-06	2-Nov-06		C	SL_ME	Hrs	4			446		446	
1	03	05	09			Develop Preliminary Design - Diagnostic Supports	3-Nov-06	8-Nov-06		C	SL_ME	Hrs	8			892		892	
1	03	05	09			Develop Preliminary Design - Diagnostic Supports	3-Nov-06	8-Nov-06		C	SL_MDD	Hrs	16			1,059		1,059	
1	03	05	09			Conduct Preliminary Design Review (PDR)	9-Nov-06	9-Nov-06		C	SL_ME	Hrs	2			223		223	
1	03	05	09			Conduct Preliminary Design Review (PDR)	9-Nov-06	9-Nov-06		C	SL_MDD	Hrs	2			132		132	
1	03	05	09			Develop Final Design - Diagnostics Supports	10-Nov-06	16-Nov-06		C	SL_ME	Hrs	8			892		892	
1	03	05	09			Develop Final Design - Diagnostics Supports	10-Nov-06	16-Nov-06		C	SL_MDD	Hrs	40			2,647		2,647	
1	03	05	09			Conduct Final Design Review (FDR)	17-Nov-06	17-Nov-06		C	SL_ME	Hrs	2			223		223	
1	03	05	09			Conduct Final Design Review (FDR)	17-Nov-06	17-Nov-06		C	SL_MDD	Hrs	2			132		132	
1	03	05	09			Prep Bid Pak - Diagnostics Supports	20-Nov-06	20-Nov-06		C	SL_ME	Hrs	2			223		223	
1	03	05	09			Prep Bid Pak - Diagnostics Supports	20-Nov-06	20-Nov-06		C	SL_MDD	Hrs	4			265		265	
1	03	05	09			Evaluate Vendor Proposals - Supports	5-Jan-07	8-Jan-07		C	SL_ME	Hrs	8			892		892	
1	03	05	09			Vendor Fab 1st Lot - Supports	13-Feb-07	13-Mar-07		C	SA_MSEG	\$\$		2,500			2,875		2,875
1	03	05	09			Procure Misc Materials - Diagnostics Supports	20-Nov-06	3-Jan-07		C	SL_MSEG	\$\$		450			518		518
1	03	05	09			Perform QC & Inspection - Diagnostic Supports	14-Mar-07	15-Mar-07		C	SL_MES	Hrs	8			762		762	
1	03	05	09			Assemble Supports	16-Mar-07	29-Mar-07		C	SL_MFAT	Hrs	36			3,109		3,109	
1	03	05	09			Perform Pre-Installation Qualification - Support	30-Mar-07	4-Apr-07		C	SL_ME	Hrs	4			446		446	
1	03	05	10			Electron Safety Beam Dump (1ea)							814	12,950	69,365	14,893	84,258		
1	03	05	10			Receive Electron Beam Dump Requirements	3-Oct-06	3-Oct-06		C	SL_ME	Hrs	4			446		446	
1	03	05	10			Review & Accept Requirements	4-Oct-06	4-Oct-06		C	SL_ME	Hrs	4			446		446	
1	03	05	10			Write ICD - Electron Beam Dump	5-Oct-06	6-Oct-06		C	SL_ME	Hrs	8			892		892	
1	03	05	10			Collect Area Specific Requirements	9-Oct-06	12-Oct-06		C	SL_ME	Hrs	8			892		892	
1	03	05	10			Collect Area Specific Requirements	9-Oct-06	12-Oct-06		C	SL_MDD	Hrs	32			2,117		2,117	
1	03	05	10			Evaluate Existing Design Documentation	13-Oct-06	24-Oct-06		C	SL_ME	Hrs	8			892		892	
1	03	05	10			Evaluate Existing Design Documentation	13-Oct-06	24-Oct-06		C	SL_MDD	Hrs	40			2,647		2,647	
1	03	05	10			Produce Common Layout	25-Oct-06	31-Oct-06		C	SL_MDD	Hrs	40			2,647		2,647	
1	03	05	10			Develop General Specifications / Analysis	1-Nov-06	7-Nov-06		C	SL_ME	Hrs	16			1,784		1,784	
1	03	05	10			Create / Remodel / Revise Dsn Documentation	8-Nov-06	7-Dec-06		C	SL_MDD	Hrs	160			10,587		10,587	
1	03	05	10			Make Simplified Models	8-Dec-06	8-Dec-06		C	SL_MDD	Hrs	4			265		265	
1	03	05	10			Release Final Model To Server	11-Dec-06	11-Dec-06		C	SL_MDD	Hrs	4			265		265	
1	03	05	10			Update Component Data Base	12-Dec-06	13-Dec-06		C	SL_ME	Hrs	4			446		446	
1	03	05	10			Write Component Traveler	14-Dec-06	15-Dec-06		C	SL_ME	Hrs	8			892		892	
1	03	05	10			Prepare for PDR - Electron Beam Dump	2-Jan-07	2-Jan-07		C	SL_ME	Hrs	2			223		223	
1	03	05	10			Prepare for PDR - Electron Beam Dump	2-Jan-07	2-Jan-07		C	SL_MDD	Hrs	4			265		265	
1	03	05	10			Conduct Electron Beam Dump PDR	3-Jan-07	3-Jan-07		C	SL_ME	Hrs	2			223		223	
1	03	05	10			Conduct Electron Beam Dump PDR	3-Jan-07	3-Jan-07		C	SL_MDD	Hrs	4			265		265	
1	03	05	10			Generate Detailed Procurement Plan	4-Jan-07	4-Jan-07		C	SL_ME	Hrs	2			223		223	
1	03	05	10			Establish Subordinate Work Orders	5-Jan-07	5-Jan-07		C	SL_ME	Hrs	2			223		223	
1	03	05	10			Prepare for FDR - Electron Beam Dump	8-Jan-07	8-Jan-07		C	SL_ME	Hrs	2			223		223	
1	03	05	10			Prepare for FDR - Electron Beam Dump	8-Jan-07	8-Jan-07		C	SL_MDD	Hrs	4			265		265	
1	03	05	10			Conduct Electron Beam Dump FDR	9-Jan-07	9-Jan-07		C	SL_ME	Hrs	2			223		223	
1	03	05	10			Conduct Electron Beam Dump FDR	9-Jan-07	9-Jan-07		C	SL_MDD	Hrs	4			265		265	
1	03	05	10			Procure Component Material - Electron Beam Dump	10-Jan-07	5-Apr-07		C	SL_MSEG	\$\$		10,000			11,500		11,500
1	03	05	10			Component Fab & Assembly - Electron Beam Dump	6-Apr-07	29-Jun-07		C	SL_MFPC	Hrs	24			4,057		4,057	
1	03	05	10			Component Fab & Assembly - Electron Beam Dump	6-Apr-07	29-Jun-07		C	SL_MFMS	Hrs	24			2,541		2,541	

LCLS TPC Detailed Cost Estimate (FY05FY09)

5/5/2005

WBS Level						LCLA DCE March-2005 Description	Early Start	Early Finish	OBS	Fund Type	Res Code	Units	Budgeted Quantity		Fully Burdened and Escalated Cost			
Run Time: 4/22/05 8:43am													Hours	\$	Labor	M&S	Total (No Conting)	
1	2	3	4	5	6													
1	03	05	10			Component Fab & Assembly - Electron Beam Dump	6-Apr-07	29-Jun-07		C	SL_MFAT	Hrs	160			13,816		13,816
1	03	05	10			Perform QC / Metrology	2-Jul-07	6-Jul-07		C	SL_MES	Hrs	16			1,524		1,524
1	03	05	10			Perform Functional Testing - Electron Beam Du	9-Jul-07	12-Jul-07		C	SL_ME	Hrs	16			1,784		1,784
1	03	05	10			Collect Component Performance Data	13-Jul-07	16-Jul-07		C	SL_ME	Hrs	8			892		892
1	03	05	10			Load Component Data Base	17-Jul-07	18-Jul-07		C	SL_ME	Hrs	8			892		892
1	03	05	10			Post Process & Test	19-Jul-07	1-Aug-07		C	SL_MFAT	Hrs	40			3,454		3,454
1	03	05	10			Define Diagnostics Support Requirements	10-Jan-07	10-Jan-07		C	SL_ME	Hrs	4			446		446
1	03	05	10			Create ICD & Update LCLS Database	11-Jan-07	11-Jan-07		C	SL_ME	Hrs	4			446		446
1	03	05	10			Develop Preliminary Design - Diagnostic Supports	12-Jan-07	18-Jan-07		C	SL_ME	Hrs	8			892		892
1	03	05	10			Develop Preliminary Design - Diagnostic Supports	12-Jan-07	18-Jan-07		C	SL_MDD	Hrs	16			1,059		1,059
1	03	05	10			Conduct Preliminary Design Review (PDR)	19-Jan-07	19-Jan-07		C	SL_ME	Hrs	2			223		223
1	03	05	10			Conduct Preliminary Design Review (PDR)	19-Jan-07	19-Jan-07		C	SL_MDD	Hrs	2			132		132
1	03	05	10			Develop Final Design - Diagnostics Supports	22-Jan-07	26-Jan-07		C	SL_ME	Hrs	8			892		892
1	03	05	10			Develop Final Design - Diagnostics Supports	22-Jan-07	26-Jan-07		C	SL_MDD	Hrs	40			2,647		2,647
1	03	05	10			Conduct Final Design Review (FDR)	29-Jan-07	29-Jan-07		C	SL_ME	Hrs	2			223		223
1	03	05	10			Conduct Final Design Review (FDR)	29-Jan-07	29-Jan-07		C	SL_MDD	Hrs	2			132		132
1	03	05	10			Prep Bid Pak - Diagnostics Supports	30-Jan-07	30-Jan-07		C	SL_ME	Hrs	2			223		223
1	03	05	10			Prep Bid Pak - Diagnostics Supports	30-Jan-07	30-Jan-07		C	SL_MDD	Hrs	4			265		265
1	03	05	10			Evaluate Vendor Proposals - Supports	1-Mar-07	2-Mar-07		C	SL_ME	Hrs	8			892		892
1	03	05	10			Vendor Fab 1st Lot - Supports	6-Mar-07	2-Apr-07		C	SA_MSEG	\$\$		2,500			2,875	2,875
1	03	05	10			Procure Misc Materials - Diagnostics Supports	30-Jan-07	27-Feb-07		C	SL_MSEG	\$\$		450			518	518
1	03	05	10			Perform QC & Inspection - Diagnostic Supports	3-Apr-07	4-Apr-07		C	SL_MES	Hrs	8			762		762
1	03	05	10			Assemble Supports	5-Apr-07	18-Apr-07		C	SL_MFAT	Hrs	36			3,109		3,109
1	03	05	10			Perform Pre-Installation Qualification - Support	19-Apr-07	24-Apr-07		C	SL_ME	Hrs	4			446		446
1	03	05	11			Protection Collimators (6ea)							1,062	58,200	90,906	65,184	156,090	
1	03	05	11			Receive Protection Collimator Requirements	3-Oct-05	3-Oct-05		P	SL_ME	Hrs	4			435		435
1	03	05	11			Review & Accept Requirements	4-Oct-05	4-Oct-05		P	SL_ME	Hrs	4			435		435
1	03	05	11			Write ICD - Protection Collimator	5-Oct-05	6-Oct-05		C	SL_ME	Hrs	8			869		869
1	03	05	11			Collect Area Specific Requirements	7-Oct-05	10-Oct-05		P	SL_ME	Hrs	8			869		869
1	03	05	11			Collect Area Specific Requirements	7-Oct-05	10-Oct-05		P	SL_MDD	Hrs	16			1,032		1,032
1	03	05	11			Evaluate Existing Design Documentation	11-Oct-05	14-Oct-05		C	SL_ME	Hrs	8			869		869
1	03	05	11			Evaluate Existing Design Documentation	11-Oct-05	14-Oct-05		C	SL_MDD	Hrs	24			1,548		1,548
1	03	05	11			Produce Common Layout	17-Oct-05	21-Oct-05		P	SL_MDD	Hrs	40			2,580		2,580
1	03	05	11			Develop General Specifications / Analysis	24-Oct-05	25-Oct-05		P	SL_ME	Hrs	8			869		869
1	03	05	11			Create / Remodel / Revise Dsn Documentation	26-Oct-05	22-Nov-05		P	SL_MDD	Hrs	160			10,318		10,318
1	03	05	11			Make Simplified Models	23-Nov-05	30-Nov-05		P	SL_MDD	Hrs	8			516		516
1	03	05	11			Release Final Model To Server	1-Dec-05	6-Dec-05		P	SL_MDD	Hrs	8			516		516
1	03	05	11			Update Component Data Base	7-Dec-05	7-Dec-05		C	SL_ME	Hrs	4			435		435
1	03	05	11			Write Component Traveler	8-Dec-05	13-Dec-05		P	SL_ME	Hrs	16			1,739		1,739
1	03	05	11			Prepare for PDR - Protection Collimators	14-Dec-05	14-Dec-05		P	SL_ME	Hrs	4			435		435
1	03	05	11			Prepare for PDR - Protection Collimators	14-Dec-05	14-Dec-05		P	SL_MDD	Hrs	4			258		258
1	03	05	11			Conduct Protection Collimator PDR	15-Dec-05	15-Dec-05		P	SL_ME	Hrs	2			217		217
1	03	05	11			Conduct Protection Collimator PDR	15-Dec-05	15-Dec-05		P	SL_MDD	Hrs	2			129		129
1	03	05	11			Generate Detailed Procurement Plan	16-Dec-05	16-Dec-05		C	SL_ME	Hrs	4			435		435
1	03	05	11			Establish Subordinate Work Orders	3-Jan-06	3-Jan-06		C	SL_ME	Hrs	4			435		435
1	03	05	11			Prepare for FDR - Protection Collimators	4-Jan-06	6-Jan-06		P	SL_ME	Hrs	8			869		869
1	03	05	11			Conduct Protection Collimator FDR	9-Jan-06	9-Jan-06		P	SL_ME	Hrs	2			217		217
1	03	05	11			Conduct Protection Collimator FDR	9-Jan-06	9-Jan-06		P	SL_MDD	Hrs	2			129		129
1	03	05	11			Prep Bid Pak - Protection Collimator	10-Jan-06	11-Jan-06		C	SL_ME	Hrs	8			869		869
1	03	05	11			Prep Bid Pak - Protection Collimator	10-Jan-06	11-Jan-06		C	SL_MDD	Hrs	16			1,032		1,032
1	03	05	11			Evaluate Vendor Proposals	10-Feb-06	15-Feb-06		C	SL_ME	Hrs	16			1,739		1,739
1	03	05	11			Vendor Fab 1st Lot	17-Feb-06	17-Mar-06		C	SA_MSEG	\$\$		40,000			44,800	44,800
1	03	05	11			Procure Component Material - Protection Collimat	10-Jan-06	7-Feb-06		C	SL_MSEG	\$\$		5,000			5,600	5,600
1	03	05	11			Component Fab & Assembly - Protection Collimat	20-Mar-06	14-Apr-06		C	SL_MFPC	Hrs	40			6,590		6,590
1	03	05	11			Component Fab & Assembly - Protection Collimat	20-Mar-06	14-Apr-06		C	SL_MFMS	Hrs	80			8,256		8,256
1	03	05	11			Component Fab & Assembly - Protection Collimat	20-Mar-06	14-Apr-06		C	SL_MFAT	Hrs	240			20,198		20,198
1	03	05	11			Perform QC / Metrology	17-Apr-06	21-Apr-06		C	SL_MES	Hrs	40			3,715		3,715
1	03	05	11			Perform Functional Testing - Protection Colli	24-Apr-06	25-Apr-06		C	SL_CCA	Hrs	16			1,078		1,078
1	03	05	11			Collect Component Performance Data	26-Apr-06	27-Apr-06		C	SL_ME	Hrs	8			869		869
1	03	05	11			Load Component Data Base	26-Apr-06	27-Apr-06		C	SL_ME	Hrs	8			869		869
1	03	05	11			Post Process & Test	26-Apr-06	9-May-06		C	SL_MFAT	Hrs	40			3,366		3,366
1	03	05	11			Define Diagnostics Support Requirements	10-Jan-06	11-Jan-06		P	SL_ME	Hrs	4			435		435
1	03	05	11			Create ICD & Update LCLS Database	12-Jan-06	13-Jan-06		P	SL_ME	Hrs	4			435		435
1	03	05	11			Develop Preliminary Design - Diagnostic Supports	17-Jan-06	30-Jan-06		P	SL_ME	Hrs	16			1,739		1,739

LCLS TPC Detailed Cost Estimate (FY05FY09)

5/5/2005

WBS Level						LCLA DCE March-2005 Description	Early Start	Early Finish	OBS	Fund Type	Res Code	Units	Budgeted Quantity		Fully Burdened and Escalated Cost			
Run Time: 4/22/05 8:43am													Hours	\$	Labor	M&S	Total (No Conting)	
1	2	3	4	5	6													
1	03	05	11			Develop Preliminary Design - Diagnostic Supports	17-Jan-06	30-Jan-06		P	SL_MDD	Hrs	60			3,869		3,869
1	03	05	11			Conduct Preliminary Design Review (PDR)	31-Jan-06	31-Jan-06		P	SL_ME	Hrs	2			217		217
1	03	05	11			Conduct Preliminary Design Review (PDR)	31-Jan-06	31-Jan-06		P	SL_MDD	Hrs	2			129		129
1	03	05	11			Develop Final Design - Diagnostics Supports	1-Feb-06	14-Feb-06		P	SL_ME	Hrs	8			869		869
1	03	05	11			Develop Final Design - Diagnostics Supports	1-Feb-06	14-Feb-06		P	SL_MDD	Hrs	40			2,580		2,580
1	03	05	11			Conduct Final Design Review (FDR)	15-Feb-06	15-Feb-06		P	SL_ME	Hrs	2			217		217
1	03	05	11			Conduct Final Design Review (FDR)	15-Feb-06	15-Feb-06		P	SL_MDD	Hrs	2			129		129
1	03	05	11			Prep Bid Pak - Diagnostics Supports	16-Feb-06	16-Feb-06		C	SL_ME	Hrs	2			217		217
1	03	05	11			Prep Bid Pak - Diagnostics Supports	16-Feb-06	16-Feb-06		C	SL_MDD	Hrs	4			258		258
1	03	05	11			Evaluate Vendor Proposals - Supports	20-Mar-06	23-Mar-06		C	SL_ME	Hrs	8			869		869
1	03	05	11			Vendor Fab 1st Lot - Supports	27-Mar-06	21-Apr-06		C	SA_MSEG	\$\$		12,000			13,440	13,440
1	03	05	11			Procure Misc Materials - Diagnostics Supports	16-Feb-06	16-Mar-06		C	SL_MSEG	\$\$		1,200			1,344	1,344
1	03	05	11			Perform QC & Inspection - Diagnostic Supports	24-Apr-06	25-Apr-06		C	SL_MES	Hrs	8			743		743
1	03	05	11			Assemble Supports	26-Apr-06	3-May-06		C	SL_MFAT	Hrs	36			3,030		3,030
1	03	05	11			Perform Pre-Installation Qualification - Support	4-May-06	4-May-06		C	SL_ME	Hrs	4			435		435
1	03	05	12			Movable Collimators (7ea)							1,244	88,200	101,041	101,199	202,240	
1	03	05	12			Write ICD - Movable Collimator	1-Oct-04	28-Oct-04		P	SL_ME	Hrs	24			2,537		2,537
1	03	05	12			Produce Common Layout	1-Oct-04	11-Oct-04		P	SL_MDD	Hrs	8			502		502
1	03	05	12			Develop General Specifications / Analysis	12-Oct-04	27-Oct-04		P	SL_ME	Hrs	8			846		846
1	03	05	12			Create / Remodel / Revise Dsn Documentation	1-Oct-04	6-Apr-05		P	SL_MDD	Hrs	420			26,351		26,351
1	03	05	12			Make Simplified Models	7-Apr-05	12-Apr-05		P	SL_MDD	Hrs	24			1,506		1,506
1	03	05	12			Release Final Model To Server	13-Apr-05	14-Apr-05		P	SL_MDD	Hrs	8			502		502
1	03	05	12			Update Component Data Base	15-Apr-05	18-Apr-05		P	SL_ME	Hrs	4			423		423
1	03	05	12			Write Component Traveler	19-Apr-05	26-Apr-05		P	SL_ME	Hrs	24			2,537		2,537
1	03	05	12			Prepare for PDR - Movable Collimators	27-Apr-05	27-Apr-05		P	SL_ME	Hrs	2			211		211
1	03	05	12			Prepare for PDR - Movable Collimators	27-Apr-05	27-Apr-05		P	SL_MDD	Hrs	4			251		251
1	03	05	12			Conduct Prelim Dsn Review - Movable Collimator	28-Apr-05	28-Apr-05		P	SL_ME	Hrs	2			211		211
1	03	05	12			Conduct Prelim Dsn Review - Movable Collimator	28-Apr-05	28-Apr-05		P	SL_MDD	Hrs	2			125		125
1	03	05	12			Generate Detailed Procurement Plan	29-Apr-05	29-Apr-05		P	SL_ME	Hrs	4			423		423
1	03	05	12			Establish Subordinate Work Orders	2-May-05	2-May-05		P	SL_ME	Hrs	4			423		423
1	03	05	12			Prepare for FDR - Movable Collimators	3-May-05	3-May-05		P	SL_ME	Hrs	2			211		211
1	03	05	12			Prepare for FDR - Movable Collimators	3-May-05	3-May-05		P	SL_MDD	Hrs	2			125		125
1	03	05	12			Conduct Final Dsn Review - Movable Collimator	4-May-05	4-May-05		P	SL_ME	Hrs	2			211		211
1	03	05	12			Conduct Final Dsn Review - Movable Collimator	4-May-05	4-May-05		P	SL_MDD	Hrs	2			125		125
1	03	05	12			Prep Bid Pak - Movable Collimator	5-May-05	6-May-05		P	SL_ME	Hrs	8			846		846
1	03	05	12			Prep Bid Pak - Movable Collimator	5-May-05	6-May-05		P	SL_MDD	Hrs	16			1,004		1,004
1	03	05	12			Evaluate Vendor Proposals	7-Jun-05	10-Jun-05		P	SL_ME	Hrs	16			1,691		1,691
1	03	05	12			Vendor Fab 1st Lot	4-Oct-06	31-Oct-06		C	SA_MSEG	\$\$		70,000			80,500	80,500
1	03	05	12			Procure Component Material - Movable Collimator	10-Apr-06	3-Jul-06		C	SL_MSEG	\$\$		7,000			7,840	7,840
1	03	05	12			Component Fab & Assembly - Movable Collimator	1-Nov-06	12-Feb-07		C	SL_MFPC	Hrs	24			4,057		4,057
1	03	05	12			Component Fab & Assembly - Movable Collimator	1-Nov-06	12-Feb-07		C	SL_MFMS	Hrs	80			8,470		8,470
1	03	05	12			Component Fab & Assembly - Movable Collimator	1-Nov-06	12-Feb-07		C	SL_MFAT	Hrs	160			13,816		13,816
1	03	05	12			Perform QC / Metrology	13-Feb-07	27-Feb-07		C	SL_MES	Hrs	56			5,336		5,336
1	03	05	12			Perform Functional Testing - Movable Collimat	28-Feb-07	13-Mar-07		C	SL_CCA	Hrs	40			2,764		2,764
1	03	05	12			Collect Component Performance Data	14-Mar-07	15-Mar-07		C	SL_ME	Hrs	8			892		892
1	03	05	12			Load Component Data Base	16-Mar-07	19-Mar-07		C	SL_ME	Hrs	8			892		892
1	03	05	12			Post Process & Test	20-Mar-07	2-Apr-07		C	SL_MFAT	Hrs	40			3,454		3,454
1	03	05	12			Define Diagnostics Support Requirements	5-May-05	6-May-05		P	SL_ME	Hrs	4			423		423
1	03	05	12			Create ICD & Update LCLS Database	9-May-05	10-May-05		P	SL_ME	Hrs	4			423		423
1	03	05	12			Develop Preliminary Design - Diagnostic Supports	11-May-05	17-May-05		P	SL_ME	Hrs	8			846		846
1	03	05	12			Develop Preliminary Design - Diagnostic Supports	11-May-05	17-May-05		P	SL_MDD	Hrs	16			1,004		1,004
1	03	05	12			Conduct Preliminary Design Review (PDR)	18-May-05	18-May-05		P	SL_ME	Hrs	2			211		211
1	03	05	12			Conduct Preliminary Design Review (PDR)	18-May-05	18-May-05		P	SL_MDD	Hrs	2			125		125
1	03	05	12			Develop Final Design - Diagnostics Supports	19-May-05	2-Jun-05		P	SL_ME	Hrs	8			846		846
1	03	05	12			Develop Final Design - Diagnostics Supports	19-May-05	2-Jun-05		P	SL_MDD	Hrs	40			2,510		2,510
1	03	05	12			Conduct Final Design Review (FDR)	3-Jun-05	3-Jun-05		P	SL_ME	Hrs	2			211		211
1	03	05	12			Conduct Final Design Review (FDR)	3-Jun-05	3-Jun-05		P	SL_MDD	Hrs	2			125		125
1	03	05	12			Prep Bid Pak - Diagnostics Supports	6-Jun-05	7-Jun-05		P	SL_ME	Hrs	2			211		211
1	03	05	12			Prep Bid Pak - Diagnostics Supports	6-Jun-05	7-Jun-05		P	SL_MDD	Hrs	8			502		502
1	03	05	12			Evaluate Vendor Proposals - Supports	7-Jul-05	12-Jul-05		C	SL_ME	Hrs	8			846		846
1	03	05	12			Vendor Fab 1st Lot - Supports	4-Oct-06	31-Oct-06		C	SA_MSEG	\$\$		10,500			12,075	12,075
1	03	05	12			Procure Misc Materials - Diagnostics Supports	10-Apr-06	5-May-06		C	SL_MSEG	\$\$		700			784	784
1	03	05	12			Perform QC & Inspection - Diagnostic Supports	1-Nov-06	2-Nov-06		C	SL_MES	Hrs	8			762		762
1	03	05	12			Assemble Supports	3-Nov-06	16-Nov-06		C	SL_MFAT	Hrs	120			10,362		10,362

LCLS TPC Detailed Cost Estimate (FY05FY09)

5/5/2005

WBS Level						LCLA DCE March-2005 Description	Early Start	Early Finish	OBS	Fund Type	Res Code	Units	Budgeted Quantity		Fully Burdened and Escalated Cost		
Run Time: 4/22/05 8:43am													Hours	\$\$	Labor	M&S	Total (No Conting)
1	03	05	12			Perform Pre-Installation Qualification - Support	17-Nov-06	22-Nov-06		C	SL_ME	Hrs	8		892		892
1	03	05	13			Safety Dump							602	23,250	51,877	26,738	78,615
1	03	05	13			Receive Single Beam Dump Requirements	10-Jan-07	10-Jan-07		C	SL_ME	Hrs	4		446		446
1	03	05	13			Review & Accept Requirements	11-Jan-07	12-Jan-07		C	SL_ME	Hrs	4		446		446
1	03	05	13			Write ICD - Single Beam Dump	16-Jan-07	17-Jan-07		C	SL_ME	Hrs	8		892		892
1	03	05	13			Collect Area Specific Requirements	18-Jan-07	23-Jan-07		C	SL_ME	Hrs	8		892		892
1	03	05	13			Collect Area Specific Requirements	18-Jan-07	23-Jan-07		C	SL_MDD	Hrs	32		2,117		2,117
1	03	05	13			Evaluate Existing Design Documentation	24-Jan-07	29-Jan-07		C	SL_ME	Hrs	8		892		892
1	03	05	13			Evaluate Existing Design Documentation	24-Jan-07	29-Jan-07		C	SL_MDD	Hrs	16		1,059		1,059
1	03	05	13			Produce Common Layout	30-Jan-07	2-Feb-07		C	SL_MDD	Hrs	16		1,059		1,059
1	03	05	13			Develop General Specifications / Analysis	5-Feb-07	8-Feb-07		C	SL_ME	Hrs	16		1,784		1,784
1	03	05	13			Create / Remodel / Revise Dsn Documentation	9-Feb-07	23-Feb-07		C	SL_MDD	Hrs	80		5,294		5,294
1	03	05	13			Make Simplified Models	26-Feb-07	27-Feb-07		C	SL_MDD	Hrs	4		265		265
1	03	05	13			Release Final Model To Server	28-Feb-07	1-Mar-07		C	SL_MDD	Hrs	4		265		265
1	03	05	13			Update Component Data Base	2-Mar-07	5-Mar-07		C	SL_ME	Hrs	4		446		446
1	03	05	13			Write Component Traveler	6-Mar-07	7-Mar-07		C	SL_ME	Hrs	8		892		892
1	03	05	13			Prepare for PDR - Single Beam Dump	8-Mar-07	8-Mar-07		C	SL_ME	Hrs	2		223		223
1	03	05	13			Prepare for PDR - Single Beam Dump	8-Mar-07	8-Mar-07		C	SL_MDD	Hrs	4		265		265
1	03	05	13			Conduct Single Beam Dump PDR	9-Mar-07	9-Mar-07		C	SL_ME	Hrs	2		223		223
1	03	05	13			Conduct Single Beam Dump PDR	9-Mar-07	9-Mar-07		C	SL_MDD	Hrs	2		132		132
1	03	05	13			Generate Detailed Procurement Plan	12-Mar-07	12-Mar-07		C	SL_ME	Hrs	4		446		446
1	03	05	13			Establish Subordinate Work Orders	13-Mar-07	13-Mar-07		C	SL_ME	Hrs	4		446		446
1	03	05	13			Prepare for FDR - Single Beam Dump	14-Mar-07	14-Mar-07		C	SL_ME	Hrs	2		223		223
1	03	05	13			Prepare for FDR - Single Beam Dump	14-Mar-07	14-Mar-07		C	SL_MDD	Hrs	4		265		265
1	03	05	13			Conduct Single Beam Dump FDR	15-Mar-07	15-Mar-07		C	SL_ME	Hrs	2		223		223
1	03	05	13			Conduct Single Beam Dump FDR	15-Mar-07	15-Mar-07		C	SL_MDD	Hrs	2		132		132
1	03	05	13			Prep Bid Pak - Safety Dump	16-Mar-07	16-Mar-07		C	SL_ME	Hrs	4		446		446
1	03	05	13			Prep Bid Pak - Safety Dump	16-Mar-07	16-Mar-07		C	SL_MDD	Hrs	4		265		265
1	03	05	13			Evaluate Vendor Proposals	16-Apr-07	19-Apr-07		C	SL_ME	Hrs	16		1,784		1,784
1	03	05	13			Vendor Fab 1st Lot	23-Apr-07	18-May-07		C	SA_MSEG	\$\$		20,000		23,000	23,000
1	03	05	13			Procure Component Material - Single Beam Dump	16-Mar-07	10-May-07		C	SL_MSEG	\$\$		1,000		1,150	1,150
1	03	05	13			Component Fab & Assembly - Single Beam Dump	21-May-07	17-Jul-07		C	SL_MFPC	Hrs	-		-		-
1	03	05	13			Component Fab & Assembly - Single Beam Dump	21-May-07	17-Jul-07		C	SL_MFMS	Hrs	24		2,541		2,541
1	03	05	13			Component Fab & Assembly - Single Beam Dump	21-May-07	17-Jul-07		C	SL_MFAT	Hrs	80		6,908		6,908
1	03	05	13			Perform QC / Metrology	18-Jul-07	23-Jul-07		C	SL_MES	Hrs	16		1,524		1,524
1	03	05	13			Collect Component Performance Data	24-Jul-07	25-Jul-07		C	SL_ME	Hrs	8		892		892
1	03	05	13			Load Component Data Base	26-Jul-07	27-Jul-07		C	SL_ME	Hrs	8		892		892
1	03	05	13			Post Process & Test	30-Jul-07	10-Aug-07		C	SL_MFAT	Hrs	40		3,454		3,454
1	03	05	13			Define Diagnostics Support Requirements	16-Mar-07	19-Mar-07		C	SL_ME	Hrs	4		446		446
1	03	05	13			Create ICD & Update LCLS Database	20-Mar-07	21-Mar-07		C	SL_ME	Hrs	4		446		446
1	03	05	13			Develop Preliminary Design - Diagnostic Supports	22-Mar-07	28-Mar-07		C	SL_ME	Hrs	8		892		892
1	03	05	13			Develop Preliminary Design - Diagnostic Supports	22-Mar-07	28-Mar-07		C	SL_MDD	Hrs	16		1,059		1,059
1	03	05	13			Conduct Preliminary Design Review (PDR)	29-Mar-07	29-Mar-07		C	SL_ME	Hrs	2		223		223
1	03	05	13			Conduct Preliminary Design Review (PDR)	29-Mar-07	29-Mar-07		C	SL_MDD	Hrs	2		132		132
1	03	05	13			Develop Final Design - Diagnostics Supports	30-Mar-07	12-Apr-07		C	SL_ME	Hrs	8		892		892
1	03	05	13			Develop Final Design - Diagnostics Supports	30-Mar-07	12-Apr-07		C	SL_MDD	Hrs	40		2,647		2,647
1	03	05	13			Conduct Final Design Review (FDR)	13-Apr-07	13-Apr-07		C	SL_ME	Hrs	2		223		223
1	03	05	13			Conduct Final Design Review (FDR)	13-Apr-07	13-Apr-07		C	SL_MDD	Hrs	2		132		132
1	03	05	13			Prep Bid Pak - Diagnostics Supports	16-Apr-07	17-Apr-07		C	SL_ME	Hrs	2		223		223
1	03	05	13			Prep Bid Pak - Diagnostics Supports	16-Apr-07	17-Apr-07		C	SL_MDD	Hrs	8		529		529
1	03	05	13			Evaluate Vendor Proposals - Supports	16-May-07	21-May-07		C	SL_ME	Hrs	8		892		892
1	03	05	13			Vendor Fab 1st Lot - Supports	23-May-07	20-Jun-07		C	SA_MSEG	\$\$		2,000		2,300	2,300
1	03	05	13			Procure Misc Materials - Diagnostics Supports	16-Apr-07	11-May-07		C	SL_MSEG	\$\$		250		288	288
1	03	05	13			Perform QC & Inspection - Diagnostic Supports	21-Jun-07	22-Jun-07		C	SL_MES	Hrs	8		762		762
1	03	05	13			Assemble Supports	25-Jun-07	9-Jul-07		C	SL_MFAT	Hrs	40		3,454		3,454
1	03	05	13			Perform Pre-Installation Qualification - Support	10-Jul-07	13-Jul-07		C	SL_ME	Hrs	8		892		892
1	03	06				Linac RF Subsystem							21,362	1,456,500	2,049,304	1,619,077	3,668,381
1	03	06	01			S-Band Low Level System											
1	03	06	02			S-Band High Power System							3,780	479,500	344,366	531,383	875,749
1	03	06	02			Design Typical LLRF Coupling Linac Replacement	15-Mar-05	15-Mar-05		P	SL_KE	Hrs	8		900		900
1	03	06	02			Prepare for Final Design Review (FDR)	16-Mar-05	16-Mar-05		P	SL_KE	Hrs	8		900		900
1	03	06	02			Conduct S-Band Low Level FDR	17-Mar-05	17-Mar-05		P	SL_KE	Hrs	8		900		900
1	03	06	02			Generate Detailed Procurement Plan	18-Mar-05	22-Mar-05		P	SL_KE	Hrs	4		450		450
1	03	06	02			Procure Coupler Connectors	13-Apr-05	7-Jul-05		L	SL_MSEG	\$\$		1,000		1,090	1,090

LCLS TPC Detailed Cost Estimate (FY05FY09)

5/5/2005

WBS Level						LCLA DCE March-2005 Description	Early Start	Early Finish	OBS	Fund Type	Res Code	Units	Budgeted Quantity		Fully Burdened and Escalated Cost		
Run Time: 4/22/05 8:43am													Hours	\$\$	Labor	M&S	Total (No Conting)
1	03	06	02			Cold Test & Fab - S-Band Low Level Equipment	8-Jul-05	21-Jul-05		L	SL_KE	Hrs	8		900		900
1	03	06	02			Document Existing Coupler	16-Mar-05	12-Apr-05		L	SL_MDD	Hrs	80		5,019		5,019
1	03	06	02			Purchase Coupler Materials (5)	18-Mar-05	12-May-05		L	SL_MSEG	\$\$		5,000		5,450	5,450
1	03	06	02			Design Coupler Spool	13-Apr-05	10-May-05		L	SL_MDD	Hrs	120		7,529		7,529
1	03	06	02			Fabricate Coupler Spools (5)	13-May-05	26-May-05		L	SL_MFMS	Hrs	80		8,031		8,031
1	03	06	02			Design Input WG Modifications	11-May-05	7-Jul-05		L	SL_MDD	Hrs	200		12,548		12,548
1	03	06	02			Assemble Coupler Spools (5)	27-May-05	10-Jun-05		L	SL_MFAT	Hrs	120		9,824		9,824
1	03	06	02			Purchase Input Materials (2)	18-Mar-05	12-May-05		L	SL_MSEG	\$\$		4,000		4,360	4,360
1	03	06	02			Fabricate Input WG (2)	13-May-05	26-May-05		L	SL_MFMS	Hrs	40		4,016		4,016
1	03	06	02			Assemble Input WG (2)	27-May-05	10-Jun-05		L	SL_MFAT	Hrs	100		8,187		8,187
1	03	06	02			Review Waveguide Design Reqmts	11-Jan-05	25-Jan-05		P	SL_KE	Hrs	24		2,700		2,700
1	03	06	02			Design S-Band Waveguide	26-Jan-05	20-Apr-05		P	SL_ME	Hrs	48		5,074		5,074
1	03	06	02			Design S-Band Waveguide	26-Jan-05	20-Apr-05		P	SL_MDD	Hrs	480		30,115		30,115
1	03	06	02			Design WG Supports	21-Apr-05	4-May-05		P	SL_MDD	Hrs	40		2,510		2,510
1	03	06	02			Prepare for Prelim Design Review (PDR)	5-May-05	9-May-05		P	SL_ME	Hrs	8		846		846
1	03	06	02			Conduct Prelim Design Rev - S-Band HP WG System	10-May-05	10-May-05		P	SL_ME	Hrs	8		846		846
1	03	06	02			Generate Detailed Procurement Plan	11-May-05	11-May-05		P	SL_ME	Hrs	4		423		423
1	03	06	02			Create Cold Test Plan	12-May-05	18-May-05		P	SL_ME	Hrs	40		4,228		4,228
1	03	06	02			Establish Subordinate Work Orders	19-May-05	19-May-05		P	SL_ME	Hrs	4		423		423
1	03	06	02			Prepare for Final Design Review (FDR)	20-May-05	24-May-05		P	SL_ME	Hrs	8		846		846
1	03	06	02			Conduct Final Design Rev - S-Band HP WG System	25-May-05	25-May-05		P	SL_ME	Hrs	8		846		846
1	03	06	02			Prep Bid Pak - Skarpass Flanges	26-May-05	9-Jun-05		P	SL_ME	Hrs	8		846		846
1	03	06	02			Evaluate Vendor Proposals	24-Jun-05	8-Jul-05		P	SL_ME	Hrs	40		4,228		4,228
1	03	06	02			Vendor Fab - Skarpass Flanges	4-Oct-05	12-Jan-06		C	SA_MSEG	\$\$		65,000		72,800	72,800
1	03	06	02			Evaluate Vendor Proposals	15-Jul-05	28-Jul-05		P	SL_ME	Hrs	40		4,228		4,228
1	03	06	02			Vendor Fab & Assy - S-Band Waveguide	18-Aug-05	28-Nov-05		L	SA_MSEG	\$\$		375,000		415,018	415,018
1	03	06	02			Procure Waveguide Cooling	26-May-05	5-Aug-05		P	SL_MSEG	\$\$		12,500		13,625	13,625
1	03	06	02			Procure Assembly Hardware	3-Oct-05	28-Oct-05		C	SL_MSEG	\$\$		17,000		19,040	19,040
1	03	06	02			Fab & Cold Test - Cold Test Hardware	13-Jan-06	20-Mar-06		C	SL_MFMS	Hrs	80		8,256		8,256
1	03	06	02			Fab & Cold Test - Cold Test Hardware	13-Jan-06	20-Mar-06		C	SL_KE	Hrs	40		4,626		4,626
1	03	06	02			Fab & Cold Test - Waveguide Straights	21-Feb-06	1-May-06		C	SL_MFPC	Hrs	20		3,295		3,295
1	03	06	02			Fab & Cold Test - Waveguide Straights	21-Feb-06	1-May-06		C	SL_MFMS	Hrs	480		49,536		49,536
1	03	06	02			Fab & Cold Test - Waveguide Straights	21-Feb-06	1-May-06		C	SL_KE	Hrs	40		4,626		4,626
1	03	06	02			Fab & Cold Test - Waveguide Components	4-Apr-06	13-Jun-06		C	SL_MFPC	Hrs	100		16,476		16,476
1	03	06	02			Fab & Cold Test - Waveguide Components	4-Apr-06	13-Jun-06		C	SL_MFMS	Hrs	720		74,304		74,304
1	03	06	02			Fab & Cold Test - Waveguide Components	4-Apr-06	13-Jun-06		C	SL_MFAT	Hrs	500		42,080		42,080
1	03	06	02			Fab & Cold Test - Waveguide Components	4-Apr-06	13-Jun-06		C	SL_KT	Hrs	40		2,534		2,534
1	03	06	02			Fab & Cold Test - Waveguide Components	4-Apr-06	13-Jun-06		C	SL_KE	Hrs	40		4,626		4,626
1	03	06	02			Fab & Test - Waveguide Supports	14-Jun-06	19-Jul-06		C	SL_MFMS	Hrs	30		3,096		3,096
1	03	06	02			Collect Component Performance Data	20-Jul-06	26-Jul-06		C	SL_ME	Hrs	8		869		869
1	03	06	02			Load Component Data Base	20-Jul-06	26-Jul-06		C	SL_ME	Hrs	8		869		869
1	03	06	02			Receive System / Sub Assemblies	27-Jul-06	27-Jul-06		C	SL_ME	Hrs	8		869		869
1	03	06	02			Post Process Waveguide	28-Jul-06	8-Sep-06		C	SL_MFAT	Hrs	130		10,941		10,941
1	03	06	03			S-Band Structures							408	-	36,385	-	36,385
1	03	06	03			RF Evaluation of 9.5ft Structures & Strongbacks	16-May-05	27-May-05		L	SL_KE	Hrs	20		2,250		2,250
1	03	06	03			Design Strongback Girder Supports	31-May-05	13-Jun-05		L	SL_MDD	Hrs	40		2,510		2,510
1	03	06	03			Design TV Section Supports	14-Jun-05	20-Jun-05		L	SL_MDD	Hrs	80		5,019		5,019
1	03	06	03			Prepare for Prelim Design Review (PDR)	21-Jun-05	23-Jun-05		L	SL_ME	Hrs	8		846		846
1	03	06	03			Conduct Prelim Design Review (PDR) - S Bnd Struc	24-Jun-05	24-Jun-05		L	SL_ME	Hrs	8		846		846
1	03	06	03			Generate Detailed Procurement Plan	27-Jun-05	27-Jun-05		L	SL_ME	Hrs	4		423		423
1	03	06	03			Create Cold Test Plan	28-Jun-05	5-Jul-05		L	SL_KE	Hrs	8		900		900
1	03	06	03			Establish Subordinate Work Orders	6-Jul-05	6-Jul-05		L	SL_ME	Hrs	8		846		846
1	03	06	03			Prepare for Final Design Review (FDR)	7-Jul-05	11-Jul-05		L	SL_ME	Hrs	8		846		846
1	03	06	03			Conduct Final Design Review (FDR) - S Bnd Struc	12-Jul-05	12-Jul-05		L	SL_ME	Hrs	8		846		846
1	03	06	03			Bead Pull Structures	13-Jul-05	2-Aug-05		L	SL_KT	Hrs	40		2,465		2,465
1	03	06	03			Bead Pull Structures	13-Jul-05	2-Aug-05		L	SL_KE	Hrs	40		4,500		4,500
1	03	06	03			Fabricate 9.5ft Supports	3-Aug-05	9-Aug-05		L	SL_MFPC	Hrs	24		3,847		3,847
1	03	06	03			Fabricate 9.5ft Supports	3-Aug-05	9-Aug-05		L	SL_MFMS	Hrs	24		2,409		2,409
1	03	06	03			Fabricate 9.5ft Supports	3-Aug-05	9-Aug-05		L	SL_MFAT	Hrs	24		1,965		1,965
1	03	06	03			Collect Component Performance Data	10-Aug-05	16-Aug-05		L	SL_KE	Hrs	8		900		900
1	03	06	03			Load Component Data Base	17-Aug-05	23-Aug-05		L	SL_ME	Hrs	8		846		846
1	03	06	03			Receive System / Sub Assemblies	24-Aug-05	24-Aug-05		L	SL_ME	Hrs	8		846		846
1	03	06	03			Post Process 9.5 ft Structures	25-Aug-05	15-Sep-05		L	SL_MFAT	Hrs	40		3,275		3,275
1	03	06	04			X-Band Low Level System							652	178,000	61,784	197,205	258,989

LCLS TPC Detailed Cost Estimate (FY05FY09)

5/5/2005

WBS Level						LCLA DCE March-2005 Description	Early Start	Early Finish	OBS	Fund Type	Res Code	Units	Budgeted Quantity		Fully Burdened and Escalated Cost			
Run Time: 4/22/05 8:43am													Hours	\$	Labor	M&S	Total (No Conting)	
1	03	06	04	5	6	Review & Accept Requirements	3-Jan-05	3-Jan-05		P	SL_KE	Hrs	8			900		900
1	03	06	04			Write X-Band LLRF ICD	4-Jan-05	6-Jan-05		P	SL_KE	Hrs	20			2,250		2,250
1	03	06	04			Design X-Band LLRF System	7-Feb-05	1-Mar-05		P	SL_KE	Hrs	128			14,401		14,401
1	03	06	04			Conduct Prelim Dsgn Review (PDR) - X Bnd LL Sys	2-Mar-05	2-Mar-05		P	SL_KE	Hrs	32			3,600		3,600
1	03	06	04			Design X-Band LLRF System	3-Mar-05	24-Mar-05		P	SL_KE	Hrs	128			14,401		14,401
1	03	06	04			Conduct Final Design Review (FDR) - X Bnd LL Sys	25-Mar-05	25-Mar-05		P	SL_KE	Hrs	32			3,600		3,600
1	03	06	04			Prep Bid Pak - X-Band Analyzer	28-Mar-05	8-Apr-05		P	SL_KE	Hrs	8			900		900
1	03	06	04			Evaluate Vendor Proposals	25-Apr-05	6-May-05		P	SL_KE	Hrs	8			900		900
1	03	06	04			Vendor Fab & Assy - X-Band Analyzer	10-May-05	2-Jun-06		L	SA_MSEG	\$\$		100,000			110,835	110,835
1	03	06	04			Prep Bid Pak - X-Band TWT Driver	28-Mar-05	8-Apr-05		P	SL_KE	Hrs	8			900		900
1	03	06	04			Evaluate Vendor Proposals	25-Apr-05	6-May-05		P	SL_KE	Hrs	8			900		900
1	03	06	04			Vendor Fab & Assy - X-Band TWT Driver	10-May-05	2-Jun-06		L	SA_MSEG	\$\$		30,000			33,250	33,250
1	03	06	04			Prep Bid Pak - X-Band Phase & Amp Dectector	28-Mar-05	8-Apr-05		P	SL_KE	Hrs	8			900		900
1	03	06	04			Evaluate Vendor Proposals	25-Apr-05	6-May-05		P	SL_KE	Hrs	8			900		900
1	03	06	04			Vendor Fab & Assy - X-Band Phase & Amp Dectector	10-May-05	2-Jun-06		L	SA_MSEG	\$\$		25,000			27,709	27,709
1	03	06	04			Procure X-Band 4 X Multiplier	28-Mar-05	19-Apr-06		L	SL_MSEG	\$\$		10,000			11,048	11,048
1	03	06	04			Procure X-Band RF Cables	28-Mar-05	19-Apr-06		L	SL_MSEG	\$\$		2,000			2,210	2,210
1	03	06	04			Procure X-Band Stripline Couplers	28-Mar-05	19-Apr-06		L	SL_MSEG	\$\$		4,000			4,419	4,419
1	03	06	04			Procure X-Band Chassis	28-Mar-05	19-Apr-06		L	SL_MSEG	\$\$		2,000			2,210	2,210
1	03	06	04			Procure X-Band Drive Monitoring	28-Mar-05	19-Apr-06		L	SL_MSEG	\$\$		5,000			5,524	5,524
1	03	06	04			Assemble X-Band LLRF Equipment	1-Sep-06	22-Sep-06		C	SL_KT	Hrs	120			7,601		7,601
1	03	06	04			Test X-Band LLRF Equipment	25-Sep-06	13-Oct-06		C	SL_KT	Hrs	120			7,733		7,733
1	03	06	04			Collect Component Performance Data	16-Oct-06	20-Oct-06		C	SL_KE	Hrs	8			949		949
1	03	06	04			Load Component Data Base	23-Oct-06	27-Oct-06		C	SL_KE	Hrs	8			949		949
1	03	06	05			X-Band High Power System							4,168	309,000		440,871	341,000	781,871
1	03	06	05	01		X-Band HP Klystron							2,388	181,500		272,065	200,455	472,520
1	03	06	05	01		Review & Accept Requirements	19-Jan-05	19-Jan-05		P	SL_KE	Hrs	8			900		900
1	03	06	05	01		Write Klystron ICD	20-Jan-05	21-Jan-05		P	SL_KE	Hrs	16			1,800		1,800
1	03	06	05	01		Modify Klystron Design	24-Jan-05	4-Feb-05		P	SL_KE	Hrs	16			1,800		1,800
1	03	06	05	01		Design Klystron Mount	24-Jan-05	21-Mar-05		P	SL_KE	Hrs	200			22,502		22,502
1	03	06	05	01		Design Klystron Gallery Tank	24-Jan-05	18-Feb-05		P	SL_KE	Hrs	80			9,001		9,001
1	03	06	05	01		Conduct Prelim Design Review (PDR) - X Bnd HP Ky	22-Mar-05	28-Mar-05		P	SL_KE	Hrs	8			900		900
1	03	06	05	01		Create Cold Test Plan	29-Mar-05	4-Apr-05		P	SL_KE	Hrs	40			4,500		4,500
1	03	06	05	01		Establish Subordinate Work Orders	5-Apr-05	5-Apr-05		P	SL_KE	Hrs	4			450		450
1	03	06	05	01		Conduct Final Design Review (FDR) - X Bnd HP Ky	6-Apr-05	6-Apr-05		P	SL_KE	Hrs	8			900		900
1	03	06	05	01		Engineer Klystron System Window	24-Jan-05	4-Feb-05		P	SL_KE	Hrs	40			4,500		4,500
1	03	06	05	01		Design Klystron System Window	7-Feb-05	28-Feb-05		P	SL_MDD	Hrs	120			7,529		7,529
1	03	06	05	01		Prep Bid Pak - X-Band Klystron	7-Apr-05	13-Apr-05		P	SL_MDD	Hrs	16			1,004		1,004
1	03	06	05	01		Evaluate Vendor Proposals - Klystron System	28-Apr-05	4-May-05		P	SL_MDD	Hrs	16			1,004		1,004
1	03	06	05	01		Vendor Fab & Assy - X-Band Klystrons	6-May-05	7-Mar-06		L	SA_MSEG	\$\$		175,000			193,296	193,296
1	03	06	05	01		Procure Mounting Support	7-Apr-05	3-Feb-06		L	SL_MSEG	\$\$		6,500			7,159	7,159
1	03	06	05	01		Fab & Assemble X-Band Klystron	8-Mar-06	20-Oct-06		C	SL_MFPC	Hrs	800			132,130		132,130
1	03	06	05	01		Fab & Assemble X-Band Klystron	8-Mar-06	20-Oct-06		C	SL_KT	Hrs	280			17,779		17,779
1	03	06	05	01		Fab & Assemble X-Band Klystron	8-Mar-06	20-Oct-06		C	SL_KE	Hrs	160			18,551		18,551
1	03	06	05	01		Fab & Assemble X-Band Klystron	8-Mar-06	20-Oct-06		C	SL_KCA	Hrs	200			13,505		13,505
1	03	06	05	01		Fab & Assemble Mounting Support	6-Feb-06	10-Feb-06		C	SL_KT	Hrs	40			2,534		2,534
1	03	06	05	01		Fab & Assemble System Window	8-Mar-06	28-Mar-06		C	SL_MFAT	Hrs	120			10,099		10,099
1	03	06	05	01		Test System Window	29-Mar-06	11-Apr-06		C	SL_MFAT	Hrs	80			6,733		6,733
1	03	06	05	01		Collect Component Performance Data	12-Apr-06	13-Apr-06		C	SL_KE	Hrs	8			925		925
1	03	06	05	01		Load Component Data Base	14-Apr-06	17-Apr-06		C	SL_KE	Hrs	8			925		925
1	03	06	05	01		Dress Klystron	23-Oct-06	27-Oct-06		C	SL_KT	Hrs	40			2,600		2,600
1	03	06	05	01		Test Klystron System	30-Oct-06	10-Nov-06		C	SL_KE	Hrs	80			9,494		9,494
1	03	06	05	02		X-Band HP Modulator							720	83,500		61,639	92,585	154,224
1	03	06	05	02		Review & Accept Requirements	24-Jan-05	24-Jan-05		P	SL_KE	Hrs	20			2,250		2,250
1	03	06	05	02		Write Modulator ICD	23-Feb-05	24-Feb-05		P	SL_KE	Hrs	16			1,800		1,800
1	03	06	05	02		Design Modulator	25-Mar-05	7-Apr-05		P	SL_KE	Hrs	80			9,001		9,001
1	03	06	05	02		Modulator Documentation	8-Apr-05	27-Apr-05		P	SL_MDD	Hrs	120			7,529		7,529
1	03	06	05	02		Conduct Prelim Dsgn Review (PDR) - X Bnd HP Mod	28-Apr-05	4-May-05		P	SL_KE	Hrs	8			900		900
1	03	06	05	02		Create Cold Test Plan	5-May-05	11-May-05		P	SL_KE	Hrs	40			4,500		4,500
1	03	06	05	02		Establish Subordinate Work Orders	12-May-05	12-May-05		P	SL_KE	Hrs	4			450		450
1	03	06	05	02		Conduct Final Design Review (FDR) - X Bnd HP Mod	13-May-05	13-May-05		P	SL_KE	Hrs	16			1,800		1,800
1	03	06	05	02		Procure Tank	16-May-05	8-Jun-06		L	SL_MSEG	\$\$		16,000			17,741	17,741
1	03	06	05	02		Procure Pulsed Transformer	16-May-05	8-Jun-06		L	SL_MSEG	\$\$		20,000			22,176	22,176
1	03	06	05	02		Procure Cap Divider	16-May-05	8-Jun-06		L	SL_MSEG	\$\$		2,500			2,772	2,772

LCLS TPC Detailed Cost Estimate (FY05FY09)

5/5/2005

WBS Level						LCLA DCE March-2005 Description	Early Start	Early Finish	OBS	Fund Type	Res Code	Units	Budgeted Quantity		Fully Burdened and Escalated Cost				
Run Time: 4/22/05 8:43am													Hours	\$\$	Labor	M&S	Total (No Conting)		
1	03	06	05	02	6	Procure Heater Isolation	16-May-05	8-Jun-06		L	SL_MSEG	\$\$			4,000			4,435	4,435
1	03	06	05	02		Procure Toroid & Misc	16-May-05	8-Jun-06		L	SL_MSEG	\$\$			3,000			3,326	3,326
1	03	06	05	02		Procure Interlocks	16-May-05	8-Jun-06		L	SL_MSEG	\$\$			3,000			3,326	3,326
1	03	06	05	02		Procure HV Connectors	16-May-05	8-Jun-06		L	SL_MSEG	\$\$			2,000			2,218	2,218
1	03	06	05	02		Procure Magnet Power Supply	16-May-05	8-Jun-06		L	SL_MSEG	\$\$			28,000			31,047	31,047
1	03	06	05	02		Procure Power Supply Cabling	16-May-05	8-Jun-06		L	SL_MSEG	\$\$			5,000			5,544	5,544
1	03	06	05	02		Assemble Tank	9-Jun-06	15-Jun-06		C	SL_KT	Hrs	40			2,534			2,534
1	03	06	05	02		Assemble Modulator Assembly	16-Jun-06	7-Jul-06		C	SL_KT	Hrs	120			7,601			7,601
1	03	06	05	02		Assemble Modulator Assembly	16-Jun-06	7-Jul-06		C	SL_KE	Hrs	40			4,626			4,626
1	03	06	05	02		Test Modulator Assembly	10-Jul-06	28-Jul-06		C	SL_KT	Hrs	120			7,601			7,601
1	03	06	05	02		Test Modulator Assembly	10-Jul-06	28-Jul-06		C	SL_KE	Hrs	80			9,253			9,253
1	03	06	05	02		Collect Component Performance Data	31-Jul-06	1-Aug-06		C	SL_KE	Hrs	8			925			925
1	03	06	05	02		Load Component Data Base	2-Aug-06	3-Aug-06		C	SL_ME	Hrs	8			869			869
1	03	06	05	03		X-Band HP Waveguide System							1,060	44,000	107,167	47,960	155,127		
1	03	06	05	03		Review & Accept Requirements	25-Feb-05	25-Feb-05		P	SL_KE	Hrs	8			900			900
1	03	06	05	03		Write HP Waveguide System ICD	28-Feb-05	1-Mar-05		P	SL_KE	Hrs	16			1,800			1,800
1	03	06	05	03		Design WG System	2-Mar-05	26-Apr-05		P	SL_KE	Hrs	160			18,002			18,002
1	03	06	05	03		Design WG System Supports	27-Apr-05	8-Jun-05		P	SL_ME	Hrs	120			12,685			12,685
1	03	06	05	03		Conduct Prelim Design Review (PDR) - S Band WG	9-Jun-05	15-Jun-05		P	SL_KE	Hrs	8			900			900
1	03	06	05	03		Release Long Lead Procurements	0-Jan-00	15-Jun-05		P	SL_KE	Hrs	-			-			-
1	03	06	05	03		Create Cold Test Plan	16-Jun-05	22-Jun-05		P	SL_KE	Hrs	40			4,500			4,500
1	03	06	05	03		Establish Subordinate Work Orders	23-Jun-05	23-Jun-05		P	SL_KE	Hrs	4			450			450
1	03	06	05	03		Conduct Final Design Review (FDR) - S Band WG	24-Jun-05	24-Jun-05		P	SL_KE	Hrs	8			900			900
1	03	06	05	03		Procure ION Pumps (8 EA)	27-Jun-05	11-Jul-05		L	SL_MSEG	\$\$			12,000			13,080	13,080
1	03	06	05	03		Procure ION Guage Controller	27-Jun-05	11-Jul-05		L	SL_MSEG	\$\$			3,000			3,270	3,270
1	03	06	05	03		Procure ION Pump Power Supply	27-Jun-05	11-Jul-05		L	SL_MSEG	\$\$			12,000			13,080	13,080
1	03	06	05	03		Procure Waveguide Supports	27-Jun-05	11-Jul-05		L	SL_MSEG	\$\$			3,000			3,270	3,270
1	03	06	05	03		Fab & Test Cold Test Hardware	12-Jul-05	14-Jul-05		L	SL_MDD	Hrs	20			1,255			1,255
1	03	06	05	03		Fab & Test Cold Test Hardware	12-Jul-05	14-Jul-05		L	SL_KE	Hrs	20			2,250			2,250
1	03	06	05	03		Fab, Cold Test & Tune Broadwall Coupler	15-Jul-05	21-Jul-05		L	SL_MFMS	Hrs	80			8,031			8,031
1	03	06	05	03		Fab, Cold Test & Tune Broadwall Coupler	15-Jul-05	21-Jul-05		L	SL_KE	Hrs	40			4,500			4,500
1	03	06	05	03		Fab, Cold Test & Tune Mode Convertor	22-Jul-05	28-Jul-05		L	SL_MFMS	Hrs	40			4,016			4,016
1	03	06	05	03		Fab, Cold Test & Tune Mode Convertor	22-Jul-05	28-Jul-05		L	SL_KT	Hrs	40			2,465			2,465
1	03	06	05	03		Fab, Cold Test & Tune Mode Convertor	22-Jul-05	28-Jul-05		L	SL_KE	Hrs	20			2,250			2,250
1	03	06	05	03		Fab, Cold Test & Tune Circular Waveguide (WR 293)	29-Jul-05	15-Aug-05		L	SL_MFMS	Hrs	100			10,039			10,039
1	03	06	05	03		Fab, Cold Test & Tune Circular Waveguide (WR 293)	29-Jul-05	15-Aug-05		L	SL_KT	Hrs	40			2,465			2,465
1	03	06	05	03		Fab, Cold Test & Tune Circular Waveguide (WR 293)	29-Jul-05	15-Aug-05		L	SL_KE	Hrs	20			2,250			2,250
1	03	06	05	03		Fab, Cold Test & Tune WR90 Waveguide	16-Aug-05	22-Aug-05		L	SL_MFMS	Hrs	40			4,016			4,016
1	03	06	05	03		Fab, Cold Test & Tune WR90 Waveguide	16-Aug-05	22-Aug-05		L	SL_KT	Hrs	40			2,465			2,465
1	03	06	05	03		Fab, Cold Test & Tune WR90 Waveguide	16-Aug-05	22-Aug-05		L	SL_KE	Hrs	20			2,250			2,250
1	03	06	05	03		Waveguide Supports	23-Aug-05	6-Sep-05		L	SL_MFMS	Hrs	80			8,031			8,031
1	03	06	05	03		Assemble System	7-Sep-05	20-Sep-05		L	SL_MSEG	\$\$			14,000			15,260	15,260
1	03	06	05	03		Assemble System	7-Sep-05	20-Sep-05		L	SL_KE	Hrs	80			9,001			9,001
1	03	06	05	03		Collect Component Performance Data	21-Sep-05	22-Sep-05		L	SL_KE	Hrs	8			900			900
1	03	06	05	03		Load Component Data Base	23-Sep-05	26-Sep-05		L	SL_ME	Hrs	8			846			846
1	03	06	06			X-Band Structures							3,230	74,000	285,368	80,660	366,028		
1	03	06	06			Review & Accept Requirements	16-Nov-04	16-Nov-04		P	SL_KE	Hrs	16			1,800			1,800
1	03	06	06			Write Structure ICD	17-Nov-04	19-Nov-04		P	SL_KE	Hrs	20			2,250			2,250
1	03	06	06			Design Input Waveguide	22-Nov-04	7-Dec-04		P	SL_ME	Hrs	20			2,114			2,114
1	03	06	06			Design Input Waveguide	22-Nov-04	7-Dec-04		P	SL_MDD	Hrs	60			3,764			3,764
1	03	06	06			Design Structure Supports	8-Dec-04	2-Feb-05		P	SL_ME	Hrs	10			1,057			1,057
1	03	06	06			Design Structure Supports	8-Dec-04	2-Feb-05		P	SL_MDD	Hrs	240			15,058			15,058
1	03	06	06			Design Collimators	3-Feb-05	9-Feb-05		P	SL_ME	Hrs	16			1,691			1,691
1	03	06	06			Design Collimators	3-Feb-05	9-Feb-05		P	SL_MDD	Hrs	40			2,510			2,510
1	03	06	06			Design Removal Mechanism	10-Feb-05	17-Mar-05		P	SL_ME	Hrs	80			8,457			8,457
1	03	06	06			Design Removal Mechanism	10-Feb-05	17-Mar-05		P	SL_MDD	Hrs	200			12,548			12,548
1	03	06	06			Conduct Fnl Dsn Rev - X-Band Bunch Comp Sys	18-Mar-05	18-Mar-05		P	SL_KE	Hrs	16			1,800			1,800
1	03	06	06			Procure Valves and Misc Hdwr	21-Mar-05	26-Jul-05		L	SL_MSEG	\$\$			74,000			80,660	80,660
1	03	06	06			Fab, Cold Test & Tune WR 90 Tee	21-Mar-05	30-Mar-05		L	SL_MFMS	Hrs	80			8,031			8,031
1	03	06	06			Fab, Cold Test & Tune WR 90 Tee	21-Mar-05	30-Mar-05		L	SL_KT	Hrs	40			2,465			2,465
1	03	06	06			Fab, Cold Test & Tune WR 90 Tee	21-Mar-05	30-Mar-05		L	SL_KE	Hrs	32			3,600			3,600
1	03	06	06			Fab, Cold Test & Tune WR90 Low Power Loads	21-Mar-05	30-Mar-05		L	SL_MFMS	Hrs	80			8,031			8,031
1	03	06	06			Fab, Cold Test & Tune WR90 Low Power Loads	21-Mar-05	30-Mar-05		L	SL_KT	Hrs	8			493			493
1	03	06	06			Fab, Cold Test & Tune WR90 Low Power Loads	21-Mar-05	30-Mar-05		L	SL_KE	Hrs	16			1,800			1,800

LCLS TPC Detailed Cost Estimate (FY05FY09)

5/5/2005

WBS Level						LCLA DCE March-2005 Description	Early Start	Early Finish	OBS	Fund Type	Res Code	Units	Budgeted Quantity		Fully Burdened and Escalated Cost			
Run Time: 4/22/05 8:43am													Hours	\$	Labor	M&S	Total (No Conting)	
1	2	3	4	5	6													
1	03	06	06			Fab Collimators	21-Mar-05	18-Apr-05		L	SL_MFPC	Hrs	20			3,206		3,206
1	03	06	06			Fab Collimators	21-Mar-05	18-Apr-05		L	SL_MFMS	Hrs	80			8,031		8,031
1	03	06	06			Fab Collimators	21-Mar-05	18-Apr-05		L	SL_MFAT	Hrs	40			3,275		3,275
1	03	06	06			Fab Structure Supports	21-Mar-05	25-Mar-05		L	SL_MFMS	Hrs	100			10,039		10,039
1	03	06	06			Fab Structure Supports	21-Mar-05	25-Mar-05		L	SL_MFAT	Hrs	100			8,187		8,187
1	03	06	06			Fab Structure Removal Mechanism	21-Mar-05	8-Apr-05		L	SL_MFMS	Hrs	120			12,047		12,047
1	03	06	06			Fab Structure Removal Mechanism	21-Mar-05	8-Apr-05		L	SL_MFAT	Hrs	40			3,275		3,275
1	03	06	06			Assemble X-Band Structures	27-Jul-05	24-Aug-05		L	SL_MFAT	Hrs	300			24,561		24,561
1	03	06	06			Assemble X-Band Structures	27-Jul-05	24-Aug-05		L	SL_ME	Hrs	40			4,228		4,228
1	03	06	06			Cold Test & Tune Structure (Shop)	25-Aug-05	23-Sep-05		L	SL_MFMS	Hrs	600			60,234		60,234
1	03	06	06			Cold Test & Tune Structure (Shop)	25-Aug-05	23-Sep-05		L	SL_KT	Hrs	400			24,648		24,648
1	03	06	06			Cold Test & Tune Structure (Shop)	25-Aug-05	23-Sep-05		L	SL_KE	Hrs	200			22,502		22,502
1	03	06	06			Test X-Band Structure System	3-Oct-05	10-Mar-06		C	SL_KE	Hrs	160			18,506		18,506
1	03	06	06			Collect Component Performance Data	13-Mar-06	14-Mar-06		C	SL_KE	Hrs	8			925		925
1	03	06	06			Load Component Data Base	15-Mar-06	16-Mar-06		C	SL_ME	Hrs	8			869		869
1	03	06	06			Post Process & Test	17-Mar-06	23-Mar-06		C	SL_MFAT	Hrs	40			3,366		3,366
1	03	06	07			RF Distribution System							9,124	416,000		880,530	468,829	1,349,359
1	03	06	07	01		Modulator Refurbishment							406	72,000		32,162	80,640	112,802
1	03	06	07	01		Create Design Documentation	12-Sep-05	7-Oct-05		P	SL_KE	Hrs	50			5,665		5,665
1	03	06	07	01		Generate Detailed Procurement Plan	10-Oct-05	10-Oct-05		P	SL_KE	Hrs	4			463		463
1	03	06	07	01		Create Test Plan	11-Oct-05	17-Oct-05		P	SL_KE	Hrs	40			4,626		4,626
1	03	06	07	01		Establish Subordinate Work Orders	18-Oct-05	18-Oct-05		P	SL_ME	Hrs	4			435		435
1	03	06	07	01		Prepare for Final Design Review (FDR)	19-Oct-05	20-Oct-05		P	SL_KE	Hrs	8			925		925
1	03	06	07	01		Conduct Final Design Review (FDR) - Mod Refurb	21-Oct-05	21-Oct-05		P	SL_KE	Hrs	4			463		463
1	03	06	07	01		Prep Bid Pak - Thyatron & Parts	24-Oct-05	28-Oct-05		P	SL_KE	Hrs	8			925		925
1	03	06	07	01		Evaluate Vendor Proposals - Thyatron & Parts	14-Nov-05	18-Nov-05		P	SL_KE	Hrs	8			925		925
1	03	06	07	01		Vendor Fab & Assy - Thyatron & Parts	22-Nov-05	20-Mar-06		C	SA_MSEG	\$\$		72,000			80,640	80,640
1	03	06	07	01		RCV: from Vendor - Thyatron & Parts	0-Jan-00	20-Mar-06		C	SL_MSEG	\$\$		-			-	-
1	03	06	07	01		Refurbish Existing Modulators (7ea)	21-Mar-06	15-May-06		C	SL_CT	Hrs	280			17,735		17,735
1	03	06	07	02		Solid State Sub Booster							460	90,000		32,059	100,800	132,859
1	03	06	07	02		Generate Detailed Procurement Plan	12-Sep-05	12-Sep-05		P	SL_KE	Hrs	4			450		450
1	03	06	07	02		Create Test Plan	13-Sep-05	19-Sep-05		P	SL_KE	Hrs	40			4,500		4,500
1	03	06	07	02		Establish Subordinate Work Orders	20-Sep-05	20-Sep-05		P	SL_ME	Hrs	4			423		423
1	03	06	07	02		Prepare for Final Design Review (FDR)	21-Sep-05	22-Sep-05		P	SL_KE	Hrs	8			900		900
1	03	06	07	02		Conduct Final Design Review (FDR) - SS SubBoost	23-Sep-05	23-Sep-05		P	SL_KE	Hrs	4			450		450
1	03	06	07	02		Procure Phase Control Electronics	3-Oct-05	29-Nov-05		C	SL_MSEG	\$\$		45,000			50,400	50,400
1	03	06	07	02		Procure Amplitude Control Electronics	3-Oct-05	29-Nov-05		C	SL_MSEG	\$\$		45,000			50,400	50,400
1	03	06	07	02		Fab & Test Amplifier	30-Nov-05	21-Apr-06		C	SL_KT	Hrs	200			12,668		12,668
1	03	06	07	02		Assemble & Test Sub Booster Systems	24-Apr-06	19-Jun-06		C	SL_KT	Hrs	200			12,668		12,668
1	03	06	07	03		IPA Modifications							140	3,000		11,790	3,360	15,150
1	03	06	07	03		Generate Detailed Procurement Plan	12-Sep-05	12-Sep-05		P	SL_KE	Hrs	4			450		450
1	03	06	07	03		Create Test Plan	13-Sep-05	19-Sep-05		P	SL_KE	Hrs	40			4,500		4,500
1	03	06	07	03		Establish Subordinate Work Orders	20-Sep-05	20-Sep-05		P	SL_ME	Hrs	4			423		423
1	03	06	07	03		Prepare for Final Design Review (FDR)	21-Sep-05	22-Sep-05		P	SL_KE	Hrs	8			900		900
1	03	06	07	03		Conduct Final Design Review (FDR) - IPA Mods	23-Sep-05	23-Sep-05		P	SL_KE	Hrs	4			450		450
1	03	06	07	03		Modify & Test IPA Chasis	3-Oct-05	21-Oct-05		P	SL_MSEG	\$\$		3,000			3,360	3,360
1	03	06	07	03		Modify & Test IPA Chasis	3-Oct-05	21-Oct-05		P	SL_KT	Hrs	80			5,067		5,067
1	03	06	07	04		Controls Interfaces							262	6,000		22,555	6,720	29,275
1	03	06	07	04		Create Design Documentation	13-May-05	10-Jun-05		P	SL_KE	Hrs	50			5,626		5,626
1	03	06	07	04		Create Draft Layouts	13-Jun-05	24-Jun-05		P	SL_MDD	Hrs	20			1,255		1,255
1	03	06	07	04		Prepare for Prelim Design Review (PDR)	27-Jun-05	28-Jun-05		P	SL_KE	Hrs	8			900		900
1	03	06	07	04		Conduct Prelim Design Review (PDR) - Cntrls I/F	29-Jun-05	29-Jun-05		P	SL_KE	Hrs	4			450		450
1	03	06	07	04		Generate Detailed Procurement Plan	30-Jun-05	30-Jun-05		P	SL_KE	Hrs	4			450		450
1	03	06	07	04		Create Test Plan	1-Jul-05	8-Jul-05		P	SL_KE	Hrs	40			4,500		4,500
1	03	06	07	04		Establish Subordinate Work Orders	11-Jul-05	11-Jul-05		P	SL_ME	Hrs	4			423		423
1	03	06	07	04		Prepare for Final Design Review (FDR)	12-Jul-05	13-Jul-05		P	SL_KE	Hrs	8			900		900
1	03	06	07	04		Conduct Final Design Review (FDR) - Cntrls I/F	14-Jul-05	14-Jul-05		P	SL_KE	Hrs	4			450		450
1	03	06	07	04		Fab Cables	3-Oct-05	14-Oct-05		C	SL_KT	Hrs	40			2,534		2,534
1	03	06	07	04		Klystron Controls Interface Installation	17-Oct-05	4-Nov-05		C	SL_MSEG	\$\$		6,000			6,720	6,720
1	03	06	07	04		Klystron Controls Interface Installation	17-Oct-05	4-Nov-05		C	SL_CT	Hrs	80			5,067		5,067
1	03	06	07	05		Beam Phase Length Electronics							582	30,000		53,845	33,600	87,445
1	03	06	07	05		Create Design Documentation	7-Nov-05	6-Dec-05		C	SL_KE	Hrs	250			28,915		28,915
1	03	06	07	05		Create Draft Layouts	7-Dec-05	4-Jan-06		C	SL_MDD	Hrs	140			9,029		9,029
1	03	06	07	05		Prepare for Prelim Design Review (PDR)	5-Jan-06	6-Jan-06		C	SL_KE	Hrs	8			925		925

LCLS TPC Detailed Cost Estimate (FY05FY09)

5/5/2005

WBS Level						LCLA DCE March-2005 Description	Early Start	Early Finish	OBS	Fund Type	Res Code	Units	Budgeted Quantity		Fully Burdened and Escalated Cost			
Run Time: 4/22/05 8:43am													Hours	\$	Labor	M&S	Total (No Conting)	
1	03	06	07	05	6	Conduct Prelim Design Review (PDR) - Bm Phs Elec	9-Jan-06	9-Jan-06		C	SL_KE	Hrs	4			463		463
1	03	06	07	05		Generate Detailed Procurement Plan	10-Jan-06	10-Jan-06		C	SL_KE	Hrs	4			463		463
1	03	06	07	05		Create Test Plan	11-Jan-06	18-Jan-06		C	SL_KE	Hrs	40			4,626		4,626
1	03	06	07	05		Establish Subordinate Work Orders	19-Jan-06	19-Jan-06		C	SL_ME	Hrs	4			435		435
1	03	06	07	05		Prepare for Final Design Review (FDR)	20-Jan-06	23-Jan-06		C	SL_KE	Hrs	8			925		925
1	03	06	07	05		Conduct Final Design Review (FDR) - Bnc Lth Elec	24-Jan-06	24-Jan-06		C	SL_KE	Hrs	4			463		463
1	03	06	07	05		Fab & Test Bunch Length Electronics	25-Jan-06	22-Feb-06		C	SL_MSEG	\$\$		30,000			33,600	33,600
1	03	06	07	05		Fab & Test Bunch Length Electronics	25-Jan-06	22-Feb-06		C	SL_KT	Hrs	120			7,601		7,601
1	03	06	07	06		RF Phase Measurements							1,658	70,000	176,742	77,271	254,013	
1	03	06	07	06		Review & Accept Requirements	3-Jan-05	4-Jan-05		P	SL_KE	Hrs	16			1,800		1,800
1	03	06	07	06		Design X-Band Phase Chasis	5-Jan-05	29-Sep-06		P	SL_KE	Hrs	200			22,857		22,857
1	03	06	07	06		Create Design Documentation	3-Feb-05	3-Mar-05		P	SL_KE	Hrs	250			28,128		28,128
1	03	06	07	06		Create Draft Layouts	4-Mar-05	17-Mar-05		P	SL_MDD	Hrs	140			8,784		8,784
1	03	06	07	06		Prepare for Prelim Design Review (PDR)	18-Mar-05	21-Mar-05		P	SL_KE	Hrs	8			900		900
1	03	06	07	06		Conduct Prelim Design Review (PDR) - RF Phas Mea	22-Mar-05	22-Mar-05		P	SL_KE	Hrs	4			450		450
1	03	06	07	06		Procure, Fab & Test X-Band Chasis Prototype	2-May-05	26-Jul-05		L	SL_MSEG	\$\$		20,000			21,800	21,800
1	03	06	07	06		Procure, Fab & Test X-Band Chasis Prototype	2-May-05	26-Jul-05		L	SL_KE	Hrs	450			50,630		50,630
1	03	06	07	06		Procure,Procure, Fab & Test X-Band PAD Prototype	27-Jul-05	16-Nov-05		L	SL_MSEG	\$\$		30,000			33,071	33,071
1	03	06	07	06		Procure,Procure, Fab & Test X-Band PAD Prototype	27-Jul-05	16-Nov-05		L	SL_KE	Hrs	450			51,214		51,214
1	03	06	07	06		Generate Detailed Procurement Plan	17-Nov-05	17-Nov-05		P	SL_KE	Hrs	4			463		463
1	03	06	07	06		Create Test Plan	18-Nov-05	28-Nov-05		P	SL_KE	Hrs	40			4,626		4,626
1	03	06	07	06		Establish Subordinate Work Orders	29-Nov-05	29-Nov-05		P	SL_ME	Hrs	4			435		435
1	03	06	07	06		Prepare for Final Design Review (FDR)	30-Nov-05	1-Dec-05		P	SL_KE	Hrs	8			925		925
1	03	06	07	06		Conduct Final Design Review (FDR) - RF Phas Mea	2-Dec-05	2-Dec-05		P	SL_KE	Hrs	4			463		463
1	03	06	07	06		Procure, Fab & Test X-Band Chasis	30-Mar-06	14-Apr-06		L	SL_MSEG	\$\$		20,000			22,400	22,400
1	03	06	07	06		Procure, Fab & Test X-Band Chasis	30-Mar-06	14-Apr-06		L	SL_KT	Hrs	80			5,067		5,067
1	03	06	07	07		RF Distribution L2 & L3							1,798	75,000	151,490	85,938	237,428	
1	03	06	07	07		Review & Accept Requirements	10-Apr-06	11-Apr-06		C	SL_KE	Hrs	16			1,851		1,851
1	03	06	07	07		Design RF Distribution System	12-Apr-06	16-May-06		C	SL_KE	Hrs	40			4,626		4,626
1	03	06	07	07		Create Design Documentation	17-May-06	14-Jun-06		C	SL_KE	Hrs	10			1,157		1,157
1	03	06	07	07		Create Draft Layouts	15-Jun-06	28-Jun-06		C	SL_MDD	Hrs	40			2,580		2,580
1	03	06	07	07		Prepare for Prelim Design Review (PDR)	29-Jun-06	30-Jun-06		C	SL_KE	Hrs	8			925		925
1	03	06	07	07		Conduct Prelim Design Review (PDR) - RF Dist	3-Jul-06	3-Jul-06		C	SL_KE	Hrs	4			463		463
1	03	06	07	07		Controls Configuration Assessment	5-Jul-06	18-Jul-06		C	SL_CE	Hrs	40			4,626		4,626
1	03	06	07	07		Design RF Dist PRL Coaxial Water System	5-Jul-06	18-Jul-06		C	SL_MDD	Hrs	80			5,159		5,159
1	03	06	07	07		Design RF Dist PRL Coaxial Water System	5-Jul-06	18-Jul-06		C	SL_KE	Hrs	20			2,313		2,313
1	03	06	07	07		Proc, Fab & Test 2W Distribution Amp - Prototype	19-Jul-06	11-Oct-06		C	SL_MSEG	\$\$		12,000			13,488	13,488
1	03	06	07	07		Proc, Fab & Test 2W Distribution Amp - Prototype	19-Jul-06	11-Oct-06		C	SL_KE	Hrs	480			55,709		55,709
1	03	06	07	07		Generate Detailed Procurement Plan	12-Oct-06	12-Oct-06		C	SL_KE	Hrs	4			475		475
1	03	06	07	07		Create Test Plan	13-Oct-06	19-Oct-06		C	SL_KE	Hrs	40			4,747		4,747
1	03	06	07	07		Establish Subordinate Work Orders	20-Oct-06	20-Oct-06		C	SL_ME	Hrs	4			446		446
1	03	06	07	07		Prepare for Final Design Review (FDR)	23-Oct-06	24-Oct-06		C	SL_KE	Hrs	8			949		949
1	03	06	07	07		Conduct Final Design Review (FDR) - RF Dist	25-Oct-06	25-Oct-06		C	SL_KE	Hrs	4			475		475
1	03	06	07	07		Procure, Fab & Test 2W Distribution Amp (10)	26-Oct-06	6-Feb-07		C	SL_MSEG	\$\$		20,000			23,000	23,000
1	03	06	07	07		Procure, Fab & Test 2W Distribution Amp (10)	26-Oct-06	6-Feb-07		C	SL_KT	Hrs	400			25,996		25,996
1	03	06	07	07		Procure & Install 1km 1/2 Superflex	26-Oct-06	6-Feb-07		C	SL_PCT	Hrs	80			5,199		5,199
1	03	06	07	07		Procure & Install 1km 1/2 Superflex	26-Oct-06	6-Feb-07		C	SL_MSEG	\$\$		20,000			23,000	23,000
1	03	06	07	07		Procure & Install 1km Cable Guides	26-Oct-06	6-Feb-07		C	SL_PCT	Hrs	160			10,398		10,398
1	03	06	07	07		Procure & Install 1km Cable Guides	26-Oct-06	6-Feb-07		C	SL_MSEG	\$\$		10,000			11,500	11,500
1	03	06	07	07		Procure & Install Coaxial Water Lines	26-Oct-06	15-Nov-06		C	SL_PCT	Hrs	80			5,199		5,199
1	03	06	07	07		Procure & Install Coaxial Water Lines	26-Oct-06	15-Nov-06		C	SL_MSEG	\$\$		8,000			9,200	9,200
1	03	06	07	07		Procure & Install Control Cables	26-Oct-06	1-Dec-06		C	SL_PCT	Hrs	160			10,398		10,398
1	03	06	07	07		Procure & Install Control Cables	26-Oct-06	1-Dec-06		C	SL_MSEG	\$\$		5,000			5,750	5,750
1	03	06	07	07		Install Cooling System	7-Feb-07	15-Feb-07		C	SL_PCT	Hrs	40			2,600		2,600
1	03	06	07	07		2W Distribution Amp Install (10)	16-Feb-07	9-Mar-07		C	SL_PCT	Hrs	80			5,199		5,199
1	03	06	07	08		Experimentors F.O. RF Electronics							1,518	70,000	150,671	80,500	231,171	
1	03	06	07	08		Review & Accept Requirements	3-Oct-06	4-Oct-06		C	SL_KE	Hrs	16			1,899		1,899
1	03	06	07	08		Design Fiber Optic Electronics	5-Oct-06	8-Nov-06		C	SL_KE	Hrs	20			2,373		2,373
1	03	06	07	08		Design Fiber Optic Electronics	5-Oct-06	8-Nov-06		C	SL_CE	Hrs	20			2,373		2,373
1	03	06	07	08		Create Design Documentation	9-Nov-06	15-Dec-06		C	SL_KE	Hrs	50			5,934		5,934
1	03	06	07	08		Create Draft Layouts	9-Nov-06	15-Dec-06		C	SL_MDD	Hrs	20			1,323		1,323
1	03	06	07	08		Prepare for Prelim Design Review (PDR)	2-Jan-07	3-Jan-07		C	SL_KE	Hrs	8			949		949
1	03	06	07	08		Conduct Prelim Design Review (PDR) - RF Elec	4-Jan-07	4-Jan-07		C	SL_KE	Hrs	4			475		475
1	03	06	07	08		Generate Detailed Procurement Plan	5-Jan-07	5-Jan-07		C	SL_KE	Hrs	4			475		475

LCLS TPC Detailed Cost Estimate (FY05FY09)

5/5/2005

WBS Level						LCLA DCE March-2005 Description	Early Start	Early Finish	OBS	Fund Type	Res Code	Units	Budgeted Quantity		Fully Burdened and Escalated Cost			
Run Time: 4/22/05 8:43am													Hours	\$\$	Labor	M&S	Total (No Conting)	
1	03	06	07	08	09	Create Test Plan	8-Jan-07	12-Jan-07		C	SL_KE	Hrs	40			4,747		4,747
1	03	06	07	08		Establish Subordinate Work Orders	16-Jan-07	16-Jan-07		C	SL_ME	Hrs	4			446		446
1	03	06	07	08		Fab & Test RF FO Electronics Prototype	17-Jan-07	9-May-07		C	SL_MSEG	\$\$		12,000			13,800	13,800
1	03	06	07	08		Fab & Test RF FO Electronics Prototype	17-Jan-07	9-May-07		C	SL_CE	Hrs	640			75,949		75,949
1	03	06	07	08		Prepare for Final Design Review (FDR)	10-May-07	11-May-07		C	SL_KE	Hrs	8			949		949
1	03	06	07	08		Conduct Final Design Review (FDR) - RF Elec	14-May-07	14-May-07		C	SL_KE	Hrs	4			475		475
1	03	06	07	08		Fab & Test RF FO Electronics	15-May-07	8-Aug-07		C	SL_MSEG	\$\$		30,000			34,500	34,500
1	03	06	07	08		Fab & Test RF FO Electronics	15-May-07	8-Aug-07		C	SL_CT	Hrs	480			31,195		31,195
1	03	06	07	08		Fiber Optics System Installation	9-Aug-07	20-Sep-07		C	SL_TMUE	Hrs	160			16,251		16,251
1	03	06	07	08		Fiber Optics System Installation	9-Aug-07	20-Sep-07		C	SL_MSEG	\$\$		28,000			32,200	32,200
1	03	06	07	08		Perform RF Electronics Testing	21-Sep-07	2-Jan-08		C	SL_CE	Hrs	40			4,858		4,858
1	03	06	07	09		RF Stability							2,300	-	249,216	-	249,216	
1	03	06	07	09		Review & Accept Requirements	3-Oct-06	4-Oct-06		C	SL_KE	Hrs	16			1,899		1,899
1	03	06	07	09		Design Stability Algorithms	5-Oct-06	8-Nov-06		C	SL_PHSS	Hrs	50			4,887		4,887
1	03	06	07	09		Design Stability Algorithms	5-Oct-06	8-Nov-06		C	SL_KE	Hrs	50			5,934		5,934
1	03	06	07	09		Design Stability Algorithms	5-Oct-06	8-Nov-06		C	SL_CE	Hrs	50			5,934		5,934
1	03	06	07	09		Create Design Documentation	9-Nov-06	8-Dec-06		C	SL_KE	Hrs	10			1,187		1,187
1	03	06	07	09		Create Draft Layouts	11-Dec-06	8-Jan-07		C	SL_MDD	Hrs	20			1,323		1,323
1	03	06	07	09		Prepare for Prelim Design Review (PDR)	9-Jan-07	10-Jan-07		C	SL_PHS	Hrs	8			614		614
1	03	06	07	09		Prepare for Prelim Design Review (PDR)	9-Jan-07	10-Jan-07		C	SL_KE	Hrs	8			949		949
1	03	06	07	09		Prepare for Prelim Design Review (PDR)	9-Jan-07	10-Jan-07		C	SL_CE	Hrs	8			949		949
1	03	06	07	09		Conduct Prelim Design Review (PDR) - RF Stbility	11-Jan-07	11-Jan-07		C	SL_KE	Hrs	4			475		475
1	03	06	07	09		Generate Detailed Procurement Plan	12-Jan-07	12-Jan-07		C	SL_KE	Hrs	4			475		475
1	03	06	07	09		Create Test Plan	16-Jan-07	22-Jan-07		C	SL_KE	Hrs	40			4,747		4,747
1	03	06	07	09		Establish Subordinate Work Orders	23-Jan-07	23-Jan-07		C	SL_ME	Hrs	4			446		446
1	03	06	07	09		Prepare for Final Design Review (FDR)	24-Jan-07	25-Jan-07		C	SL_PHS	Hrs	8			614		614
1	03	06	07	09		Prepare for Final Design Review (FDR)	24-Jan-07	25-Jan-07		C	SL_KE	Hrs	8			949		949
1	03	06	07	09		Prepare for Final Design Review (FDR)	24-Jan-07	25-Jan-07		C	SL_CE	Hrs	8			949		949
1	03	06	07	09		Conduct Final Design Review (FDR) - RF Stability	26-Jan-07	26-Jan-07		C	SL_KE	Hrs	4			475		475
1	03	06	07	09		RF Feedback Measurements	29-Jan-07	2-Jul-07		C	SL_KE	Hrs	1,000			118,670		118,670
1	03	06	07	09		RF Feedback Setup	29-Jan-07	2-Jul-07		C	SL_PHSS	Hrs	1,000			97,740		97,740
1	03	06	07	09		RF Feedback Algorithm Adjustment	29-Jan-07	2-Jul-07		C	SL_CP	Hrs	-			-		-
1	03	07				Linac Installation & Alignment							47,735	652,000	4,267,603	741,046	5,008,649	
1	03	07	01			Linac L01 System Installation & Alignment							4,334	207,000	383,211	231,840	615,051	
1	03	07	01			Procure Installation Hardware	3-Oct-05	7-Apr-06		C	SL_MSEG	\$\$		2,000			2,240	2,240
1	03	07	01			Procure Installation & Alignment Tooling	3-Oct-05	5-Jun-06		C	SL_MSEG	\$\$		200,000			224,000	224,000
1	03	07	01			Kit New Components for Installation	19-Apr-06	16-May-06		C	SL_MFAT	Hrs	40			3,366		3,366
1	03	07	01			Kit New Components for Installation	19-Apr-06	16-May-06		C	SL_ME	Hrs	20			2,173		2,173
1	03	07	01			Develop De-Installation Plan for Existing Equip	8-Apr-05	28-Apr-05		P	SL_PCE	Hrs	40			4,500		4,500
1	03	07	01			Develop De-Installation Plan for Existing Equip	8-Apr-05	28-Apr-05		P	SL_ME	Hrs	40			4,228		4,228
1	03	07	01			Develop De-Installation Plan for Existing Equip	8-Apr-05	28-Apr-05		P	SL_CE	Hrs	40			4,500		4,500
1	03	07	01			De-install Existing Components	1-Aug-06	21-Aug-06		C	SL_TMUE	Hrs	250			24,750		24,750
1	03	07	01			De-install Existing Components	1-Aug-06	21-Aug-06		C	SL_PCCA	Hrs	60			4,042		4,042
1	03	07	01			De-install Existing Components	1-Aug-06	21-Aug-06		C	SL_MFAT	Hrs	250			21,040		21,040
1	03	07	01			De-install Existing Components	1-Aug-06	21-Aug-06		C	SL_ME	Hrs	40			4,347		4,347
1	03	07	01			Determine Disposition of De-installed Components	22-Aug-06	12-Sep-06		C	SL_MFAT	Hrs	200			16,832		16,832
1	03	07	01			Determine Disposition of De-installed Components	22-Aug-06	12-Sep-06		C	SL_ME	Hrs	5			543		543
1	03	07	01			Prep for & Move De-installed Equip to Storage	13-Sep-06	19-Sep-06		C	SL_TMUI	Hrs	60			4,693		4,693
1	03	07	01			Prep for & Move De-installed Equip to Storage	13-Sep-06	19-Sep-06		C	SL_SEL	Hrs	180			8,683		8,683
1	03	07	01			Prep for & Move De-installed Equip to Storage	13-Sep-06	19-Sep-06		C	SL_MSEG	\$\$		5,000			5,600	5,600
1	03	07	01			Establish Alignment Coordinates for B/L Equip	22-Aug-06	24-Aug-06		C	SL_MFAT	Hrs	8			673		673
1	03	07	01			Establish Alignment Coordinates for B/L Equip	22-Aug-06	24-Aug-06		C	SL_MES	Hrs	24			2,229		2,229
1	03	07	01			Establish Alignment Coordinates for B/L Equip	22-Aug-06	24-Aug-06		C	SL_ME	Hrs	4			435		435
1	03	07	01			Install All Racks, Cables, Trays & Test	21-Sep-06	25-Oct-06		C	SL_TMUE	Hrs	1,500			151,276		151,276
1	03	07	01			Install All Racks, Cables, Trays & Test	21-Sep-06	25-Oct-06		C	SL_PCT	Hrs	32			2,065		2,065
1	03	07	01			Install All Racks, Cables, Trays & Test	21-Sep-06	25-Oct-06		C	SL_PCE	Hrs	40			4,713		4,713
1	03	07	01			Install All Racks, Cables, Trays & Test	21-Sep-06	25-Oct-06		C	SL_PCCA	Hrs	40			2,745		2,745
1	03	07	01			Install All Racks, Cables, Trays & Test	21-Sep-06	25-Oct-06		C	SL_CT	Hrs	24			1,549		1,549
1	03	07	01			Install All Racks, Cables, Trays & Test	21-Sep-06	25-Oct-06		C	SL_CE	Hrs	45			5,302		5,302
1	03	07	01			Install All Racks, Cables, Trays & Test	21-Sep-06	25-Oct-06		C	SL_CCA	Hrs	360			24,703		24,703
1	03	07	01			Install S-Band RF Components	21-Sep-06	27-Sep-06		C	SL_MFAT	Hrs	80			6,733		6,733
1	03	07	01			Install S-Band RF Components	21-Sep-06	27-Sep-06		C	SL_KT	Hrs	10			633		633
1	03	07	01			Install S-Band RF Components	21-Sep-06	27-Sep-06		C	SL_KE	Hrs	10			1,157		1,157
1	03	07	01			Install Beamline Components	28-Sep-06	13-Oct-06		C	SL_MFAT	Hrs	360			30,955		30,955

LCLS TPC Detailed Cost Estimate (FY05FY09)

5/5/2005

WBS Level						LCLA DCE March-2005 Description	Early Start	Early Finish	OBS	Fund Type	Res Code	Units	Budgeted Quantity		Fully Burdened and Escalated Cost			
Run Time: 4/22/05 8:43am													Hours	\$\$	Labor	M&S	Total (No Conting)	
1	2	3	4	5	6													
1	03	07	01			Install Beamline Components	28-Sep-06	13-Oct-06		C	SL_ME	Hrs	5			555		555
1	03	07	01			Align Beamline Components to Coordinate System	16-Oct-06	19-Oct-06		C	SL_MFAT	Hrs	8			691		691
1	03	07	01			Align Beamline Components to Coordinate System	16-Oct-06	19-Oct-06		C	SL_MES	Hrs	24			2,287		2,287
1	03	07	01			Magnet Power Interconnect & Test	20-Oct-06	24-Oct-06		C	SL_CT	Hrs	40			2,600		2,600
1	03	07	01			Magnet Power Interconnect & Test	20-Oct-06	24-Oct-06		C	SL_CE	Hrs	5			593		593
1	03	07	01			Magnet Power Interconnect & Test	20-Oct-06	24-Oct-06		C	SL_CCA	Hrs	15			1,037		1,037
1	03	07	01			Controls Interconnect & Test	26-Oct-06	30-Oct-06		C	SL_CT	Hrs	40			2,600		2,600
1	03	07	01			Controls Interconnect & Test	26-Oct-06	30-Oct-06		C	SL_CE	Hrs	5			593		593
1	03	07	01			Controls Interconnect & Test	26-Oct-06	30-Oct-06		C	SL_CCA	Hrs	15			1,037		1,037
1	03	07	01			Interconnect Vacuum System & Test	16-Oct-06	18-Oct-06		C	SL_MFAT	Hrs	75			6,476		6,476
1	03	07	01			Interconnect Vacuum System & Test	16-Oct-06	18-Oct-06		C	SL_ME	Hrs	10			1,115		1,115
1	03	07	01			Interconnect Vacuum System & Test	16-Oct-06	18-Oct-06		C	SL_CT	Hrs	120			7,799		7,799
1	03	07	01			Interconnect Vacuum System & Test	16-Oct-06	18-Oct-06		C	SL_CE	Hrs	2			237		237
1	03	07	01			Interconnect Vacuum System & Test	16-Oct-06	18-Oct-06		C	SL_CCA	Hrs	8			553		553
1	03	07	01			Perform Magnet Power Test	19-Oct-06	20-Oct-06		C	SL_CT	Hrs	40			2,600		2,600
1	03	07	01			Perform Magnet Power Test	19-Oct-06	20-Oct-06		C	SL_CE	Hrs	4			475		475
1	03	07	01			Perform Magnet Power Test	19-Oct-06	20-Oct-06		C	SL_CCA	Hrs	12			829		829
1	03	07	01			Perform Diagnostics Controls Test	23-Oct-06	25-Oct-06		C	SL_CT	Hrs	40			2,600		2,600
1	03	07	01			Perform Diagnostics Controls Test	23-Oct-06	25-Oct-06		C	SL_CE	Hrs	4			475		475
1	03	07	01			Perform Diagnostics Controls Test	23-Oct-06	25-Oct-06		C	SL_CCA	Hrs	12			829		829
1	03	07	01			Test & Tune S Band RF Equipment	26-Oct-06	30-Oct-06		C	SL_KT	Hrs	24			1,560		1,560
1	03	07	01			Test & Tune S Band RF Equipment	26-Oct-06	30-Oct-06		C	SL_KE	Hrs	24			2,848		2,848
1	03	07	01			Coordinate & Check Installation	31-Oct-06	8-Nov-06		C	SL_MFAT	Hrs	20			1,727		1,727
1	03	07	01			Coordinate & Check Installation	31-Oct-06	8-Nov-06		C	SL_ME	Hrs	20			2,230		2,230
1	03	07	02			Linac BC1 System Installation & Alignment							8,376	13,000	716,659	14,560	731,219	
1	03	07	02			Procure Installation Hardware	3-Oct-05	7-Apr-06		C	SL_MSEG	\$\$			4,000		4,480	4,480
1	03	07	02			Procure Installation Tooling	3-Oct-05	5-Jun-06		C	SL_MSEG	\$\$			4,000		4,480	4,480
1	03	07	02			Kit New Components for Installation	19-Apr-06	16-May-06		C	SL_MFAT	Hrs	80			6,733		6,733
1	03	07	02			Kit New Components for Installation	19-Apr-06	16-May-06		C	SL_ME	Hrs	40			4,347		4,347
1	03	07	02			Develop De-Installation Plan for Existing Equip	8-Apr-05	28-Apr-05		P	SL_PCE	Hrs	40			4,500		4,500
1	03	07	02			Develop De-Installation Plan for Existing Equip	8-Apr-05	28-Apr-05		P	SL_ME	Hrs	80			8,457		8,457
1	03	07	02			Develop De-Installation Plan for Existing Equip	8-Apr-05	28-Apr-05		P	SL_CE	Hrs	40			4,500		4,500
1	03	07	02			De-install Existing Components	1-Aug-06	21-Aug-06		C	SL_TMUE	Hrs	250			24,750		24,750
1	03	07	02			De-install Existing Components	1-Aug-06	21-Aug-06		C	SL_PCCA	Hrs	60			4,042		4,042
1	03	07	02			De-install Existing Components	1-Aug-06	21-Aug-06		C	SL_MFAT	Hrs	500			42,080		42,080
1	03	07	02			De-install Existing Components	1-Aug-06	21-Aug-06		C	SL_ME	Hrs	80			8,694		8,694
1	03	07	02			Determine Disposition of De-installed Components	22-Aug-06	12-Sep-06		C	SL_MFAT	Hrs	400			33,664		33,664
1	03	07	02			Determine Disposition of De-installed Components	22-Aug-06	12-Sep-06		C	SL_ME	Hrs	10			1,087		1,087
1	03	07	02			Prep for & Move De-installed Equip to Storage	13-Sep-06	19-Sep-06		C	SL_TMUI	Hrs	120			9,386		9,386
1	03	07	02			Prep for & Move De-installed Equip to Storage	13-Sep-06	19-Sep-06		C	SL_SEL	Hrs	180			8,683		8,683
1	03	07	02			Prep for & Move De-installed Equip to Storage	13-Sep-06	19-Sep-06		C	SL_MSEG	\$\$			5,000		5,600	5,600
1	03	07	02			Establish Alignment Coordinates for B/L Equip	22-Aug-06	24-Aug-06		C	SL_MFAT	Hrs	16			1,347		1,347
1	03	07	02			Establish Alignment Coordinates for B/L Equip	22-Aug-06	24-Aug-06		C	SL_MES	Hrs	48			4,458		4,458
1	03	07	02			Establish Alignment Coordinates for B/L Equip	22-Aug-06	24-Aug-06		C	SL_ME	Hrs	8			869		869
1	03	07	02			Install All Racks, Cables, Trays & Test	21-Sep-06	25-Oct-06		C	SL_TMUE	Hrs	1,500			151,276		151,276
1	03	07	02			Install All Racks, Cables, Trays & Test	21-Sep-06	25-Oct-06		C	SL_PCT	Hrs	16			1,032		1,032
1	03	07	02			Install All Racks, Cables, Trays & Test	21-Sep-06	25-Oct-06		C	SL_PCE	Hrs	20			2,357		2,357
1	03	07	02			Install All Racks, Cables, Trays & Test	21-Sep-06	25-Oct-06		C	SL_PCCA	Hrs	20			1,372		1,372
1	03	07	02			Install All Racks, Cables, Trays & Test	21-Sep-06	25-Oct-06		C	SL_CT	Hrs	24			1,549		1,549
1	03	07	02			Install All Racks, Cables, Trays & Test	21-Sep-06	25-Oct-06		C	SL_CE	Hrs	45			5,302		5,302
1	03	07	02			Install All Racks, Cables, Trays & Test	21-Sep-06	25-Oct-06		C	SL_CCA	Hrs	360			24,703		24,703
1	03	07	02			Install S-Band RF Components	21-Sep-06	27-Sep-06		C	SL_KT	Hrs	20			1,267		1,267
1	03	07	02			Install S-Band RF Components	21-Sep-06	27-Sep-06		C	SL_KE	Hrs	20			2,313		2,313
1	03	07	02			Install Beamline Components	28-Sep-06	18-Oct-06		C	SL_MFAT	Hrs	720			61,962		61,962
1	03	07	02			Install Beamline Components	28-Sep-06	18-Oct-06		C	SL_ME	Hrs	10			1,111		1,111
1	03	07	02			Install Subbooster	20-Jun-06	3-Jul-06		C	SL_KT	Hrs	240			15,202		15,202
1	03	07	02			Align Beamline Components to Coordinate System	19-Oct-06	24-Oct-06		C	SL_MFAT	Hrs	16			1,382		1,382
1	03	07	02			Align Beamline Components to Coordinate System	19-Oct-06	24-Oct-06		C	SL_MES	Hrs	48			4,573		4,573
1	03	07	02			Magnet Power Interconnect & Test	25-Oct-06	27-Oct-06		C	SL_CT	Hrs	80			5,199		5,199
1	03	07	02			Magnet Power Interconnect & Test	25-Oct-06	27-Oct-06		C	SL_CE	Hrs	10			1,187		1,187
1	03	07	02			Magnet Power Interconnect & Test	25-Oct-06	27-Oct-06		C	SL_CCA	Hrs	30			2,073		2,073
1	03	07	02			Controls Interconnect & Test	30-Oct-06	1-Nov-06		C	SL_CT	Hrs	80			5,199		5,199
1	03	07	02			Controls Interconnect & Test	30-Oct-06	1-Nov-06		C	SL_CE	Hrs	10			1,187		1,187
1	03	07	02			Controls Interconnect & Test	30-Oct-06	1-Nov-06		C	SL_CCA	Hrs	30			2,073		2,073

LCLS TPC Detailed Cost Estimate (FY05FY09)

5/5/2005

WBS Level						LCLA DCE March-2005 Description	Early Start	Early Finish	OBS	Fund Type	Res Code	Units	Budgeted Quantity		Fully Burdened and Escalated Cost			
Run Time: 4/22/05 8:43am													Hours	\$	Labor	M&S	Total (No Conting)	
1	2	3	4	5	6													
1	03	07	02			Interconnect Vacuum System & Test	2-Nov-06	6-Nov-06		C	SL_MFAT	Hrs	150			12,953		12,953
1	03	07	02			Interconnect Vacuum System & Test	2-Nov-06	6-Nov-06		C	SL_ME	Hrs	20			2,230		2,230
1	03	07	02			Interconnect Vacuum System & Test	2-Nov-06	6-Nov-06		C	SL_CT	Hrs	240			15,598		15,598
1	03	07	02			Interconnect Vacuum System & Test	2-Nov-06	6-Nov-06		C	SL_CE	Hrs	4			475		475
1	03	07	02			Interconnect Vacuum System & Test	2-Nov-06	6-Nov-06		C	SL_CCA	Hrs	15			1,037		1,037
1	03	07	02			Perform Magnet Power Test	7-Nov-06	8-Nov-06		C	SL_CT	Hrs	80			5,199		5,199
1	03	07	02			Perform Magnet Power Test	7-Nov-06	8-Nov-06		C	SL_CE	Hrs	8			949		949
1	03	07	02			Perform Magnet Power Test	7-Nov-06	8-Nov-06		C	SL_CCA	Hrs	24			1,659		1,659
1	03	07	02			Perform Diagnostics Controls Test	9-Nov-06	13-Nov-06		C	SL_CT	Hrs	80			5,199		5,199
1	03	07	02			Perform Diagnostics Controls Test	9-Nov-06	13-Nov-06		C	SL_CE	Hrs	8			949		949
1	03	07	02			Perform Diagnostics Controls Test	9-Nov-06	13-Nov-06		C	SL_CCA	Hrs	24			1,659		1,659
1	03	07	02			Test & Tune S Band RF Equipment	14-Nov-06	16-Nov-06		C	SL_KT	Hrs	48			3,120		3,120
1	03	07	02			Test & Tune S Band RF Equipment	14-Nov-06	16-Nov-06		C	SL_KE	Hrs	48			5,696		5,696
1	03	07	02			AVAIL: In-tunnel Installation Completed	17-Nov-06	21-Nov-06		C	SL_KT	Hrs	48			3,120		3,120
1	03	07	02			AVAIL: In-tunnel Installation Completed	17-Nov-06	21-Nov-06		C	SL_KE	Hrs	48			5,696		5,696
1	03	07	02			Install X-Band RF Components-Gallery	3-Oct-05	26-Jan-06		C	SL_MFAT	Hrs	480			40,397		40,397
1	03	07	02			Install X-Band RF Components-Gallery	3-Oct-05	26-Jan-06		C	SL_KT	Hrs	240			15,202		15,202
1	03	07	02			Install X-Band RF Components-Gallery	3-Oct-05	26-Jan-06		C	SL_KE	Hrs	80			9,253		9,253
1	03	07	02			Install X-Band RF Components-Tunnel	22-Aug-06	5-Sep-06		C	SL_MFAT	Hrs	480			40,397		40,397
1	03	07	02			Install X-Band RF Components-Tunnel	22-Aug-06	5-Sep-06		C	SL_KT	Hrs	240			15,202		15,202
1	03	07	02			Install X-Band RF Components-Tunnel	22-Aug-06	5-Sep-06		C	SL_KE	Hrs	80			9,253		9,253
1	03	07	02			Test & Tune X Band RF Equipment	29-Nov-06	10-Jan-07		C	SL_KT	Hrs	120			7,799		7,799
1	03	07	02			Test & Tune X Band RF Equipment	29-Nov-06	10-Jan-07		C	SL_KE	Hrs	160			18,987		18,987
1	03	07	02			Coordinate & Check Installation	11-Jan-07	23-Jan-07		C	SL_MFAT	Hrs	40			3,454		3,454
1	03	07	02			Coordinate & Check Installation	11-Jan-07	23-Jan-07		C	SL_ME	Hrs	40			4,460		4,460
1	03	07	02			Install X-Band RF Components-Gallery	13-Nov-06	28-Nov-06		C	SL_MFAT	Hrs	80			6,908		6,908
1	03	07	02			Install X-Band RF Components-Gallery	13-Nov-06	28-Nov-06		C	SL_KT	Hrs	160			10,398		10,398
1	03	07	02			Install X-Band RF Components-Gallery	13-Nov-06	28-Nov-06		C	SL_KE	Hrs	80			9,494		9,494
1	03	07	03			Linac L02 System Installation & Alignment							4,269	9,000	390,407	10,438	400,845	
1	03	07	03			Procure Installation Hardware	8-May-06	7-Mar-07		C	SL_MSEG	\$\$				2,000		2,269
1	03	07	03			Procure Installation Tooling	8-May-06	7-Mar-07		C	SL_MSEG	\$\$				2,000		2,269
1	03	07	03			Kit New Components for Installation	8-Mar-07	4-Apr-07		C	SL_MFAT	Hrs	40			3,454		3,454
1	03	07	03			Kit New Components for Installation	8-Mar-07	4-Apr-07		C	SL_ME	Hrs	20			2,230		2,230
1	03	07	03			Develop De-Installation Plan for Existing Equip	10-Apr-06	28-Apr-06		C	SL_PCE	Hrs	40			4,626		4,626
1	03	07	03			Develop De-Installation Plan for Existing Equip	10-Apr-06	28-Apr-06		C	SL_ME	Hrs	40			4,347		4,347
1	03	07	03			Develop De-Installation Plan for Existing Equip	10-Apr-06	28-Apr-06		C	SL_CE	Hrs	40			4,626		4,626
1	03	07	03			De-install Existing Components	4-Sep-07	24-Sep-07		C	SL_TMUE	Hrs	250			25,393		25,393
1	03	07	03			De-install Existing Components	4-Sep-07	24-Sep-07		C	SL_PCCA	Hrs	60			4,147		4,147
1	03	07	03			De-install Existing Components	4-Sep-07	24-Sep-07		C	SL_MFAT	Hrs	250			21,588		21,588
1	03	07	03			De-install Existing Components	4-Sep-07	24-Sep-07		C	SL_ME	Hrs	40			4,460		4,460
1	03	07	03			Determine Disposition of De-installed Components	25-Sep-07	15-Oct-07		C	SL_MFAT	Hrs	200			17,599		17,599
1	03	07	03			Determine Disposition of De-installed Components	25-Sep-07	15-Oct-07		C	SL_ME	Hrs	5			568		568
1	03	07	03			Prep for & Move De-installed Equip to Storage	16-Oct-07	22-Oct-07		C	SL_TMUI	Hrs	60			4,940		4,940
1	03	07	03			Prep for & Move De-installed Equip to Storage	16-Oct-07	22-Oct-07		C	SL_SEL	Hrs	180			9,140		9,140
1	03	07	03			Prep for & Move De-installed Equip to Storage	16-Oct-07	22-Oct-07		C	SL_MSEG	\$\$				5,000		5,900
1	03	07	03			Establish Alignment Coordinates for B/L Equip	25-Sep-07	27-Sep-07		C	SL_MFAT	Hrs	8			691		691
1	03	07	03			Establish Alignment Coordinates for B/L Equip	25-Sep-07	27-Sep-07		C	SL_MES	Hrs	24			2,287		2,287
1	03	07	03			Establish Alignment Coordinates for B/L Equip	25-Sep-07	27-Sep-07		C	SL_ME	Hrs	4			446		446
1	03	07	03			Install All Racks, Cables, Trays & Test	19-Oct-07	26-Nov-07		C	SL_TMUE	Hrs	1,500			156,315		156,315
1	03	07	03			Install All Racks, Cables, Trays & Test	19-Oct-07	26-Nov-07		C	SL_PCT	Hrs	32			2,134		2,134
1	03	07	03			Install All Racks, Cables, Trays & Test	19-Oct-07	26-Nov-07		C	SL_PCE	Hrs	40			4,870		4,870
1	03	07	03			Install All Racks, Cables, Trays & Test	19-Oct-07	26-Nov-07		C	SL_PCCA	Hrs	40			2,836		2,836
1	03	07	03			Install All Racks, Cables, Trays & Test	19-Oct-07	26-Nov-07		C	SL_CT	Hrs	24			1,600		1,600
1	03	07	03			Install All Racks, Cables, Trays & Test	19-Oct-07	26-Nov-07		C	SL_CE	Hrs	45			5,479		5,479
1	03	07	03			Install All Racks, Cables, Trays & Test	19-Oct-07	26-Nov-07		C	SL_CCA	Hrs	360			25,528		25,528
1	03	07	03			Install S-Band RF Components	19-Oct-07	25-Oct-07		C	SL_KT	Hrs	10			667		667
1	03	07	03			Install S-Band RF Components	19-Oct-07	25-Oct-07		C	SL_KE	Hrs	10			1,218		1,218
1	03	07	03			Install Beamline Components	26-Oct-07	9-Nov-07		C	SL_MFAT	Hrs	360			31,892		31,892
1	03	07	03			Install Beamline Components	26-Oct-07	9-Nov-07		C	SL_ME	Hrs	5			572		572
1	03	07	03			Align Beamline Components to Coordinate System	12-Nov-07	15-Nov-07		C	SL_MFAT	Hrs	8			709		709
1	03	07	03			Align Beamline Components to Coordinate System	12-Nov-07	15-Nov-07		C	SL_MES	Hrs	24			2,346		2,346
1	03	07	03			Magnet Power Interconnect & Test	16-Nov-07	20-Nov-07		C	SL_CT	Hrs	40			2,667		2,667
1	03	07	03			Magnet Power Interconnect & Test	16-Nov-07	20-Nov-07		C	SL_CE	Hrs	5			609		609
1	03	07	03			Magnet Power Interconnect & Test	16-Nov-07	20-Nov-07		C	SL_CCA	Hrs	15			1,064		1,064

LCLS TPC Detailed Cost Estimate (FY05FY09)

5/5/2005

WBS Level						LCLA DCE March-2005 Description	Early Start	Early Finish	OBS	Fund Type	Res Code	Units	Budgeted Quantity		Fully Burdened and Escalated Cost			
Run Time: 4/22/05 8:43am													Hours	\$\$	Labor	M&S	Total (No Conting)	
1	2	3	4	5	6													
1	03	07	03			Controls Interconnect & Test	27-Nov-07	29-Nov-07		C	SL_CT	Hrs	40			2,667		2,667
1	03	07	03			Controls Interconnect & Test	27-Nov-07	29-Nov-07		C	SL_CE	Hrs	20			2,435		2,435
1	03	07	03			Controls Interconnect & Test	27-Nov-07	29-Nov-07		C	SL_CCA	Hrs	15			1,064		1,064
1	03	07	03			Interconnect Vacuum System & Test	12-Nov-07	14-Nov-07		C	SL_MFAT	Hrs	75			6,644		6,644
1	03	07	03			Interconnect Vacuum System & Test	12-Nov-07	14-Nov-07		C	SL_ME	Hrs	10			1,144		1,144
1	03	07	03			Interconnect Vacuum System & Test	12-Nov-07	14-Nov-07		C	SL_CT	Hrs	120			8,002		8,002
1	03	07	03			Interconnect Vacuum System & Test	12-Nov-07	14-Nov-07		C	SL_CE	Hrs	2			244		244
1	03	07	03			Interconnect Vacuum System & Test	12-Nov-07	14-Nov-07		C	SL_CCA	Hrs	8			567		567
1	03	07	03			Perform Magnet Power Test	15-Nov-07	16-Nov-07		C	SL_CT	Hrs	40			2,667		2,667
1	03	07	03			Perform Magnet Power Test	15-Nov-07	16-Nov-07		C	SL_CE	Hrs	4			487		487
1	03	07	03			Perform Magnet Power Test	15-Nov-07	16-Nov-07		C	SL_CCA	Hrs	12			851		851
1	03	07	03			Perform Diagnostics Controls Test	19-Nov-07	21-Nov-07		C	SL_CT	Hrs	40			2,667		2,667
1	03	07	03			Perform Diagnostics Controls Test	19-Nov-07	21-Nov-07		C	SL_CE	Hrs	4			487		487
1	03	07	03			Perform Diagnostics Controls Test	19-Nov-07	21-Nov-07		C	SL_CCA	Hrs	12			851		851
1	03	07	03			Test & Tune S Band RF Equipment	26-Nov-07	28-Nov-07		C	SL_KT	Hrs	24			1,600		1,600
1	03	07	03			Test & Tune S Band RF Equipment	26-Nov-07	28-Nov-07		C	SL_KE	Hrs	24			2,922		2,922
1	03	07	03			Coordinate & Check Installation	29-Nov-07	10-Dec-07		C	SL_MFAT	Hrs	20			1,772		1,772
1	03	07	03			Coordinate & Check Installation	29-Nov-07	10-Dec-07		C	SL_ME	Hrs	20			2,288		2,288
1	03	07	04			Linac BC2 System Installation & Alignment							7,820	9,000	695,899	10,438	706,337	
1	03	07	04			Procure Installation Hardware	8-May-06	7-Mar-07		C	SL_MSEG	\$\$			2,000		2,269	2,269
1	03	07	04			Procure Installation Tooling	8-May-06	7-Mar-07		C	SL_MSEG	\$\$			2,000		2,269	2,269
1	03	07	04			Kit New Components for Installation	8-Mar-07	4-Apr-07		C	SL_MFAT	Hrs	120			10,362		10,362
1	03	07	04			Kit New Components for Installation	8-Mar-07	4-Apr-07		C	SL_ME	Hrs	60			6,689		6,689
1	03	07	04			Develop De-Installation Plan for Existing Equip	10-Apr-06	28-Apr-06		C	SL_PCE	Hrs	40			4,626		4,626
1	03	07	04			Develop De-Installation Plan for Existing Equip	10-Apr-06	28-Apr-06		C	SL_ME	Hrs	120			13,040		13,040
1	03	07	04			Develop De-Installation Plan for Existing Equip	10-Apr-06	28-Apr-06		C	SL_CE	Hrs	40			4,626		4,626
1	03	07	04			De-install Existing Components	4-Sep-07	24-Sep-07		C	SL_TMUE	Hrs	250			25,393		25,393
1	03	07	04			De-install Existing Components	4-Sep-07	24-Sep-07		C	SL_PCCA	Hrs	120			8,293		8,293
1	03	07	04			De-install Existing Components	4-Sep-07	24-Sep-07		C	SL_MFAT	Hrs	750			64,763		64,763
1	03	07	04			De-install Existing Components	4-Sep-07	24-Sep-07		C	SL_ME	Hrs	120			13,379		13,379
1	03	07	04			Determine Disposition of De-installed Components	25-Sep-07	15-Oct-07		C	SL_MFAT	Hrs	600			52,796		52,796
1	03	07	04			Determine Disposition of De-installed Components	25-Sep-07	15-Oct-07		C	SL_ME	Hrs	15			1,704		1,704
1	03	07	04			Prep for & Move De-installed Equip to Storage	16-Oct-07	22-Oct-07		C	SL_TMUI	Hrs	120			9,881		9,881
1	03	07	04			Prep for & Move De-installed Equip to Storage	16-Oct-07	22-Oct-07		C	SL_SEL	Hrs	180			9,140		9,140
1	03	07	04			Prep for & Move De-installed Equip to Storage	16-Oct-07	22-Oct-07		C	SL_MSEG	\$\$			5,000		5,900	5,900
1	03	07	04			Establish Alignment Coordinates for B/L Equip	25-Sep-07	27-Sep-07		C	SL_MFAT	Hrs	24			2,072		2,072
1	03	07	04			Establish Alignment Coordinates for B/L Equip	25-Sep-07	27-Sep-07		C	SL_MES	Hrs	72			6,860		6,860
1	03	07	04			Establish Alignment Coordinates for B/L Equip	25-Sep-07	27-Sep-07		C	SL_ME	Hrs	12			1,338		1,338
1	03	07	04			Install All Racks, Cables, Trays & Test	28-Sep-07	1-Nov-07		C	SL_TMUE	Hrs	1,500			156,157		156,157
1	03	07	04			Install All Racks, Cables, Trays & Test	28-Sep-07	1-Nov-07		C	SL_PCT	Hrs	112			7,461		7,461
1	03	07	04			Install All Racks, Cables, Trays & Test	28-Sep-07	1-Nov-07		C	SL_PCE	Hrs	140			17,028		17,028
1	03	07	04			Install All Racks, Cables, Trays & Test	28-Sep-07	1-Nov-07		C	SL_PCCA	Hrs	140			9,917		9,917
1	03	07	04			Install All Racks, Cables, Trays & Test	28-Sep-07	1-Nov-07		C	SL_CT	Hrs	24			1,599		1,599
1	03	07	04			Install All Racks, Cables, Trays & Test	28-Sep-07	1-Nov-07		C	SL_CE	Hrs	45			5,473		5,473
1	03	07	04			Install All Racks, Cables, Trays & Test	28-Sep-07	1-Nov-07		C	SL_CCA	Hrs	360			25,502		25,502
1	03	07	04			Install S-Band RF Components	28-Sep-07	4-Oct-07		C	SL_KT	Hrs	30			1,990		1,990
1	03	07	04			Install S-Band RF Components	28-Sep-07	4-Oct-07		C	SL_KE	Hrs	30			3,634		3,634
1	03	07	04			Install Beamline Components	5-Oct-07	22-Oct-07		C	SL_MFAT	Hrs	1,080			95,677		95,677
1	03	07	04			Install Beamline Components	5-Oct-07	22-Oct-07		C	SL_ME	Hrs	15			1,716		1,716
1	03	07	04			Align Beamline Components to Coordinate System	23-Oct-07	26-Oct-07		C	SL_MFAT	Hrs	24			2,126		2,126
1	03	07	04			Align Beamline Components to Coordinate System	23-Oct-07	26-Oct-07		C	SL_MES	Hrs	72			7,039		7,039
1	03	07	04			Magnet Power Interconnect & Test	29-Oct-07	31-Oct-07		C	SL_CT	Hrs	120			8,002		8,002
1	03	07	04			Magnet Power Interconnect & Test	29-Oct-07	31-Oct-07		C	SL_CE	Hrs	15			1,826		1,826
1	03	07	04			Magnet Power Interconnect & Test	29-Oct-07	31-Oct-07		C	SL_CCA	Hrs	45			3,191		3,191
1	03	07	04			Controls Interconnect & Test	2-Nov-07	6-Nov-07		C	SL_CT	Hrs	120			8,002		8,002
1	03	07	04			Controls Interconnect & Test	2-Nov-07	6-Nov-07		C	SL_CE	Hrs	15			1,826		1,826
1	03	07	04			Controls Interconnect & Test	2-Nov-07	6-Nov-07		C	SL_CCA	Hrs	45			3,191		3,191
1	03	07	04			Interconnect Vacuum System & Test	23-Oct-07	25-Oct-07		C	SL_MFAT	Hrs	225			19,933		19,933
1	03	07	04			Interconnect Vacuum System & Test	23-Oct-07	25-Oct-07		C	SL_ME	Hrs	30			3,432		3,432
1	03	07	04			Interconnect Vacuum System & Test	23-Oct-07	25-Oct-07		C	SL_CT	Hrs	360			24,005		24,005
1	03	07	04			Interconnect Vacuum System & Test	23-Oct-07	25-Oct-07		C	SL_CE	Hrs	6			731		731
1	03	07	04			Interconnect Vacuum System & Test	23-Oct-07	25-Oct-07		C	SL_CCA	Hrs	24			1,702		1,702
1	03	07	04			Perform Magnet Power Test	26-Oct-07	29-Oct-07		C	SL_CT	Hrs	120			8,002		8,002
1	03	07	04			Perform Magnet Power Test	26-Oct-07	29-Oct-07		C	SL_CE	Hrs	12			1,461		1,461

LCLS TPC Detailed Cost Estimate (FY05FY09)

5/5/2005

WBS Level						LCLA DCE March-2005 Description	Early Start	Early Finish	OBS	Fund Type	Res Code	Units	Budgeted Quantity		Fully Burdened and Escalated Cost				
Run Time: 4/22/05 8:43am													Hours	\$	Labor	M&S	Total (No Conting)		
1	2	3	4	5	6														
1	03	07	04			Perform Magnet Power Test	26-Oct-07	29-Oct-07		C	SL_CCA	Hrs	36			2,553			2,553
1	03	07	04			Perform Diagnostics Controls Test	30-Oct-07	1-Nov-07		C	SL_CT	Hrs	120			8,002			8,002
1	03	07	04			Perform Diagnostics Controls Test	30-Oct-07	1-Nov-07		C	SL_CE	Hrs	12			1,461			1,461
1	03	07	04			Perform Diagnostics Controls Test	30-Oct-07	1-Nov-07		C	SL_CCA	Hrs	36			2,553			2,553
1	03	07	04			Test & Tune S Band RF Equipment	2-Nov-07	6-Nov-07		C	SL_KT	Hrs	72			4,801			4,801
1	03	07	04			Test & Tune S Band RF Equipment	2-Nov-07	6-Nov-07		C	SL_KE	Hrs	72			8,766			8,766
1	03	07	04			Coordinate & Check Installation	7-Nov-07	16-Nov-07		C	SL_MFAT	Hrs	60			5,315			5,315
1	03	07	04			Coordinate & Check Installation	7-Nov-07	16-Nov-07		C	SL_ME	Hrs	60			6,863			6,863
1	03	07	05			Linac L03 System Installation & Alignment							6,852	14,000	617,496	16,038	633,534		
1	03	07	05			Procure Installation Hardware	8-May-06	7-Mar-07		C	SL_MSEG	\$\$				2,000			2,269
1	03	07	05			Procure Installation Tooling	8-May-06	7-Mar-07		C	SL_MSEG	\$\$				2,000			2,269
1	03	07	05			Kit New Components for Installation	8-Mar-07	4-Apr-07		C	SL_MFAT	Hrs	60			5,181			5,181
1	03	07	05			Kit New Components for Installation	8-Mar-07	4-Apr-07		C	SL_ME	Hrs	30			3,345			3,345
1	03	07	05			Develop De-Installation Plan for Existing Equip	10-Apr-06	28-Apr-06		C	SL_PCE	Hrs	60			6,940			6,940
1	03	07	05			Develop De-Installation Plan for Existing Equip	10-Apr-06	28-Apr-06		C	SL_ME	Hrs	60			6,520			6,520
1	03	07	05			Develop De-Installation Plan for Existing Equip	10-Apr-06	28-Apr-06		C	SL_CE	Hrs	60			6,940			6,940
1	03	07	05			De-install Existing Components	4-Sep-07	24-Sep-07		C	SL_TMUE	Hrs	400			40,628			40,628
1	03	07	05			De-install Existing Components	4-Sep-07	24-Sep-07		C	SL_PCCA	Hrs	240			16,586			16,586
1	03	07	05			De-install Existing Components	4-Sep-07	24-Sep-07		C	SL_MFAT	Hrs	375			32,381			32,381
1	03	07	05			De-install Existing Components	4-Sep-07	24-Sep-07		C	SL_ME	Hrs	60			6,689			6,689
1	03	07	05			Determine Disposition of De-installed Components	11-Sep-07	13-Sep-07		C	SL_MFAT	Hrs	300			25,905			25,905
1	03	07	05			Determine Disposition of De-installed Components	11-Sep-07	13-Sep-07		C	SL_ME	Hrs	8			892			892
1	03	07	05			Prep for & Move De-installed Equip to Storage	14-Sep-07	20-Sep-07		C	SL_TMUI	Hrs	240			19,260			19,260
1	03	07	05			Prep for & Move De-installed Equip to Storage	14-Sep-07	20-Sep-07		C	SL_SEL	Hrs	240			11,878			11,878
1	03	07	05			Prep for & Move De-installed Equip to Storage	14-Sep-07	20-Sep-07		C	SL_MSEG	\$\$				10,000		11,500	11,500
1	03	07	05			Establish Alignment Coordinates for B/L Equip	4-Sep-07	11-Sep-07		C	SL_MFAT	Hrs	12			1,036			1,036
1	03	07	05			Establish Alignment Coordinates for B/L Equip	4-Sep-07	11-Sep-07		C	SL_MES	Hrs	36			3,430			3,430
1	03	07	05			Establish Alignment Coordinates for B/L Equip	4-Sep-07	11-Sep-07		C	SL_ME	Hrs	6			669			669
1	03	07	05			Install All Racks, Cables, Trays & Test	12-Sep-07	16-Oct-07		C	SL_TMUE	Hrs	2,300			236,526			236,526
1	03	07	05			Install All Racks, Cables, Trays & Test	12-Sep-07	16-Oct-07		C	SL_PCT	Hrs	96			6,317			6,317
1	03	07	05			Install All Racks, Cables, Trays & Test	12-Sep-07	16-Oct-07		C	SL_PCE	Hrs	120			14,418			14,418
1	03	07	05			Install All Racks, Cables, Trays & Test	12-Sep-07	16-Oct-07		C	SL_PCCA	Hrs	120			8,397			8,397
1	03	07	05			Install All Racks, Cables, Trays & Test	12-Sep-07	16-Oct-07		C	SL_CT	Hrs	60			3,948			3,948
1	03	07	05			Install All Racks, Cables, Trays & Test	12-Sep-07	16-Oct-07		C	SL_CE	Hrs	60			7,209			7,209
1	03	07	05			Install All Racks, Cables, Trays & Test	12-Sep-07	16-Oct-07		C	SL_CCA	Hrs	480			33,588			33,588
1	03	07	05			Install S-Band RF Components	25-Sep-07	8-Oct-07		C	SL_KT	Hrs	15			990			990
1	03	07	05			Install S-Band RF Components	25-Sep-07	8-Oct-07		C	SL_KE	Hrs	15			1,808			1,808
1	03	07	05			Install Beamline Components	25-Sep-07	15-Oct-07		C	SL_MFAT	Hrs	540			47,516			47,516
1	03	07	05			Install Beamline Components	25-Sep-07	15-Oct-07		C	SL_ME	Hrs	8			909			909
1	03	07	05			Align Beamline Components to Coordinate System	16-Oct-07	25-Oct-07		C	SL_MFAT	Hrs	12			1,063			1,063
1	03	07	05			Align Beamline Components to Coordinate System	16-Oct-07	25-Oct-07		C	SL_MES	Hrs	36			3,519			3,519
1	03	07	05			Magnet Power Interconnect & Test	26-Oct-07	30-Oct-07		C	SL_CT	Hrs	60			4,001			4,001
1	03	07	05			Magnet Power Interconnect & Test	26-Oct-07	30-Oct-07		C	SL_CE	Hrs	6			731			731
1	03	07	05			Magnet Power Interconnect & Test	26-Oct-07	30-Oct-07		C	SL_CCA	Hrs	24			1,702			1,702
1	03	07	05			Controls Interconnect & Test	31-Oct-07	7-Nov-07		C	SL_CT	Hrs	60			4,001			4,001
1	03	07	05			Controls Interconnect & Test	31-Oct-07	7-Nov-07		C	SL_CE	Hrs	6			731			731
1	03	07	05			Controls Interconnect & Test	31-Oct-07	7-Nov-07		C	SL_CCA	Hrs	24			1,702			1,702
1	03	07	05			Interconnect Vacuum System & Test	31-Oct-07	7-Nov-07		C	SL_MFAT	Hrs	113			10,011			10,011
1	03	07	05			Interconnect Vacuum System & Test	31-Oct-07	7-Nov-07		C	SL_ME	Hrs	15			1,716			1,716
1	03	07	05			Interconnect Vacuum System & Test	31-Oct-07	7-Nov-07		C	SL_CT	Hrs	180			12,002			12,002
1	03	07	05			Interconnect Vacuum System & Test	31-Oct-07	7-Nov-07		C	SL_CE	Hrs	5			609			609
1	03	07	05			Interconnect Vacuum System & Test	31-Oct-07	7-Nov-07		C	SL_CCA	Hrs	10			709			709
1	03	07	05			Perform Magnet Power Test	8-Nov-07	9-Nov-07		C	SL_CT	Hrs	60			4,001			4,001
1	03	07	05			Perform Magnet Power Test	8-Nov-07	9-Nov-07		C	SL_CE	Hrs	8			974			974
1	03	07	05			Perform Magnet Power Test	8-Nov-07	9-Nov-07		C	SL_CCA	Hrs	16			1,135			1,135
1	03	07	05			Perform Diagnostics Controls Test	12-Nov-07	19-Nov-07		C	SL_CT	Hrs	60			4,001			4,001
1	03	07	05			Perform Diagnostics Controls Test	12-Nov-07	19-Nov-07		C	SL_CE	Hrs	8			974			974
1	03	07	05			Perform Diagnostics Controls Test	12-Nov-07	19-Nov-07		C	SL_CCA	Hrs	16			1,135			1,135
1	03	07	05			Test & Tune S Band RF Equipment	20-Nov-07	21-Nov-07		C	SL_KT	Hrs	36			2,400			2,400
1	03	07	05			Test & Tune S Band RF Equipment	20-Nov-07	21-Nov-07		C	SL_KE	Hrs	36			4,383			4,383
1	03	07	05			Coordinate & Check Installation	26-Nov-07	30-Nov-07		C	SL_MFAT	Hrs	30			2,658			2,658
1	03	07	05			Coordinate & Check Installation	26-Nov-07	30-Nov-07		C	SL_ME	Hrs	30			3,432			3,432
1	03	07	06			Linac LTU System Installation & Alignment							10,352	225,000	933,361	257,046	1,190,407		
1	03	07	06			Establish & Maintain Component Storage Facility	10-Apr-06	18-Apr-07		C	SL_MSEG	\$\$				25,000		28,384	28,384

LCLS TPC Detailed Cost Estimate (FY05FY09)

5/5/2005

WBS Level						LCLA DCE March-2005 Description	Early Start	Early Finish	OBS	Fund Type	Res Code	Units	Budgeted Quantity		Fully Burdened and Escalated Cost				
Run Time: 4/22/05 8:43am													Hours	\$	Labor	M&S	Total (No Conting)		
1	2	3	4	5	6														
1	03	07	06			Procure Installation Hardware	3-Oct-06	11-Oct-07		C	SL_MSEG	\$\$			75,000			86,331	86,331
1	03	07	06			Procure Installation Tooling	3-Oct-06	11-Oct-07		C	SL_MSEG	\$\$			75,000			86,331	86,331
1	03	07	06			Kit New Components for Installation	12-Oct-07	8-Nov-07		C	SL_MFAT	Hrs	600			53,154			53,154
1	03	07	06			Kit New Components for Installation	12-Oct-07	8-Nov-07		C	SL_ME	Hrs	320			36,605			36,605
1	03	07	06			Develop De-Installation Plan for Existing Equip	10-Apr-06	28-Apr-06		C	SL_PCE	Hrs	100			11,566			11,566
1	03	07	06			Develop De-Installation Plan for Existing Equip	10-Apr-06	28-Apr-06		C	SL_ME	Hrs	80			8,694			8,694
1	03	07	06			Develop De-Installation Plan for Existing Equip	10-Apr-06	28-Apr-06		C	SL_CE	Hrs	100			11,566			11,566
1	03	07	06			De-install Existing Components	1-Jun-06	21-Jun-06		C	SL_TMUE	Hrs	800			79,200			79,200
1	03	07	06			De-install Existing Components	1-Jun-06	21-Jun-06		C	SL_PCCA	Hrs	400			26,944			26,944
1	03	07	06			De-install Existing Components	1-Jun-06	21-Jun-06		C	SL_MFAT	Hrs	600			50,496			50,496
1	03	07	06			De-install Existing Components	1-Jun-06	21-Jun-06		C	SL_ME	Hrs	80			8,694			8,694
1	03	07	06			Determine Disposition of De-installed Components	22-Jun-06	13-Jul-06		C	SL_MFAT	Hrs	360			30,298			30,298
1	03	07	06			Determine Disposition of De-installed Components	22-Jun-06	13-Jul-06		C	SL_ME	Hrs	40			4,347			4,347
1	03	07	06			Prep for & Move De-installed Equip to Storage	14-Jul-06	20-Jul-06		C	SL_TMUI	Hrs	400			37,546			37,546
1	03	07	06			Prep for & Move De-installed Equip to Storage	14-Jul-06	20-Jul-06		C	SL_SEL	Hrs	320			15,437			15,437
1	03	07	06			Prep for & Move De-installed Equip to Storage	14-Jul-06	20-Jul-06		C	SL_MSEG	\$\$			50,000			56,000	56,000
1	03	07	06			Establish Alignment Coordinates for B/L Equip	4-Dec-07	6-Dec-07		C	SL_MFAT	Hrs	240			21,262			21,262
1	03	07	06			Establish Alignment Coordinates for B/L Equip	4-Dec-07	6-Dec-07		C	SL_MES	Hrs	288			28,155			28,155
1	03	07	06			Establish Alignment Coordinates for B/L Equip	4-Dec-07	6-Dec-07		C	SL_ME	Hrs	120			13,727			13,727
1	03	07	06			Install All Racks, Cables, Trays & Test	7-Jan-08	11-Feb-08		C	SL_TMUE	Hrs	1,500			156,315			156,315
1	03	07	06			Install All Racks, Cables, Trays & Test	7-Jan-08	11-Feb-08		C	SL_PCT	Hrs	216			14,403			14,403
1	03	07	06			Install All Racks, Cables, Trays & Test	7-Jan-08	11-Feb-08		C	SL_PCE	Hrs	540			65,745			65,745
1	03	07	06			Install All Racks, Cables, Trays & Test	7-Jan-08	11-Feb-08		C	SL_PCCA	Hrs	540			38,291			38,291
1	03	07	06			Install All Racks, Cables, Trays & Test	7-Jan-08	11-Feb-08		C	SL_CT	Hrs	60			4,001			4,001
1	03	07	06			Install All Racks, Cables, Trays & Test	7-Jan-08	11-Feb-08		C	SL_CE	Hrs	60			7,305			7,305
1	03	07	06			Install All Racks, Cables, Trays & Test	7-Jan-08	11-Feb-08		C	SL_CCA	Hrs	360			25,528			25,528
1	03	07	06			Install Beamline Components	7-Jan-08	28-Jan-08		C	SL_MFAT	Hrs	600			53,154			53,154
1	03	07	06			Install Beamline Components	7-Jan-08	28-Jan-08		C	SL_ME	Hrs	60			6,863			6,863
1	03	07	06			Align Beamline Components to Coordinate System	29-Jan-08	1-Feb-08		C	SL_MFAT	Hrs	240			21,262			21,262
1	03	07	06			Align Beamline Components to Coordinate System	29-Jan-08	1-Feb-08		C	SL_MES	Hrs	240			23,462			23,462
1	03	07	06			Magnet Power Interconnect & Test	4-Feb-08	6-Feb-08		C	SL_CT	Hrs	120			8,002			8,002
1	03	07	06			Magnet Power Interconnect & Test	4-Feb-08	6-Feb-08		C	SL_CE	Hrs	10			1,218			1,218
1	03	07	06			Magnet Power Interconnect & Test	4-Feb-08	6-Feb-08		C	SL_CCA	Hrs	30			2,127			2,127
1	03	07	06			Controls Interconnect & Test	12-Feb-08	14-Feb-08		C	SL_CT	Hrs	120			8,002			8,002
1	03	07	06			Controls Interconnect & Test	12-Feb-08	14-Feb-08		C	SL_CE	Hrs	10			1,218			1,218
1	03	07	06			Controls Interconnect & Test	12-Feb-08	14-Feb-08		C	SL_CCA	Hrs	30			2,127			2,127
1	03	07	06			Interconnect Vacuum System & Test	15-Feb-08	20-Feb-08		C	SL_MFAT	Hrs	120			10,631			10,631
1	03	07	06			Interconnect Vacuum System & Test	15-Feb-08	20-Feb-08		C	SL_ME	Hrs	40			4,576			4,576
1	03	07	06			Interconnect Vacuum System & Test	15-Feb-08	20-Feb-08		C	SL_CT	Hrs	120			8,002			8,002
1	03	07	06			Interconnect Vacuum System & Test	15-Feb-08	20-Feb-08		C	SL_CE	Hrs	10			1,218			1,218
1	03	07	06			Interconnect Vacuum System & Test	15-Feb-08	20-Feb-08		C	SL_CCA	Hrs	30			2,127			2,127
1	03	07	06			Perform Magnet Power Test	21-Feb-08	22-Feb-08		C	SL_CT	Hrs	80			5,334			5,334
1	03	07	06			Perform Magnet Power Test	21-Feb-08	22-Feb-08		C	SL_CE	Hrs	8			974			974
1	03	07	06			Perform Magnet Power Test	21-Feb-08	22-Feb-08		C	SL_CCA	Hrs	16			1,135			1,135
1	03	07	06			Perform Diagnostics Controls Test	25-Feb-08	27-Feb-08		C	SL_CT	Hrs	80			5,334			5,334
1	03	07	06			Perform Diagnostics Controls Test	25-Feb-08	27-Feb-08		C	SL_CE	Hrs	8			974			974
1	03	07	06			Perform Diagnostics Controls Test	25-Feb-08	27-Feb-08		C	SL_CCA	Hrs	16			1,135			1,135
1	03	07	06			Coordinate & Check Installation	28-Feb-08	10-Mar-08		C	SL_MFAT	Hrs	120			10,631			10,631
1	03	07	06			Coordinate & Check Installation	28-Feb-08	10-Mar-08		C	SL_ME	Hrs	40			4,576			4,576
1	03	07	07			Linac E-Dump System Installation & Alignment							5,732	175,000	530,570	200,686	731,256		
1	03	07	07			Establish & Maintain Component Storage Facility	3-Oct-05	11-Oct-06		C	SL_MSEG	\$\$			25,000			28,024	28,024
1	03	07	07			Procure Installation Hardware	3-Oct-06	11-Oct-07		C	SL_MSEG	\$\$			75,000			86,331	86,331
1	03	07	07			Procure Installation Tooling	3-Oct-06	11-Oct-07		C	SL_MSEG	\$\$			75,000			86,331	86,331
1	03	07	07			Kit New Components for Installation	12-Oct-07	8-Nov-07		C	SL_MFAT	Hrs	600			53,154			53,154
1	03	07	07			Kit New Components for Installation	12-Oct-07	8-Nov-07		C	SL_ME	Hrs	320			36,605			36,605
1	03	07	07			Establish Alignment Coordinates for B/L Equip	3-Dec-07	5-Dec-07		C	SL_MFAT	Hrs	240			21,262			21,262
1	03	07	07			Establish Alignment Coordinates for B/L Equip	3-Dec-07	5-Dec-07		C	SL_MES	Hrs	288			28,155			28,155
1	03	07	07			Establish Alignment Coordinates for B/L Equip	3-Dec-07	5-Dec-07		C	SL_ME	Hrs	120			13,727			13,727
1	03	07	07			Install All Racks, Cables, Trays & Test	6-Dec-07	28-Jan-08		C	SL_TMUE	Hrs	1,500			156,315			156,315
1	03	07	07			Install All Racks, Cables, Trays & Test	6-Dec-07	28-Jan-08		C	SL_PCT	Hrs	16			1,067			1,067
1	03	07	07			Install All Racks, Cables, Trays & Test	6-Dec-07	28-Jan-08		C	SL_PCE	Hrs	20			2,435			2,435
1	03	07	07			Install All Racks, Cables, Trays & Test	6-Dec-07	28-Jan-08		C	SL_PCCA	Hrs	20			1,418			1,418
1	03	07	07			Install All Racks, Cables, Trays & Test	6-Dec-07	28-Jan-08		C	SL_CT	Hrs	400			26,672			26,672
1	03	07	07			Install All Racks, Cables, Trays & Test	6-Dec-07	28-Jan-08		C	SL_CE	Hrs	12			1,461			1,461

LCLS TPC Detailed Cost Estimate (FY05FY09)

5/5/2005

WBS Level						LCLA DCE March-2005 Description	Early Start	Early Finish	OBS	Fund Type	Res Code	Units	Budgeted Quantity		Fully Burdened and Escalated Cost			
Run Time: 4/22/05 8:43am													Hours	\$\$	Labor	M&S	Total (No Conting)	
1	2	3	4	5	6													
1	03	07	07			Install All Racks, Cables, Trays & Test	6-Dec-07	28-Jan-08		C	SL_CCA	Hrs	48			3,404		3,404
1	03	07	07			Install Beamline Components	7-Jan-08	28-Jan-08		C	SL_MFAT	Hrs	600			53,154		53,154
1	03	07	07			Install Beamline Components	7-Jan-08	28-Jan-08		C	SL_ME	Hrs	60			6,863		6,863
1	03	07	07			Align Beamline Components to Coordinate System	29-Jan-08	1-Feb-08		C	SL_MFAT	Hrs	240			21,262		21,262
1	03	07	07			Align Beamline Components to Coordinate System	29-Jan-08	1-Feb-08		C	SL_MES	Hrs	240			23,462		23,462
1	03	07	07			Magnet Power Interconnect & Test	4-Feb-08	6-Feb-08		C	SL_CT	Hrs	120			8,002		8,002
1	03	07	07			Magnet Power Interconnect & Test	4-Feb-08	6-Feb-08		C	SL_CE	Hrs	10			1,218		1,218
1	03	07	07			Magnet Power Interconnect & Test	4-Feb-08	6-Feb-08		C	SL_CCA	Hrs	30			2,127		2,127
1	03	07	07			Controls Interconnect & Test	4-Feb-08	6-Feb-08		C	SL_CT	Hrs	120			8,002		8,002
1	03	07	07			Controls Interconnect & Test	4-Feb-08	6-Feb-08		C	SL_CE	Hrs	10			1,218		1,218
1	03	07	07			Controls Interconnect & Test	4-Feb-08	6-Feb-08		C	SL_CCA	Hrs	30			2,127		2,127
1	03	07	07			Interconnect Vacuum System & Test	4-Feb-08	6-Feb-08		C	SL_MFAT	Hrs	120			10,631		10,631
1	03	07	07			Interconnect Vacuum System & Test	4-Feb-08	6-Feb-08		C	SL_ME	Hrs	40			4,576		4,576
1	03	07	07			Interconnect Vacuum System & Test	4-Feb-08	6-Feb-08		C	SL_CT	Hrs	120			8,002		8,002
1	03	07	07			Interconnect Vacuum System & Test	4-Feb-08	6-Feb-08		C	SL_CE	Hrs	10			1,218		1,218
1	03	07	07			Interconnect Vacuum System & Test	4-Feb-08	6-Feb-08		C	SL_CCA	Hrs	30			2,127		2,127
1	03	07	07			Perform Magnet Power Test	7-Feb-08	8-Feb-08		C	SL_CT	Hrs	80			5,334		5,334
1	03	07	07			Perform Magnet Power Test	7-Feb-08	8-Feb-08		C	SL_CE	Hrs	8			974		974
1	03	07	07			Perform Magnet Power Test	7-Feb-08	8-Feb-08		C	SL_CCA	Hrs	16			1,135		1,135
1	03	07	07			Perform Diagnostics Controls Test	11-Feb-08	13-Feb-08		C	SL_CT	Hrs	80			5,334		5,334
1	03	07	07			Perform Diagnostics Controls Test	11-Feb-08	13-Feb-08		C	SL_CE	Hrs	24			2,922		2,922
1	03	07	07			Coordinate & Check Installation	14-Feb-08	26-Feb-08		C	SL_MFAT	Hrs	120			10,631		10,631
1	03	07	07			Coordinate & Check Installation	14-Feb-08	26-Feb-08		C	SL_ME	Hrs	40			4,576		4,576
2	03					LINAC SYSTEM (OPC)							15,527	836,790	1,582,323	969,582	2,551,904	
2	03	01				System Management & Integration							5,544	-	565,386	-	565,386	
2	03	01	01			Linac Mechanical Integration							5,544	-	565,386	-	565,386	
2	03	01	01			Linac System Pre-Operations	9-Jun-08	30-Mar-09	X		SL_PHS	Hrs	4,158			377,048		377,048
2	03	01	01			Linac System Pre-Operations	9-Jun-08	30-Mar-09	X		SL_ME	Hrs	693			91,232		91,232
2	03	01	01			Linac System Pre-Operations	9-Jun-08	30-Mar-09	X		SL_EE	Hrs	693			97,106		97,106
2	03	01	02			Linac Controls Integration												
2	03	01	03			Travel												
2	03	01	04			Linac Management												
2	03	02				Linac Controls & Power Conversion Subsystem							174	73,110	15,022	84,712	99,734	
2	03	02	01			Personnel Protection System (PPS)												
2	03	02	02			Beam Containment System (BCS)												
2	03	02	03			Machine Protection System (MPS)												
2	03	02	04			Power Conversion							174	73,110	15,022	84,712	99,734	
2	03	02	04	01		Spare Power Supply (Dipole Type)							80	21,480	6,740	24,888	31,628	
2	03	02	04	01		Spare Pwr Supply (Dipole Type) Prcurement	3-Oct-06	12-Mar-07	S		SL_MSEG	\$\$		21,480		24,888		24,888
2	03	02	04	01		Assemble Pwr Supply, Transductor & Control	13-Mar-07	20-Mar-07	S	S	SL_PCT	Hrs	16			1,179		1,179
2	03	02	04	01		Assemble Pwr Supply, Transductor & Control	13-Mar-07	20-Mar-07	S	S	SL_PCE	Hrs	8			1,076		1,076
2	03	02	04	01		Assemble Pwr Supply, Transductor & Control	13-Mar-07	20-Mar-07	S	S	SL_PCCA	Hrs	24			1,880		1,880
2	03	02	04	01		Integrate Pwr Supply, Transductor & Control	21-Mar-07	29-Mar-07	S	S	SL_PCEF	Hrs	26			1,915		1,915
2	03	02	04	01		Integrate Cables	30-Mar-07	2-Apr-07	S	S	SL_TMUE	Hrs	6			690		690
2	03	02	04	02		Spare Power Supply (Quad Type)							82	21,480	6,901	24,888	31,789	
2	03	02	04	02		Spare Pwr Supply (Quad Type) Procurement	3-Oct-06	12-Mar-07	S		SL_MSEG	\$\$		21,480		24,888		24,888
2	03	02	04	02		Assemble Pwr Supply, Transductor & Control	13-Mar-07	20-Mar-07	S	S	SL_PCT	Hrs	16			1,179		1,179
2	03	02	04	02		Assemble Pwr Supply, Transductor & Control	13-Mar-07	20-Mar-07	S	S	SL_PCE	Hrs	8			1,076		1,076
2	03	02	04	02		Assemble Pwr Supply, Transductor & Control	13-Mar-07	20-Mar-07	S	S	SL_PCCA	Hrs	24			1,880		1,880
2	03	02	04	02		Integrate Pwr Supply, Transductor & Control	21-Mar-07	29-Mar-07	S	S	SL_PCEF	Hrs	26			1,915		1,915
2	03	02	04	02		Integrate Cables	30-Mar-07	2-Apr-07	S	S	SL_TMUE	Hrs	6			690		690
2	03	02	04	02		Integrate Magnet Interlock	3-Apr-07	3-Apr-07	S	S	SL_TMUI	Hrs	2			161		161
2	03	02	04	03		Spare Power Supply (Trim Type)							12	30,150	1,382	34,935	36,316	
2	03	02	04	03		Spare Power Supply Procurement	3-Oct-06	12-Mar-07	S		SL_MSEG	\$\$		30,150		34,935		34,935
2	03	02	04	03		Integrate Cables	13-Mar-07	14-Mar-07	S	S	SL_TMUE	Hrs	12			1,382		1,382
2	03	02	04	04		Controls & Power Supply - Spare Misc Hdwr												
2	03	02	05			Controls - LLRF												
2	03	02	06			Controls - E-Beam Diagnostic												
2	03	02	07			Controls - Laser												
2	03	02	08			Controls - Timing												
2	03	02	09			Controls - Vacuum												
2	03	02	10			Software & Controls Infrastructure												
2	03	03				Linac Magnets & Supports							-	127,000	-	147,152	147,152	
2	03	03	01			Bend Magnet (BX1_BC1)							-	7,000	-	8,111	8,111	

LCLS TPC Detailed Cost Estimate (FY05FY09)

5/5/2005

WBS Level						LCLA DCE March-2005 Description	Early Start	Early Finish	OBS	Fund Type	Res Code	Units	Budgeted Quantity		Fully Burdened and Escalated Cost				
Run Time: 4/22/05 8:43am													Hours	\$	Labor	M&S	Total (No Conting)		
1	2	3	4	5	6														
2	03	03	01			Procure Coils (2ea) - Bend Mag (BX1_BC1) SPARES	3-Oct-06	29-Nov-06		S	SL_MSEG	\$\$			7,000			8,111	8,111
2	03	03	02			Bend Magnet (BX3_LTU)								-	40,000		-	46,347	46,347
2	03	03	02			Procure Coils (2ea) - Bend Mag (BX3_LTU) SPARES	5-Jun-07	31-Jul-07		S	SL_MSEG	\$\$			40,000			46,347	46,347
2	03	03	03			Bend Magnet (BX2_BC2)								-	10,000		-	11,587	11,587
2	03	03	03			Procure Coils (2ea) - Bend Mag (BX2_BC2) SPARES	7-Nov-06	19-Jan-07		S	SL_MSEG	\$\$			10,000			11,587	11,587
2	03	03	04			Bend Magnet (BY_LTU)								-	15,000		-	17,380	17,380
2	03	03	04			Procure Coil (1ea) - Bend Mag (BY_LTU) SPARES	13-Apr-07	8-Jun-07		S	SL_MSEG	\$\$			15,000			17,380	17,380
2	03	03	05			Quad Magnet (Quad_LTU)								-	10,000		-	11,587	11,587
2	03	03	05			Procure Coil (4ea) - Quad Mag (Quad_LTU) SPARES	18-May-07	16-Jul-07		S	SL_MSEG	\$\$			10,000			11,587	11,587
2	03	03	07			Quad Magnet (QE)													
2	03	03	08			Corrector Magnet (Type 4)													
2	03	03	09			Bend Magnet (BYD_LTU)								-	15,000		-	17,380	17,380
2	03	03	09			Procure Coil (2ea) - Bend Mag (BYD_LTU) SPARES	3-Oct-06	29-Nov-06		S	SL_MSEG	\$\$			15,000			17,380	17,380
2	03	03	10			Quad Magnet (QA)													
2	03	03	11			Bend Magnet (BYPM_LTU)								-	15,000		-	17,380	17,380
2	03	03	11			Procure Coil (1ea) - Bend Mag (BYPM_LTU) SPARES	3-Oct-06	29-Nov-06		S	SL_MSEG	\$\$			15,000			17,380	17,380
2	03	03	12			Bend Magnet (BYKIK_LTU)								-	5,000		-	5,793	5,793
2	03	03	12			Procure Coil (1ea) - Bend Mag (BYKIK_LTU) SPARES	3-Oct-06	29-Nov-06		S	SL_MSEG	\$\$			5,000			5,793	5,793
2	03	03	13			Bend Magnet (BYW_LTU)								-	10,000		-	11,587	11,587
2	03	03	13			Procure Coil (1ea) - Bend Mag (BYW_LTU) SPARES	13-Dec-06	23-Feb-07		S	SL_MSEG	\$\$			10,000			11,587	11,587
2	03	04				Linac Vacuum Subsystem								-	126,080		-	146,089	146,089
2	03	04	01			Linac Vacuum Subsystem Operations Equip								-	63,679		-	73,787	73,787
2	03	04	01			Procure Basic Unit, V70LP Turbo, MSP5366	3-Oct-06	29-Nov-06		X	SL_MSEG	\$\$			14,730			17,068	17,068
2	03	04	01			Procure Dry Scroll Pump, MSP1001	3-Oct-06	29-Nov-06		X	SL_MSEG	\$\$			9,600			11,123	11,123
2	03	04	01			Procure Multigauge Controller, MSP0125	3-Oct-06	29-Nov-06		X	SL_MSEG	\$\$			2,130			2,468	2,468
2	03	04	01			Procure Thermocouple Board, MSP0126	3-Oct-06	29-Nov-06		X	SL_MSEG	\$\$			1,215			1,408	1,408
2	03	04	01			Procure Cold Cathode Board, MSPL9066	3-Oct-06	29-Nov-06		X	SL_MSEG	\$\$			2,165			2,509	2,509
2	03	04	01			Procure Setpoint Board, MSP 0130	3-Oct-06	29-Nov-06		X	SL_MSEG	\$\$			504			584	584
2	03	04	01			Procure Remote Input/Output Board, MSPL8324	3-Oct-06	29-Nov-06		X	SL_MSEG	\$\$			765			887	887
2	03	04	01			Procure Standard RS 485/422 O/I Board, MSPL8490	3-Oct-06	29-Nov-06		X	SL_MSEG	\$\$			390			452	452
2	03	04	01			Procure Inverted Magnetron CC Gauge, MSPL9062	3-Oct-06	29-Nov-06		X	SL_MSEG	\$\$			1,155			1,338	1,338
2	03	04	01			Procure Gauge Tube, Thrmcpl, 2 3/4 CFF, MSP5316	3-Oct-06	29-Nov-06		X	SL_MSEG	\$\$			360			417	417
2	03	04	01			Procure Emergency Vent, MSP0132	3-Oct-06	29-Nov-06		X	SL_MSEG	\$\$			425			493	493
2	03	04	01			Procure Forced Aircooling, MSP0136	3-Oct-06	29-Nov-06		X	SL_MSEG	\$\$			630			730	730
2	03	04	01			Procure Misc Leybold Leak Detector Equip	3-Oct-06	29-Nov-06		X	SL_MSEG	\$\$			29,610			34,309	34,309
2	03	04	02			Linac Beamline Vacuum System								-	5,162		-	5,981	5,981
2	03	04	02			Procure Materials for B/L Vac Sys Spares Kit	3-Oct-06	30-Oct-06		S	SL_MSEG	\$\$			5,162			5,981	5,981
2	03	04	03			BC1 Vacuum System								-	11,237		-	13,021	13,021
2	03	04	03			Procure Materials for BC1 Vac Sys Spares Kit	3-Oct-06	30-Oct-06		S	SL_MSEG	\$\$			11,237			13,021	13,021
2	03	04	04			BC2 Vacuum System								-	16,255		-	18,834	18,834
2	03	04	04			Procure Materials for BC2 Vac Sys Spares Kit	3-Oct-06	30-Oct-06		S	SL_MSEG	\$\$			16,255			18,834	18,834
2	03	04	05			Linac to Undulator (LTU) Vacuum System								-	25,524		-	29,575	29,575
2	03	04	05			Procure Materials for LTU Vac Sys Spares Kit	3-Oct-06	30-Oct-06		S	SL_MSEG	\$\$			25,524			29,575	29,575
2	03	04	06			Dumpline Vacuum System								-	4,223		-	4,893	4,893
2	03	04	06			Procure Materials for D/L Vac Sys Spares Kit	3-Oct-06	30-Oct-06		S	SL_MSEG	\$\$			4,223			4,893	4,893
2	03	05				Linac Electron Diagnostics								1,345	84,100		151,462	97,089	248,551
2	03	05	01			Wire Scanners								98	24,000		11,306	27,609	38,915
2	03	05	01			Vendor Fab 1st Lot (2) Spares	4-Oct-06	31-Oct-06		S	SA_MSEG	\$\$			11,500			13,225	13,225
2	03	05	01			Vendor Fab Remaining Lot (2) Spares	1-Nov-06	30-Nov-06		S	SA_MSEG	\$\$			11,500			13,225	13,225
2	03	05	01			Procure Misc Materials - Wire Scann - (2) SPARES	3-Oct-06	26-Jun-07		S	SL_MSEG	\$\$			1,000			1,159	1,159
2	03	05	01			Component Fab & Assembly - Wire Scannr (2) Spares	1-Oct-08	4-Feb-09		S	SL_MFPC	Hrs		4			807		807
2	03	05	01			Component Fab & Assembly - Wire Scannr (2) Spares	1-Oct-08	4-Feb-09		S	SL_MFMS	Hrs		26			3,284		3,284
2	03	05	01			Component Fab & Assembly - Wire Scannr (2) Spares	1-Oct-08	4-Feb-09		S	SL_MFAT	Hrs		24			2,472		2,472
2	03	05	01			Perform QC / Metrology (2ea) Spares	5-Feb-09	10-Feb-09		S	SL_MES	Hrs		9			1,023		1,023
2	03	05	01			Perform Functional Testing - Wire Scn (2) Spares	11-Feb-09	12-Feb-09		S	SL_CCA	Hrs		9			742		742
2	03	05	01			Collect Component Performance Data (2ea) Spares	13-Feb-09	19-Feb-09		S	SL_ME	Hrs		6			798		798
2	03	05	01			Load Component Data Base (2ea) Spares	20-Feb-09	26-Feb-09		S	SL_ME	Hrs		4			532		532
2	03	05	01			Post Process & Test (2ea) Spares	27-Feb-09	5-Mar-09		S	SL_MFAT	Hrs		16			1,648		1,648
2	03	05	02			Beam Position Monitors								920	29,200		102,153	33,833	135,986
2	03	05	02			Procure Component Material - BPMs - (2) SPARES	3-Oct-06	12-Mar-07		S	SL_MSEG	\$\$			1,700			1,970	1,970
2	03	05	02			Component Fab & Assembly - BPMs (2ea) Spares	13-Mar-07	29-Aug-07		S	SL_MFPC	Hrs		4			766		766
2	03	05	02			Component Fab & Assembly - BPMs (2ea) Spares	13-Mar-07	29-Aug-07		S	SL_MFMS	Hrs		24			2,880		2,880
2	03	05	02			Component Fab & Assembly - BPMs (2ea) Spares	13-Mar-07	29-Aug-07		S	SL_MFAT	Hrs		40			3,915		3,915
2	03	05	02			Perform QC / Metrology (2ea) Spares	30-Aug-07	31-Aug-07		S	SL_MES	Hrs		2			216		216

LCLS TPC Detailed Cost Estimate (FY05FY09)

5/5/2005

WBS Level						LCLA DCE March-2005 Description	Early Start	Early Finish	OBS	Fund Type	Res Code	Units	Budgeted Quantity		Fully Burdened and Escalated Cost			
Run Time: 4/22/05 8:43am													Hours	\$\$	Labor	M&S	Total (No Conting)	
1	2	3	4	5	6													
2	03	05	02			Perform Functional Testing - BPMs (2ea) Spares	4-Sep-07	5-Sep-07		S	SL_CCA	Hrs	6			470		470
2	03	05	02			Collect Component Performance Data (2ea) Spares	6-Sep-07	12-Sep-07		S	SL_ME	Hrs	2			253		253
2	03	05	02			Load Component Data Base (2ea) Spares	13-Sep-07	19-Sep-07		S	SL_ME	Hrs	2			253		253
2	03	05	02			Post Process & Test (2ea) Spares	20-Sep-07	26-Sep-07		S	SL_MFAT	Hrs	6			587		587
2	03	05	02			Procure Component Material - RF BPM - (2) SPARES	3-Oct-06	11-Jan-07		S	SL_MSEG	\$\$		20,000			23,174	23,174
2	03	05	02			Component Fab & Assembly - RFBPMs (2ea) Spares	12-Jan-07	7-May-07		S	SL_MFAT	Hrs	200			19,573		19,573
2	03	05	02			Component Fab & Assembly - RF BPMs	8-May-07	29-Aug-07		S	SL_MFPC	Hrs	24			4,598		4,598
2	03	05	02			Perform QC / Metrology (2ea) Spares	30-Aug-07	5-Sep-07		S	SL_MES	Hrs	8			864		864
2	03	05	02			Perform Functional Testing - RFBPMs (2ea) Spares	6-Sep-07	7-Sep-07		S	SL_CCA	Hrs	32			2,507		2,507
2	03	05	02			Collect Component Performance Data (2ea) Spares	10-Sep-07	14-Sep-07		S	SL_ME	Hrs	4			505		505
2	03	05	02			Load Component Data Base (2ea) Spares	17-Sep-07	21-Sep-07		S	SL_ME	Hrs	2			253		253
2	03	05	02			Post Process & Test (2ea) Spares	24-Sep-07	28-Sep-07		S	SL_MFAT	Hrs	32			3,131		3,131
2	03	05	02			Procure Component Material - BPMs - (2) SPARES	1-Mar-07	25-Apr-07		S	SL_MSEG	\$\$		2,500			2,897	2,897
2	03	05	02			Component Fab & Assembly - BPMs (2ea) Spares	26-Apr-07	21-Jun-07		S	SL_MFPC	Hrs	6			1,149		1,149
2	03	05	02			Component Fab & Assembly - BPMs (2ea) Spares	26-Apr-07	21-Jun-07		S	SL_MFMS	Hrs	35			4,200		4,200
2	03	05	02			Component Fab & Assembly - BPMs (2ea) Spares	26-Apr-07	21-Jun-07		S	SL_MFAT	Hrs	9			881		881
2	03	05	02			Perform QC / Metrology (2ea) Spares	22-Jun-07	28-Jun-07		S	SL_MES	Hrs	8			864		864
2	03	05	02			Perform Functional Testing - BPMs (2ea) Spares	29-Jun-07	5-Jul-07		S	SL_CCA	Hrs	4			313		313
2	03	05	02			Collect Component Performance Data (2ea) Spares	6-Jul-07	9-Jul-07		S	SL_ME	Hrs	2			253		253
2	03	05	02			Load Component Data Base (2ea) Spares	10-Jul-07	11-Jul-07		S	SL_ME	Hrs	2			253		253
2	03	05	02			Post Process & Test (2ea) Spares	12-Jul-07	25-Jul-07		S	SL_MFAT	Hrs	10			979		979
2	03	05	02			Procure Component Material - BPMs - (1) SPARE	3-Oct-06	29-Nov-06		S	SL_MSEG	\$\$		5,000			5,793	5,793
2	03	05	02			Component Fab & Assembly - BPMs (1ea) Spare	30-Nov-06	5-Jun-07		S	SL_MFPC	Hrs	24			4,598		4,598
2	03	05	02			Component Fab & Assembly - BPMs (1ea) Spare	30-Nov-06	5-Jun-07		S	SL_MFMS	Hrs	240			28,799		28,799
2	03	05	02			Component Fab & Assembly - BPMs (1ea) Spare	30-Nov-06	5-Jun-07		S	SL_MFAT	Hrs	120			11,744		11,744
2	03	05	02			Perform QC / Metrology (1ea) Spare	6-Jun-07	11-Jun-07		S	SL_MES	Hrs	16			1,727		1,727
2	03	05	02			Perform Functional Testing - BPMs (1ea) Spare	12-Jun-07	15-Jun-07		S	SL_CCA	Hrs	16			1,253		1,253
2	03	05	02			Collect Component Performance Data (1ea) Spare	18-Jun-07	19-Jun-07		S	SL_ME	Hrs	8			1,011		1,011
2	03	05	02			Load Component Data Base (1ea) Spare	20-Jun-07	21-Jun-07		S	SL_ME	Hrs	8			1,011		1,011
2	03	05	02			Post Process & Test (1ea) Spare	22-Jun-07	27-Jun-07		S	SL_MFAT	Hrs	24			2,348		2,348
2	03	05	03			Toroids Beam Charge							136	1,500		15,788	1,738	17,526
2	03	05	03			Procure Component Material - Toroid - (2) SPARES	3-Oct-06	11-Jan-07		S	SL_MSEG	\$\$		1,500			1,738	1,738
2	03	05	03			Component Fab & Assembly - Toroids (2ea) Spares	12-Jan-07	7-May-07		S	SL_MFPC	Hrs	12			2,300		2,300
2	03	05	03			Component Fab & Assembly - Toroids (2ea) Spares	12-Jan-07	7-May-07		S	SL_MFMS	Hrs	64			7,679		7,679
2	03	05	03			Component Fab & Assembly - Toroids (2ea) Spares	12-Jan-07	7-May-07		S	SL_MFAT	Hrs	35			3,425		3,425
2	03	05	03			Perform Functional Testing - Toroid (2ea) Spares	10-May-07	11-May-07		S	SL_CCA	Hrs	9			705		705
2	03	05	03			Collect Component Performance Data (2ea) Spares	14-May-07	18-May-07		S	SL_ME	Hrs	2			253		253
2	03	05	03			Load Component Data Base (2ea) Spares	21-May-07	25-May-07		S	SL_ME	Hrs	2			253		253
2	03	05	03			Post Process & Test (2ea) Spares	29-May-07	4-Jun-07		S	SL_MFAT	Hrs	12			1,174		1,174
2	03	05	04			Stoppers Tune Up Dump							-	4,000		-	4,635	4,635
2	03	05	04			Procure Hardware Kit - Stoppers - SPARES	3-Oct-06	12-Mar-07		S	SL_MSEG	\$\$		4,000			4,635	4,635
2	03	05	05			Profile Monitors							77	18,400		8,101	21,163	29,265
2	03	05	05			Vendor Fab 1st Lot (1) Spare	4-Oct-06	14-Nov-06		S	SA_MSEG	\$\$		9,000			10,350	10,350
2	03	05	05			Vendor Fab Remaining Lot (1) Spare	15-Nov-06	12-Jan-07		S	SA_MSEG	\$\$		9,000			10,350	10,350
2	03	05	05			Procure Component Material - Profile - (1) SPARE	3-Oct-06	29-Nov-06		S	SL_MSEG	\$\$		400			463	463
2	03	05	05			Component Fab & Assembly - Profile Mon (1) Spare	16-Jan-07	13-Mar-07		S	SL_MFPC	Hrs	4			766		766
2	03	05	05			Component Fab & Assembly - Profile Mon (1) Spare	16-Jan-07	13-Mar-07		S	SL_MFMS	Hrs	6			720		720
2	03	05	05			Component Fab & Assembly - Profile Mon (1) Spare	16-Jan-07	13-Mar-07		S	SL_MFAT	Hrs	45			4,404		4,404
2	03	05	05			Perform QC / Metrology (1ea) Spare	14-Mar-07	27-Mar-07		S	SL_MES	Hrs	6			648		648
2	03	05	05			Perform Functional Testing - Profile Mo(1) Spare	28-Mar-07	24-Apr-07		S	SL_CCA	Hrs	6			470		470
2	03	05	05			Collect Component Performance Data (1ea) Spare	25-Apr-07	26-Apr-07		S	SL_ME	Hrs	2			253		253
2	03	05	05			Load Component Data Base (1ea) Spare	27-Apr-07	2-May-07		S	SL_ME	Hrs	2			253		253
2	03	05	05			Post Process & Test (1ea) Spare	3-May-07	16-May-07		S	SL_MFAT	Hrs	6			587		587
2	03	05	06			E/O Bunch Length Monitors												
2	03	05	07			Bunch Length Monitors							74	1,000		9,508	1,159	10,666
2	03	05	07			Procure Component Mtrl - Bunch Len - (1) SPARE	3-Oct-06	30-Oct-06		S	SL_MSEG	\$\$		1,000			1,159	1,159
2	03	05	07			Component Fab & Assy - Bunch Length (1ea) Spare	31-Oct-06	29-Nov-06		S	SL_MFPC	Hrs	20			3,832		3,832
2	03	05	07			Component Fab & Assy - Bunch Length (1ea) Spare	31-Oct-06	29-Nov-06		S	SL_MFMS	Hrs	4			481		481
2	03	05	07			Component Fab & Assy - Bunch Length (1ea) Spare	31-Oct-06	29-Nov-06		S	SL_MFAT	Hrs	30			2,936		2,936
2	03	05	07			Perform QC / Metrology (1ea) Spare	30-Nov-06	11-Jan-07		S	SL_MES	Hrs	4			432		432
2	03	05	07			Perform Func Testing - Bunch Length (1ea) Spare	12-Jan-07	16-Jan-07		S	SL_CE	Hrs	4			538		538
2	03	05	07			Collect Component Performance Data (1ea) Spare	17-Jan-07	18-Jan-07		S	SL_ME	Hrs	2			253		253
2	03	05	07			Load Component Data Base (1ea) Spare	19-Jan-07	22-Jan-07		S	SL_ME	Hrs	2			253		253
2	03	05	07			Post Process & Test (1ea) Spare	23-Jan-07	5-Feb-07		S	SL_MFAT	Hrs	8			783		783

LCLS TPC Detailed Cost Estimate (FY05FY09)

5/5/2005

WBS Level						LCLA DCE March-2005 Description	Early Start	Early Finish	OBS	Fund Type	Res Code	Units	Budgeted Quantity		Fully Burdened and Escalated Cost		
Run Time: 4/22/05 8:43am													Hours	\$\$	Labor	M&S	Total (No Conting)
2	03	05	08			Beam Loss Monitors							40	500	4,606	579	5,185
2	03	05	08			Procure Component Material - BLM - (2) SPARES	12-Jan-07	5-Jun-07	S	SL_MSEG	\$\$			500		579	579
2	03	05	08			Component Fab & Assy - Bm Lss Mon (2) Spares	1-Oct-08	4-Feb-09	S	SL_MFPC	Hrs		-		-		-
2	03	05	08			Component Fab & Assy - Bm Lss Mon (2) Spares	1-Oct-08	4-Feb-09	S	SL_MFMS	Hrs		20		2,526		2,526
2	03	05	08			Component Fab & Assy - Bm Lss Mon (2) Spares	1-Oct-08	4-Feb-09	S	SL_MFAT	Hrs		8		824		824
2	03	05	08			Perform QC / Metrology (2ea) Spares	5-Feb-09	18-Feb-09	S	SL_MES	Hrs		4		454		454
2	03	05	08			Perform Functional Testing - Bm Lss Mo(2) Spares	19-Feb-09	4-Mar-09	S	SL_CCA	Hrs		4		330		330
2	03	05	08			Collect Component Performance Data (2ea) Spares	5-Mar-09	11-Mar-09	S	SL_ME	Hrs		1		133		133
2	03	05	08			Load Component Data Base (2ea) Spares	12-Mar-09	18-Mar-09	S	SL_ME	Hrs		1		133		133
2	03	05	08			Post Process & Test (2ea) Spares	19-Mar-09	25-Mar-09	S	SL_MFAT	Hrs		2		206		206
2	03	05	09			Single Beam Dump											
2	03	05	10			Electron Safety Beam Dump											
2	03	05	11			Protection Collimators							-	2,000	-	2,317	2,317
2	03	05	11			Procure Hardware - Protection Collimatr - SPARES	3-Oct-06	30-Oct-06	S	SL_MSEG	\$\$			2,000			2,317
2	03	05	12			Movable Collimators							-	2,500	-	2,897	2,897
2	03	05	12			Procure Hardware - Movable Collimator - SPARES	3-Oct-06	11-Jan-07	S	SL_MSEG	\$\$			2,500			2,897
2	03	05	13			Safety Dump							-	1,000	-	1,159	1,159
2	03	05	13			Procure Hardware - Single Beam Dump - SPARES	11-May-07	9-Jul-07	S	SL_MSEG	\$\$			1,000			1,159
2	03	06				Linac RF Subsystem							2,552	426,500	295,829	494,539	790,369
2	03	06	02			S-Band High Power System											
2	03	06	03			S-Band Structures											
2	03	06	04			X-Band Low Level System											
2	03	06	05			X-Band High Power System							1,832	332,500	242,429	385,261	627,690
2	03	06	05			Procure X-Band TWT Driver - SPARE	3-Oct-06	29-Aug-07	S	SL_MSEG	\$\$			30,000			34,760
2	03	06	05			Procure X-Band 4 X Multiplier - SPARE	3-Oct-06	29-Aug-07	S	SL_MSEG	\$\$			10,000			11,587
2	03	06	05			Procure X-Band Phase & Amp Dectector - SPARE	3-Oct-06	29-Aug-07	S	SL_MSEG	\$\$			25,000			28,967
2	03	06	05			Procure X-Band Stripline Couplers - SPARE	3-Oct-06	29-Aug-07	S	SL_MSEG	\$\$			4,000			4,635
2	03	06	05			Prep Bid Pak - X-Band Klystron	3-Oct-06	9-Oct-06	S	SL_MDD	Hrs		16		1,200		1,200
2	03	06	05			Evaluate Vendor Proposals - Klystron System	24-Oct-06	30-Oct-06	S	SL_MDD	Hrs		16		1,200		1,200
2	03	06	05			Vendor Fab & Assy -X-Band Klystrons - SPARE	1-Nov-06	28-Sep-07	S	SL_MSEG	\$\$			175,000			202,769
2	03	06	05			Procure Mounting Support - SPARE	3-Oct-06	29-Aug-07	S	SL_MSEG	\$\$			4,000			4,635
2	03	06	05			Fab & Assemble X-Band Klystron - SPARE	3-Oct-06	12-Mar-07	S	SL_MFPC	Hrs		800		153,272		153,272
2	03	06	05			Fab & Assemble X-Band Klystron - SPARE	3-Oct-06	12-Mar-07	S	SL_KT	Hrs		280		20,623		20,623
2	03	06	05			Fab & Assemble X-Band Klystron - SPARE	3-Oct-06	12-Mar-07	S	SL_KE	Hrs		160		21,519		21,519
2	03	06	05			Fab & Assemble X-Band Klystron - SPARE	3-Oct-06	12-Mar-07	S	SL_KCA	Hrs		200		15,665		15,665
2	03	06	05			Procure Tank - SPARE	3-Oct-06	29-Aug-07	S	SL_MSEG	\$\$			16,000			18,539
2	03	06	05			Procure Pulsed Transformer - SPARE	3-Oct-06	29-Aug-07	S	SL_MSEG	\$\$			20,000			23,174
2	03	06	05			Procure Cap Divider - SPARE	3-Oct-06	29-Aug-07	S	SL_MSEG	\$\$			2,500			2,897
2	03	06	05			Procure Heater Isolation - SPARE	3-Oct-06	29-Aug-07	S	SL_MSEG	\$\$			4,000			4,635
2	03	06	05			Procure Toroid & Misc - SPARE	3-Oct-06	29-Aug-07	S	SL_MSEG	\$\$			3,000			3,476
2	03	06	05			Procure Interlocks - SPARE	3-Oct-06	29-Aug-07	S	SL_MSEG	\$\$			3,000			3,476
2	03	06	05			Procure HV Connectors - SPARE	3-Oct-06	29-Aug-07	S	SL_MSEG	\$\$			2,000			2,317
2	03	06	05			Procure Magnet Power Supply - SPARE	3-Oct-06	29-Aug-07	S	SL_MSEG	\$\$			28,000			32,443
2	03	06	05			Procure Power Supply Cabling - SPARE	3-Oct-06	29-Aug-07	S	SL_MSEG	\$\$			5,000			5,793
2	03	06	05			Procure Cathode Ion Pump - SPARE	3-Oct-06	29-Aug-07	S	SL_MSEG	\$\$			1,000			1,159
2	03	06	05			Assemble Tank - SPARE	30-Aug-07	6-Sep-07	S	SL_KT	Hrs		80		5,892		5,892
2	03	06	05			Dress Klystron - SPARE	13-Mar-07	2-Apr-07	S	SL_KT	Hrs		120		8,839		8,839
2	03	06	05			Dress Klystron - SPARE	13-Mar-07	2-Apr-07	S	SL_KE	Hrs		40		5,380		5,380
2	03	06	05			Test Klystron / Tank Assembly - SPARE	7-Sep-07	27-Sep-07	S	SL_KT	Hrs		120		8,839		8,839
2	03	06	06			X-Band Structures											
2	03	06	07			RF Distribution System							720	94,000	53,400	109,279	162,679
2	03	06	07	01		Modulator							-	12,000	-	13,904	13,904
2	03	06	07	01		Procure Thyatron & Parts - SPARE	3-Oct-06	26-Jan-07	S	SL_MSEG	\$\$			12,000			13,904
2	03	06	07	02		Solid State Sub Booster							80	20,000	5,892	23,174	29,066
2	03	06	07	02		Procure Phase Control Electronics - SPARE	3-Oct-06	29-Nov-06	S	SL_MSEG	\$\$			10,000			11,587
2	03	06	07	02		Procure Amplitude Control Electronics - SPARE	3-Oct-06	29-Nov-06	S	SL_MSEG	\$\$			10,000			11,587
2	03	06	07	02		Fab & Test Amplifier - SPARE	30-Nov-06	23-Apr-07	S	SL_KT	Hrs		80		5,892		5,892
2	03	06	07	05		Bunch Length Electronics							120	30,000	8,839	34,760	43,599
2	03	06	07	05		Proc, Fab & Test Bunch Length Electronics- SPARE	3-Oct-06	30-Oct-06	S	SL_MSEG	\$\$			30,000			34,760
2	03	06	07	05		Proc, Fab & Test Bunch Length Electronics- SPARE	3-Oct-06	30-Oct-06	S	SL_KT	Hrs		120		8,839		8,839
2	03	06	07	07		RF Distribution L2 & L3							40	2,000	2,947	2,317	5,264
2	03	06	07	07		Fab & Test 2W Distribution Amp - SPARE	7-Feb-07	2-May-07	S	SL_MSEG	\$\$			2,000			2,317
2	03	06	07	07		Fab & Test 2W Distribution Amp - SPARE	7-Feb-07	2-May-07	S	SL_KT	Hrs		40		2,947		2,947
2	03	06	07	08		RF Fiber Optics Electronics							480	30,000	35,723	35,123	70,846

LCLS TPC Detailed Cost Estimate (FY05FY09)

5/5/2005

WBS Level						LCLA DCE March-2005 Description	Early Start	Early Finish	OBS	Fund Type	Res Code	Units	Budgeted Quantity		Fully Burdened and Escalated Cost				
Run Time: 4/22/05 8:43am													Hours	\$	Labor	M&S	Total (No Conting)		
1	2	3	4	5	6														
2	03	06	07	08		Procure, Fab & Test RF FO Electronics	9-Aug-07	1-Nov-07		S	SL_MSEG	\$\$			30,000			35,123	35,123
2	03	06	07	08		Procure, Fab & Test RF FO Electronics	9-Aug-07	1-Nov-07		S	SL_CT	Hrs	480				35,723		35,723
2	03	07				Linac System Commissioning							5,912	-		554,623	-	554,623	
2	03	07	01			Linac L01 System Commissioning							480	-		44,429	-	44,429	
2	03	07	01			PPS Checkout Linac	12-Jun-07	12-Jun-07	X		SL_CT	Hrs	8				589		589
2	03	07	01			PPS Checkout Linac	12-Jun-07	12-Jun-07	X		SL_CCA	Hrs	32				2,507		2,507
2	03	07	01			Search and Lock Linac	13-Jun-07	13-Jun-07	X		SL_PHPD	Hrs	16				1,338		1,338
2	03	07	01			Commission L01, Physics	3-Jan-08	16-Jan-08	X		SL_PHS	Hrs	112				10,001		10,001
2	03	07	01			Commission L01, Operations	3-Jan-08	16-Jan-08	X		SL_PHPD	Hrs	112				9,616		9,616
2	03	07	01			Support L01 Commissioning RF	3-Jan-08	16-Jan-08	X		SL_KT	Hrs	16				1,209		1,209
2	03	07	01			Support L01 Commissioning RF	3-Jan-08	16-Jan-08	X		SL_KE	Hrs	16				2,208		2,208
2	03	07	01			Support L01 Commissioning RF	3-Jan-08	16-Jan-08	X		SL_KCA	Hrs	8				643		643
2	03	07	01			Support L01 Commissioning Mechanical	3-Jan-08	16-Jan-08	X		SL_MVE	Hrs	16				2,074		2,074
2	03	07	01			Support L01 Commissioning Mechanical	3-Jan-08	16-Jan-08	X		SL_MFAT	Hrs	32				3,213		3,213
2	03	07	01			Support L01 Commissioning Survey	3-Jan-08	16-Jan-08	X		SL_MES	Hrs	32				3,545		3,545
2	03	07	01			Support L01 Commissioning Power Conv	3-Jan-08	16-Jan-08	X		SL_PCT	Hrs	20				1,512		1,512
2	03	07	01			Support L01 Commissioning Power Conv	3-Jan-08	16-Jan-08	X		SL_PCE	Hrs	20				2,760		2,760
2	03	07	01			Support L01 Commissioning Power Conv	3-Jan-08	16-Jan-08	X		SL_PCCA	Hrs	40				3,214		3,214
2	03	07	02			Linac BC1 System Commissioning							1,232	-		117,302	-	117,302	
2	03	07	02			Commission BC1, Physics	17-Jan-08	31-Jan-08	X		SL_PHS	Hrs	336				30,003		30,003
2	03	07	02			Commission BC1, Operations	17-Jan-08	31-Jan-08	X		SL_PHPD	Hrs	336				28,849		28,849
2	03	07	02			Support BC1 Commissioning RF	17-Jan-08	31-Jan-08	X		SL_KT	Hrs	80				6,045		6,045
2	03	07	02			Support BC1 Commissioning RF	17-Jan-08	31-Jan-08	X		SL_KE	Hrs	80				11,039		11,039
2	03	07	02			Support BC1 Commissioning RF	17-Jan-08	31-Jan-08	X		SL_KCA	Hrs	40				3,214		3,214
2	03	07	02			Support BC1 Commissioning Hardware	17-Jan-08	31-Jan-08	X		SL_CE	Hrs	80				11,039		11,039
2	03	07	02			Support BC1 Commissioning Hardware	17-Jan-08	31-Jan-08	X		SL_CCA	Hrs	120				9,644		9,644
2	03	07	02			Support BC1 Commissioning Mechanical	17-Jan-08	31-Jan-08	X		SL_MVE	Hrs	16				2,074		2,074
2	03	07	02			Support BC1 Commissioning Mechanical	17-Jan-08	31-Jan-08	X		SL_MFAT	Hrs	32				3,213		3,213
2	03	07	02			Support BC1 Commissioning Survey	17-Jan-08	31-Jan-08	X		SL_MES	Hrs	32				3,545		3,545
2	03	07	02			Support BC1 Commissioning Power Conv	17-Jan-08	31-Jan-08	X		SL_PCT	Hrs	20				1,512		1,512
2	03	07	02			Support BC1 Commissioning Power Conv	17-Jan-08	31-Jan-08	X		SL_PCE	Hrs	40				5,519		5,519
2	03	07	02			Support BC1 Commissioning Power Conv	17-Jan-08	31-Jan-08	X		SL_PCCA	Hrs	20				1,607		1,607
2	03	07	03			Linac L02 System Commissioning							680	-		66,884	-	66,884	
2	03	07	03			PPS Checkout Linac	8-Feb-08	8-Feb-08	X		SL_CT	Hrs	8				604		604
2	03	07	03			PPS Checkout Linac	8-Feb-08	8-Feb-08	X		SL_CCA	Hrs	32				2,572		2,572
2	03	07	03			Search and Lock Linac	11-Feb-08	11-Feb-08	X		SL_PHPD	Hrs	16				1,374		1,374
2	03	07	03			Commission L02, Physics	12-Feb-08	26-Feb-08	X		SL_PHS	Hrs	112				10,001		10,001
2	03	07	03			Commission L02, Operations	12-Feb-08	26-Feb-08	X		SL_PHPD	Hrs	112				9,616		9,616
2	03	07	03			Support L02 Commissioning RF	12-Feb-08	26-Feb-08	X		SL_KT	Hrs	8				604		604
2	03	07	03			Support L02 Commissioning RF	12-Feb-08	26-Feb-08	X		SL_KE	Hrs	16				2,208		2,208
2	03	07	03			Support L02 Commissioning RF	12-Feb-08	26-Feb-08	X		SL_KCA	Hrs	16				1,286		1,286
2	03	07	03			Support L02 Commissioning Hardware	12-Feb-08	26-Feb-08	X		SL_CE	Hrs	80				11,039		11,039
2	03	07	03			Support L02 Commissioning Hardware	12-Feb-08	26-Feb-08	X		SL_CCA	Hrs	120				9,644		9,644
2	03	07	03			Support L02 Commissioning Mechanical	12-Feb-08	26-Feb-08	X		SL_MVE	Hrs	32				4,148		4,148
2	03	07	03			Support L02 Commissioning Mechanical	12-Feb-08	26-Feb-08	X		SL_MFAT	Hrs	16				1,606		1,606
2	03	07	03			Support L02 Commissioning Survey	12-Feb-08	26-Feb-08	X		SL_MES	Hrs	32				3,545		3,545
2	03	07	03			Support L02 Commissioning Power Conv	12-Feb-08	26-Feb-08	X		SL_PCT	Hrs	20				1,512		1,512
2	03	07	03			Support L02 Commissioning Power Conv	12-Feb-08	26-Feb-08	X		SL_PCE	Hrs	40				5,519		5,519
2	03	07	03			Support L02 Commissioning Power Conv	12-Feb-08	26-Feb-08	X		SL_PCCA	Hrs	20				1,607		1,607
2	03	07	04			Linac BC2 System Commissioning							832	-		76,789	-	76,789	
2	03	07	04			Commission BC2, Physics	27-Feb-08	11-Mar-08	X		SL_PHS	Hrs	336				30,003		30,003
2	03	07	04			Commission BC2, Operations	27-Feb-08	11-Mar-08	X		SL_PHPD	Hrs	336				28,849		28,849
2	03	07	04			Support BC2 Commissioning Mechanical	27-Feb-08	11-Mar-08	X		SL_MVE	Hrs	32				4,148		4,148
2	03	07	04			Support BC2 Commissioning Mechanical	27-Feb-08	11-Mar-08	X		SL_MFAT	Hrs	16				1,606		1,606
2	03	07	04			Support BC2 Commissioning Survey	27-Feb-08	11-Mar-08	X		SL_MES	Hrs	32				3,545		3,545
2	03	07	04			Support BC2 Commissioning Power Conv	27-Feb-08	11-Mar-08	X		SL_PCT	Hrs	20				1,512		1,512
2	03	07	04			Support BC2 Commissioning Power Conv	27-Feb-08	11-Mar-08	X		SL_PCE	Hrs	40				5,519		5,519
2	03	07	04			Support BC2 Commissioning Power Conv	27-Feb-08	11-Mar-08	X		SL_PCCA	Hrs	20				1,607		1,607
2	03	07	05			Linac L03 System Commissioning							648	-		61,232	-	61,232	
2	03	07	05			Commission L03, Physics	12-Mar-08	25-Mar-08	X		SL_PHS	Hrs	224				20,002		20,002
2	03	07	05			Commission L03, Operations	12-Mar-08	25-Mar-08	X		SL_PHPD	Hrs	224				19,233		19,233
2	03	07	05			Support L03 Commissioning RF	12-Mar-08	25-Mar-08	X		SL_KT	Hrs	16				1,209		1,209
2	03	07	05			Support L03 Commissioning RF	12-Mar-08	25-Mar-08	X		SL_KE	Hrs	16				2,208		2,208
2	03	07	05			Support L03 Commissioning RF	12-Mar-08	25-Mar-08	X		SL_KCA	Hrs	8				643		643

LCLS TPC Detailed Cost Estimate (FY05FY09)

5/5/2005

WBS Level						LCLA DCE March-2005 Description	Early Start	Early Finish	OBS	Fund Type	Res Code	Units	Budgeted Quantity		Fully Burdened and Escalated Cost				
Run Time: 4/22/05 8:43am													Hours	\$\$	Labor	M&S	Total (No Conting)		
1	2	3	4	5	6														
2	03	07	05			Support L03 Commissioning Mechanical	12-Mar-08	25-Mar-08		X	SL_MVE	Hrs	32			4,148			4,148
2	03	07	05			Support L03 Commissioning Mechanical	12-Mar-08	25-Mar-08		X	SL_MFAT	Hrs	16			1,606			1,606
2	03	07	05			Support L03 Commissioning Survey	12-Mar-08	25-Mar-08		X	SL_MES	Hrs	32			3,545			3,545
2	03	07	05			Support L03 Commissioning Power Conv	12-Mar-08	25-Mar-08		X	SL_PCT	Hrs	20			1,512			1,512
2	03	07	05			Support L03 Commissioning Power Conv	12-Mar-08	25-Mar-08		X	SL_PCE	Hrs	40			5,519			5,519
2	03	07	05			Support L03 Commissioning Power Conv	12-Mar-08	25-Mar-08		X	SL_PCCA	Hrs	20			1,607			1,607
2	03	07	06			Linac LTU System Commissioning							1,232	-		110,600	-		110,600
2	03	07	06			PPS Checkout Linac	2-Apr-08	2-Apr-08		X	SL_CT	Hrs	8			604			604
2	03	07	06			PPS Checkout Linac	2-Apr-08	2-Apr-08		X	SL_CCA	Hrs	32			2,572			2,572
2	03	07	06			Search and Lock Linac	3-Apr-08	3-Apr-08		X	SL_PHPD	Hrs	16			1,374			1,374
2	03	07	06			Commission LTU, Physics	4-Apr-08	17-Apr-08		X	SL_PHS	Hrs	448			40,004			40,004
2	03	07	06			Commission LTU, Operations	4-Apr-08	17-Apr-08		X	SL_PHPD	Hrs	448			38,465			38,465
2	03	07	06			Support LTU Commissioning Hardware	4-Apr-08	17-Apr-08		X	SL_CCA	Hrs	120			9,644			9,644
2	03	07	06			Support LTU Commissioning Mechanical	4-Apr-08	17-Apr-08		X	SL_MVE	Hrs	32			4,148			4,148
2	03	07	06			Support LTU Commissioning Mechanical	4-Apr-08	17-Apr-08		X	SL_MFAT	Hrs	16			1,606			1,606
2	03	07	06			Support LTU Commissioning Survey	4-Apr-08	17-Apr-08		X	SL_MES	Hrs	32			3,545			3,545
2	03	07	06			Support LTU Commissioning Power Conv	4-Apr-08	17-Apr-08		X	SL_PCT	Hrs	20			1,512			1,512
2	03	07	06			Support LTU Commissioning Power Conv	4-Apr-08	17-Apr-08		X	SL_PCE	Hrs	40			5,519			5,519
2	03	07	06			Support LTU Commissioning Power Conv	4-Apr-08	17-Apr-08		X	SL_PCCA	Hrs	20			1,607			1,607
2	03	07	07			Linac E-Dump System Commissioning							808	-		77,387	-		77,387
2	03	07	07			Commission E-Dump, Physics	2-May-08	15-May-08		X	SL_PHS	Hrs	224			20,002			20,002
2	03	07	07			Commission E-Dump, Operations	2-May-08	15-May-08		X	SL_PHPD	Hrs	224			19,233			19,233
2	03	07	07			Support E-Dump Commissioning Hardware	2-May-08	15-May-08		X	SL_CE	Hrs	80			11,039			11,039
2	03	07	07			Support E-Dump Commissioning Hardware	2-May-08	15-May-08		X	SL_CCA	Hrs	120			9,644			9,644
2	03	07	07			Support E-Dump Commissioning Mechanical	2-May-08	15-May-08		X	SL_MVE	Hrs	16			2,074			2,074
2	03	07	07			Support E-Dump Commissioning Mechanical	2-May-08	15-May-08		X	SL_MFAT	Hrs	32			3,213			3,213
2	03	07	07			Support E-Dump Commissioning Survey	2-May-08	15-May-08		X	SL_MES	Hrs	32			3,545			3,545
2	03	07	07			Support E-Dump Commissioning Power Conv	2-May-08	15-May-08		X	SL_PCT	Hrs	20			1,512			1,512
2	03	07	07			Support E-Dump Commissioning Power Conv	2-May-08	15-May-08		X	SL_PCE	Hrs	40			5,519			5,519
2	03	07	07			Support E-Dump Commissioning Power Conv	2-May-08	15-May-08		X	SL_PCCA	Hrs	20			1,607			1,607