

Detailed Cost Estimate
LINAC SYSTEM

WBS Level						LCLA DCE Aug-2006 Description	Early Start	Early Finish	Fund Type	Res Code	Units	Work Rem. Bud. Qty		Work Rem. Full Burd and Escltd Cost			Contngcy %	Contingency \$
1	2	3	4	5	6							Hours	\$	Labor	M&S	Total		
1	03					LINAC SYSTEM						102,460	8,760,003	9,214,301	9,390,579	18,604,880		4,406,110
1	03	01				System Management & Integration						18,257	355,230	1,761,354	387,538	2,148,892		491,399
1	03	01	01			Linac Mechanical Integration						13,678	300,000	1,308,614	322,706	1,631,321		428,206
1	03	01	01	01		L01 System Integration						456	-	43,437	-	43,437		6,516
1	03	01	01	01		L01 Installation Oversight	1-Aug-06	5-Jan-07	C	SL_ME1	Hrs	68		6,724		6,724	15%	1,009
1	03	01	01	01		L01 Installation Oversight	1-Aug-06	5-Jan-07	C	SL_MDD	Hrs	68		5,638		5,638	15%	846
1	03	01	01	01		L01 Documentation	8-Jan-07	31-Aug-07	C	SL_ME1	Hrs	80		7,990		7,990	15%	1,198
1	03	01	01	01		L01 Documentation	8-Jan-07	31-Aug-07	C	SL_MDD	Hrs	120		10,048		10,048	15%	1,507
1	03	01	01	01		L01 System Construction Support to Component	8-Jan-07	31-Aug-07	C	SL_ME1	Hrs	40		3,995		3,995	15%	599
1	03	01	01	01		L01 System Construction Support to Component	8-Jan-07	31-Aug-07	C	SL_KE1	Hrs	40		4,521		4,521	15%	678
1	03	01	01	01		L01 System Construction Support to Component	8-Jan-07	31-Aug-07	C	SL_CE1	Hrs	40		4,521		4,521	15%	678
1	03	01	01	02		BC1 System Integration						522	-	50,051	-	50,051		12,513
1	03	01	01	02		BC1 Documentation	8-Jan-07	31-Aug-07	C	SL_ME1	Hrs	120		11,984		11,984	25%	2,996
1	03	01	01	02		BC1 Documentation	8-Jan-07	31-Aug-07	C	SL_MDD	Hrs	120		10,048		10,048	25%	2,512
1	03	01	01	02		BC1 System Construction Support to Component	8-Jan-07	31-Aug-07	C	SL_ME1	Hrs	40		3,995		3,995	25%	999
1	03	01	01	02		BC1 System Construction Support to Component	8-Jan-07	31-Aug-07	C	SL_KE1	Hrs	40		4,521		4,521	25%	1,130
1	03	01	01	02		BC1 System Construction Support to Component	8-Jan-07	31-Aug-07	C	SL_CE1	Hrs	40		4,521		4,521	25%	1,130
1	03	01	01	02		BC1 Installation Oversight	1-Aug-06	5-Jan-07	C	SL_ME1	Hrs	97		9,592		9,592	25%	2,398
1	03	01	01	02		BC1 Installation Oversight	1-Aug-06	5-Jan-07	C	SL_MDD	Hrs	65		5,389		5,389	25%	1,347
1	03	01	01	03		L02 System Integration						1,164	-	116,958	-	116,958		17,544
1	03	01	01	03		L2 Procurement Support	1-Dec-06	2-Jul-07	C	SL_ME1	Hrs	80		7,990		7,990	15%	1,198
1	03	01	01	03		L2 Fabrication Oversight	1-Dec-06	2-Jul-07	C	SL_ME1	Hrs	80		7,990		7,990	15%	1,198
1	03	01	01	03		L2 Installation Coordination Planning	8-Jan-07	2-Jul-07	C	SL_ME1	Hrs	160		15,979		15,979	15%	2,397
1	03	01	01	03		L2 Installation Oversight	4-Sep-07	31-Oct-07	C	SL_ME1	Hrs	80		8,099		8,099	15%	1,215
1	03	01	01	03		L2 Installation Oversight	4-Sep-07	31-Oct-07	C	SL_MDD	Hrs	40		3,395		3,395	15%	509
1	03	01	01	03		L2 Documentation	3-Dec-07	30-Jun-08	C	SL_ME1	Hrs	120		12,296		12,296	15%	1,844
1	03	01	01	03		L2 Documentation	3-Dec-07	30-Jun-08	C	SL_MDD	Hrs	200		17,182		17,182	15%	2,577
1	03	01	01	03		L2 System Construction Support to Components	1-Nov-07	30-Jun-08	C	SL_ME1	Hrs	120		12,296		12,296	15%	1,844
1	03	01	01	03		L2 System Construction Support to Components	1-Nov-07	30-Jun-08	C	SL_KE1	Hrs	120		13,916		13,916	15%	2,087
1	03	01	01	03		L2 System Construction Support to Components	1-Nov-07	30-Jun-08	C	SL_CE1	Hrs	120		13,916		13,916	15%	2,087
1	03	01	01	03		L2 Top Assembly	5-Jul-06	15-May-07	C	SL_ME1	Hrs	15		1,487		1,487	15%	223
1	03	01	01	03		L2 Top Assembly	5-Jul-06	15-May-07	C	SL_MDD	Hrs	29		2,411		2,411	15%	362
1	03	01	01	04		BC2 System Integration						3,872	-	376,139	-	376,139		94,035
1	03	01	01	04		BC2 Bunch Length Monitor Integration	2-Oct-06	2-Jul-07	C	SL_ME1	Hrs	600		59,922		59,922	25%	14,980
1	03	01	01	04		BC2 Emittance Section Layout	2-Oct-06	2-Jan-07	C	SL_ME1	Hrs	160		15,979		15,979	25%	3,995
1	03	01	01	04		BC2 Emittance Section Layout	2-Oct-06	2-Jan-07	C	SL_MDD	Hrs	160		13,397		13,397	25%	3,349
1	03	01	01	04		BC2 Emittance Section Design	3-Jan-07	2-Jul-07	C	SL_ME1	Hrs	160		15,979		15,979	25%	3,995
1	03	01	01	04		BC2 Emittance Section Design	3-Jan-07	2-Jul-07	C	SL_MDD	Hrs	160		13,397		13,397	25%	3,349
1	03	01	01	04		BC2 Procurement Support	3-Jan-07	2-Jul-07	C	SL_ME1	Hrs	160		15,979		15,979	25%	3,995
1	03	01	01	04		BC2 Fabrication Oversight	3-Jan-07	2-Jul-07	C	SL_ME1	Hrs	80		7,990		7,990	25%	1,997
1	03	01	01	04		BC2 Installation Coordination Planning	5-Jan-07	2-Jul-07	C	SL_ME1	Hrs	400		39,948		39,948	25%	9,987
1	03	01	01	04		BC2 Installation Oversight	4-Sep-07	31-Oct-07	C	SL_ME1	Hrs	120		12,148		12,148	25%	3,037
1	03	01	01	04		BC2 Installation Oversight	4-Sep-07	31-Oct-07	C	SL_MDD	Hrs	80		6,790		6,790	25%	1,698
1	03	01	01	04		BC2 Documentation	3-Dec-07	30-Jun-08	C	SL_ME1	Hrs	200		20,493		20,493	25%	5,123
1	03	01	01	04		BC2 Documentation	3-Dec-07	30-Jun-08	C	SL_MDD	Hrs	200		17,182		17,182	25%	4,296
1	03	01	01	04		BC2 System Construction Support to Component	3-Dec-07	30-Jun-08	C	SL_ME1	Hrs	200		20,493		20,493	25%	5,123
1	03	01	01	04		BC2 System Construction Support to Component	3-Dec-07	30-Jun-08	C	SL_KE1	Hrs	200		23,194		23,194	25%	5,799
1	03	01	01	04		BC2 System Construction Support to Component	3-Dec-07	30-Jun-08	C	SL_CE1	Hrs	200		23,194		23,194	25%	5,799
1	03	01	01	04		BC2 Top Assembly	5-Jul-06	1-May-07	C	SL_ME1	Hrs	264		26,170		26,170	25%	6,542
1	03	01	01	04		BC2 Top Assembly	5-Jul-06	1-May-07	C	SL_MDD	Hrs	528		43,883		43,883	25%	10,971
1	03	01	01	05		L03 System Integration						1,066	-	105,476	-	105,476		15,821
1	03	01	01	05		L3 Procurement Support	1-Dec-06	2-Jul-07	C	SL_ME1	Hrs	80		7,990		7,990	15%	1,198

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1	2	3	4	5	6							Hours	\$	Labor	M&S	Total			
1	03	01	01	05		L3 Fabrication Oversight	1-Dec-06	2-Jul-07	C	SL_ME1	Hrs	80		7,990		7,990	15%	1,198	
1	03	01	01	05		L3 Installation Coordination Planning	8-Jan-07	2-Jul-07	C	SL_ME1	Hrs	160		15,979		15,979	15%	2,397	
1	03	01	01	05		L3 Installation Oversight	4-Sep-07	31-Oct-07	C	SL_ME1	Hrs	80		8,099		8,099	15%	1,215	
1	03	01	01	05		L3 Installation Oversight	4-Sep-07	31-Oct-07	C	SL_MDD	Hrs	40		3,395		3,395	15%	509	
1	03	01	01	05		L3 Documentation	3-Dec-07	30-Jun-08	C	SL_ME1	Hrs	120		12,296		12,296	15%	1,844	
1	03	01	01	05		L3 Documentation	3-Dec-07	30-Jun-08	C	SL_MDD	Hrs	200		17,182		17,182	15%	2,577	
1	03	01	01	05		L3 System Construction Support to Components	3-Dec-07	30-Jun-08	C	SL_ME1	Hrs	80		8,197		8,197	15%	1,230	
1	03	01	01	05		L3 System Construction Support to Components	3-Dec-07	30-Jun-08	C	SL_KE1	Hrs	80		9,278		9,278	15%	1,392	
1	03	01	01	05		L3 System Construction Support to Components	3-Dec-07	30-Jun-08	C	SL_CE1	Hrs	80		9,278		9,278	15%	1,392	
1	03	01	01	05		L3 Top Assembly	5-Jul-06	30-Nov-06	C	SL_ME1	Hrs	22		2,164		2,164	15%	325	
1	03	01	01	05		L3 Top Assembly	5-Jul-06	30-Nov-06	C	SL_MDD	Hrs	44		3,629		3,629	15%	544	
1	03	01	01	06		LTU System Integration						3,608	150,000	339,286	161,353	500,639		150,192	
1	03	01	01	06		LTU Top Assembly	1-Aug-06	8-Jan-07	C	SL_ME1	Hrs	144		14,242		14,242	30%	4,273	
1	03	01	01	06		LTU Top Assembly	1-Aug-06	8-Jan-07	C	SL_MDD	Hrs	144		11,941		11,941	30%	3,582	
1	03	01	01	06		LTU Pedestal and Raft Design	8-Jan-07	30-May-07	C	SL_ME1	Hrs	160		15,979		15,979	30%	4,794	
1	03	01	01	06		LTU Pedestal and Raft Design	8-Jan-07	30-May-07	C	SL_MDD	Hrs	320		26,795		26,795	30%	8,038	
1	03	01	01	06		LTU Beamline Shielding Fabrication	4-Apr-07	9-Aug-07	C	SL_MSS	\$\$		75,000		80,644		80,644	30%	24,193
1	03	01	01	06		LTU Pedestal and Raft Fabrication	31-May-07	5-Oct-07	C	SL_MSS	\$\$		75,000		80,710		80,710	30%	24,213
1	03	01	01	06		LTU Procurement Support	8-Jan-07	27-Jun-07	C	SL_ME1	Hrs	80		7,990		7,990	30%	2,397	
1	03	01	01	06		LTU Fabrication Oversight	8-Jan-07	27-Jun-07	C	SL_ME1	Hrs	80		7,990		7,990	30%	2,397	
1	03	01	01	06		LTU Installation Coordination Planning	8-Jan-07	27-Jun-07	C	SL_ME1	Hrs	280		27,964		27,964	30%	8,389	
1	03	01	01	06		LTU Installation Oversight	21-Nov-07	24-Jan-08	C	SL_ME1	Hrs	160		16,395		16,395	30%	4,918	
1	03	01	01	06		LTU Installation Oversight	21-Nov-07	24-Jan-08	C	SL_MDD	Hrs	80		6,873		6,873	30%	2,062	
1	03	01	01	06		LTU Documentation	27-Feb-08	14-Aug-08	C	SL_ME1	Hrs	80		8,197		8,197	30%	2,459	
1	03	01	01	06		LTU Documentation	27-Feb-08	14-Aug-08	C	SL_MDD	Hrs	160		13,746		13,746	30%	4,124	
1	03	01	01	06		LTU Water System Design Support	27-Sep-06	21-Mar-07	C	SL_ME1	Hrs	400		39,925		39,925	30%	11,977	
1	03	01	01	06		LTU Vibration Engineering	27-Sep-06	21-Mar-07	C	SL_ME1	Hrs	320		31,940		31,940	30%	9,582	
1	03	01	01	06		LTU CF Interface	5-Jul-06	22-Mar-07	C	SL_ME1	Hrs	120		11,882		11,882	30%	3,564	
1	03	01	01	06		LTU Undulator Interface	5-Jul-06	22-Mar-07	C	SL_ME1	Hrs	120		11,882		11,882	30%	3,564	
1	03	01	01	06		LTU Spot Shielding Design	8-Jan-07	3-Apr-07	C	SL_ME1	Hrs	320		31,958		31,958	30%	9,587	
1	03	01	01	06		LTU Spot Shielding Design	8-Jan-07	3-Apr-07	C	SL_MDD	Hrs	320		26,795		26,795	30%	8,038	
1	03	01	01	06		LTU Installation Drawings	4-Apr-07	27-Jun-07	C	SL_MDD	Hrs	320		26,795		26,795	30%	8,038	
1	03	01	01	06		LTU Layout & CF Interface	5-Jul-06	31-Jul-06	C	SL_ME1	Hrs	-		-		-	30%	-	
1	03	01	01	06		LTU Layout & CF Interface	5-Jul-06	31-Jul-06	C	SL_MDD	Hrs	-		-		-	30%	-	
1	03	01	01	07		E-Dump System Integration						2,990	150,000	277,267	161,353	438,621		131,586	
1	03	01	01	07		E-Dump Top Assembly	1-Aug-06	8-Jan-07	C	SL_ME1	Hrs	144		14,242		14,242	30%	4,273	
1	03	01	01	07		E-Dump Top Assembly	1-Aug-06	8-Jan-07	C	SL_MDD	Hrs	216		17,912		17,912	30%	5,374	
1	03	01	01	07		E-Dump Pedestal and Raft Design	8-Jan-07	30-May-07	C	SL_ME1	Hrs	120		11,984		11,984	30%	3,595	
1	03	01	01	07		E-Dump Pedestal and Raft Design	8-Jan-07	30-May-07	C	SL_MDD	Hrs	320		26,795		26,795	30%	8,038	
1	03	01	01	07		E-Dump Beamline Shielding Fabrication	4-Apr-07	9-Aug-07	C	SL_MSS	\$\$		75,000		80,644		80,644	30%	24,193
1	03	01	01	07		E-Dump Pedestal and Raft Fabrication	31-May-07	5-Oct-07	C	SL_MSS	\$\$		75,000		80,710		80,710	30%	24,213
1	03	01	01	07		E-Dump Procurement Support	8-Jan-07	27-Jun-07	C	SL_ME1	Hrs	80		7,990		7,990	30%	2,397	
1	03	01	01	07		E-Dump Fabrication Oversight	8-Jan-07	27-Jun-07	C	SL_ME1	Hrs	80		7,990		7,990	30%	2,397	
1	03	01	01	07		E-Dump Installation Coordination Planning	8-Jan-07	27-Jun-07	C	SL_ME1	Hrs	160		15,979		15,979	30%	4,794	
1	03	01	01	07		E-Dump Installation Oversight	20-Nov-07	5-Dec-07	C	SL_ME1	Hrs	160		16,395		16,395	30%	4,918	
1	03	01	01	07		E-Dump Installation Oversight	20-Nov-07	5-Dec-07	C	SL_MDD	Hrs	80		6,873		6,873	30%	2,062	
1	03	01	01	07		E-Dump Documentation	27-Feb-08	14-Aug-08	C	SL_ME1	Hrs	80		8,197		8,197	30%	2,459	
1	03	01	01	07		E-Dump Documentation	27-Feb-08	14-Aug-08	C	SL_MDD	Hrs	80		6,873		6,873	30%	2,062	
1	03	01	01	07		E-Dump Water System Design Support	1-Aug-06	23-Jan-07	C	SL_ME1	Hrs	160		15,838		15,838	30%	4,751	
1	03	01	01	07		E-Dump Vibration Engineering	1-Aug-06	23-Jan-07	C	SL_ME1	Hrs	80		7,919		7,919	30%	2,376	
1	03	01	01	07		E-Dump CF Interface	5-Jul-06	22-Mar-07	C	SL_ME1	Hrs	120		11,882		11,882	30%	3,564	
1	03	01	01	07		E-Dump Undulator Interface	5-Jul-06	22-Mar-07	C	SL_ME1	Hrs	150		14,852		14,852	30%	4,456	

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1	2	3	4	5	6							Hours	\$	Labor	M&S	Total		
1	03	01	01	07		E-Dump Spot Shielding Design	8-Jan-07	3-Apr-07	C	SL_ME1	Hrs	320		31,958		31,958	30%	9,587
1	03	01	01	07		E-Dump Spot Shielding Design	8-Jan-07	3-Apr-07	C	SL_MDD	Hrs	320		26,795		26,795	30%	8,038
1	03	01	01	07		E-Dump Installation Drawings	4-Apr-07	27-Jun-07	C	SL_MDD	Hrs	320		26,795		26,795	30%	8,038
1	03	01	01	07		E-Dump Layout & CF Interface	5-Jul-06	31-Jul-06	C	SL_ME1	Hrs	-		-		-	30%	-
1	03	01	01	07		E-Dump Layout & CF Interface	5-Jul-06	31-Jul-06	C	SL_MDD	Hrs	-		-		-	30%	-
1	03	01	03			Travel						-	33,332	-	41,381	41,381		6,207
1	03	01	03			FY06 Travel	5-Jul-06	2-Oct-06	C	SL_MST	\$\$		1,332		1,599	1,599	15%	240
1	03	01	03			FY07 Travel	3-Oct-06	1-Oct-07	C	SL_MST	\$\$		20,000		24,624	24,624	15%	3,694
1	03	01	03			FY08 Travel	2-Oct-07	30-Sep-08	C	SL_MST	\$\$		12,000		15,159	15,159	15%	2,274
1	03	01	04			Linac Management						4,579	21,898	452,740	23,450	476,190		56,986
1	03	01	04			Computers - CONST	5-Jul-06	2-Jan-07	C	SL_MSE	\$\$		6,502		6,905	6,905	15%	1,036
1	03	01	04			Material & Supplies - CONST	5-Jul-06	2-Jan-07	C	SL_MSC	\$\$		6,502		6,905	6,905	15%	1,036
1	03	01	04			Injector System Area Management	5-Jul-06	2-Jan-07	C	SL_ME1	Hrs	391		38,568		38,568	15%	5,785
1	03	01	04			Injector System Tooling & Coordination	5-Jul-06	2-Jan-07	C	SL_MDD	Hrs	391		32,336		32,336	15%	4,850
1	03	01	04			Injector System Safety Coordination	5-Jul-06	2-Jan-07	C	SL_ME1	Hrs	260		25,646		25,646	15%	3,847
1	03	01	04			Linac System Management Effort - CONST	5-Jul-06	2-Jan-07	C	SL_TSM	Hrs	752		78,870		78,870	10%	7,887
1	03	01	04			Cost Account Managers - CONST	5-Jul-06	2-Jan-07	C	SL_ME1	Hrs	374		36,891		36,891	10%	3,689
1	03	01	04			Fabrication Coordination	5-Jul-06	2-Jan-07	C	SL_ME1	Hrs	550		54,252		54,252	10%	5,425
1	03	01	04			Computers - CONST 70%	3-Jan-07	30-Nov-07	C	SL_MSE	\$\$		3,761		4,063	4,063	15%	609
1	03	01	04			Material & Supplies - CONST 70%	3-Jan-07	30-Nov-07	C	SL_MSC	\$\$		3,761		4,063	4,063	15%	609
1	03	01	04			Injector System Area Management 70%	3-Jan-07	30-Nov-07	C	SL_ME1	Hrs	226		22,677		22,677	15%	3,402
1	03	01	04			Injector System Tooling & Coordination 70%	3-Jan-07	30-Nov-07	C	SL_MDD	Hrs	226		19,013		19,013	15%	2,852
1	03	01	04			Injector System Safety Coordination 70%	3-Jan-07	30-Nov-07	C	SL_ME1	Hrs	150		15,051		15,051	15%	2,258
1	03	01	04			Linac System Management Effort - CONST 70%	3-Jan-07	30-Nov-07	C	SL_TSM	Hrs	434		46,303		46,303	10%	4,630
1	03	01	04			Cost Account Managers - CONST 70%	3-Jan-07	30-Nov-07	C	SL_ME1	Hrs	217		21,774		21,774	10%	2,177
1	03	01	04			Fabrication Coordination 70%	3-Jan-07	30-Nov-07	C	SL_ME1	Hrs	319		32,009		32,009	10%	3,201
1	03	01	04			Computers - CONST 50%	3-Dec-07	29-Feb-08	C	SL_MSE	\$\$		686		757	757	15%	114
1	03	01	04			Material & Supplies - CONST 50%	3-Dec-07	29-Feb-08	C	SL_MSC	\$\$		686		757	757	15%	114
1	03	01	04			Injector System Area Management 50%	3-Dec-07	29-Feb-08	C	SL_ME1	Hrs	41		4,201		4,201	15%	630
1	03	01	04			Injector System Tooling & Coordination 50%	3-Dec-07	29-Feb-08	C	SL_MDD	Hrs	41		3,522		3,522	15%	528
1	03	01	04			Injector System Safety Coordination 50%	3-Dec-07	29-Feb-08	C	SL_ME1	Hrs	28		2,869		2,869	15%	430
1	03	01	04			Linac System Management Effort - CONST 50%	3-Dec-07	29-Feb-08	C	SL_TSM	Hrs	80		8,716		8,716	10%	872
1	03	01	04			Cost Account Managers - CONST 50%	3-Dec-07	29-Feb-08	C	SL_ME1	Hrs	40		4,099		4,099	10%	410
1	03	01	04			Fabrication Coordination 50%	3-Dec-07	29-Feb-08	C	SL_ME1	Hrs	58		5,943		5,943	10%	594
1	03	02				Linac Controls & Power Conversion Subsystem						26,813	4,903,651	2,230,971	5,262,683	7,493,654		1,962,703
1	03	03				Linac Magnets & Supports						8,384	845,900	758,207	909,453	1,667,660		248,947
1	03	03	01			Bend Magnet (BX1_BC1)						108	-	9,856	-	9,856		1,971
1	03	03	01			RCV: BX1 Magnet from Vendor	1-Aug-06	31-Aug-06	C	SL_MSE	\$\$		-		-	-	10%	-
1	03	03	01			BX1 Perform Magnetic Measurement	1-Aug-06	14-Aug-06	C	SL_MES	Hrs	36		2,817		2,817	20%	563
1	03	03	01			Perform Magnet Pre-Instlation Qual	1-Aug-06	13-Oct-06	C	SL_ME1	Hrs	72		7,038		7,038	20%	1,408
1	03	03	02			Bend Magnet (BX3_LTU)						856	65,000	76,407	69,891	146,298		29,260
1	03	03	02			BX3 Engineering Suppt Magnet Refurbish	8-Jan-07	3-Apr-07	C	SL_ME1	Hrs	40		3,995		3,995	20%	799
1	03	03	02			BX3 Refurbish Magnets from FFTB	8-Jan-07	3-Apr-07	C	SL_MFM	Hrs	80		8,824		8,824	20%	1,765
1	03	03	02			BX3 Refurbish Magnets from FFTB	8-Jan-07	3-Apr-07	C	SL_MFA	Hrs	240		20,684		20,684	20%	4,137
1	03	03	02			BX3 Perform Magnetic Measurement	4-Apr-07	1-May-07	C	SL_MES	Hrs	80		6,423		6,423	20%	1,285
1	03	03	02			BX3 Support Design	9-Jan-07	7-Mar-07	C	SL_ME1	Hrs	80		7,990		7,990	20%	1,598
1	03	03	02			BX3 Support Design	9-Jan-07	7-Mar-07	C	SL_MDD	Hrs	120		10,048		10,048	20%	2,010
1	03	03	02			RCV: BX3 Fabricate Magnet	4-Jun-07	4-Jun-07	C	SA_MSE	\$\$		50,000		53,762	53,762	20%	10,752
1	03	03	02			BX3 Design Safety Cover	8-Mar-07	2-May-07	C	SL_ME1	Hrs	16		1,598		1,598	20%	320
1	03	03	02			BX3 Design Safety Cover	8-Mar-07	2-May-07	C	SL_MDD	Hrs	160		13,397		13,397	20%	2,679
1	03	03	02			BX3 Fabricate Safety Cover	3-May-07	28-Jun-07	C	SL_MSE	\$\$		10,000		10,752	10,752	20%	2,150
1	03	03	02			BX3 Misc Hardware	8-Jan-07	8-Jun-07	C	SL_MSE	\$\$		5,000		5,376	5,376	20%	1,075

Detailed Cost Estimate
LINAC SYSTEM

WBS Level						LCLA DCE Aug-2006 Description	Early Start	Early Finish	Fund Type	Res Code	Units	Work Rem. Bud. Qty		Work Rem. Full Burd and Escltd Cost			Contngcy %	Contingency \$
1	2	3	4	5	6							Hours	\$	Labor	M&S	Total		
1	03	03	02			BX3 Final Assembly/Kit for Installation	29-Jun-07	13-Jul-07	C	SL_MFA	Hrs	40		3,447		3,447	20%	689
1	03	03	03			Bend Magnet (BX2_BC2)						160	97,400	13,630	104,729	118,359		7,962
1	03	03	03			RCV: BX2_BC2 Magnets from Vendor	16-Feb-07	16-Feb-07	C	SL_MSE	\$\$		97,400		104,729	104,729	5%	5,236
1	03	03	03			BX2 Perform Magnetic Measurement	20-Feb-07	19-Mar-07	C	SL_MES	Hrs	120		9,635		9,635	20%	1,927
1	03	03	03			Perform Magnet Pre-Instlation Qual	20-Mar-07	2-Apr-07	C	SL_ME1	Hrs	40		3,995		3,995	20%	799
1	03	03	04			Bend Magnet (BY_LTU)						728	85,000	64,986	91,396	156,382		23,457
1	03	03	04			BYLTU Engineering Suppt Magnet Refurbish	8-Jan-07	3-Apr-07	C	SL_ME1	Hrs	40		3,995		3,995	15%	599
1	03	03	04			BYLTU Refurbish Magnets from FFTB	8-Jan-07	3-Apr-07	C	SL_MFM	Hrs	40		4,412		4,412	15%	662
1	03	03	04			BYLTU Refurbish Magnets from FFTB	8-Jan-07	3-Apr-07	C	SL_MFA	Hrs	120		10,342		10,342	15%	1,551
1	03	03	04			BYLTU Perform Magnetic Measurement	4-Apr-07	1-May-07	C	SL_MES	Hrs	40		3,212		3,212	15%	482
1	03	03	04			BYLTU Support Design	9-Jan-07	7-Mar-07	C	SL_ME1	Hrs	120		11,984		11,984	15%	1,798
1	03	03	04			BYLTU Support Design	9-Jan-07	7-Mar-07	C	SL_MDD	Hrs	240		20,096		20,096	15%	3,014
1	03	03	04			BYLTU Fabricate Supports	4-Jun-07	4-Jun-07	C	SA_MSE	\$\$		75,000		80,644	80,644	15%	12,097
1	03	03	04			BYLTU Design Safety Covers	8-Mar-07	2-May-07	C	SL_ME1	Hrs	8		799		799	15%	120
1	03	03	04			BYLTU Design Safety Covers	8-Mar-07	2-May-07	C	SL_MDD	Hrs	80		6,699		6,699	15%	1,005
1	03	03	04			BYLTU Fabricate Safety Covers	3-May-07	28-Jun-07	C	SL_MSE	\$\$		5,000		5,376	5,376	15%	806
1	03	03	04			BYLTU Misc Hardware	4-Apr-07	4-Sep-07	C	SL_MSE	\$\$		5,000		5,376	5,376	15%	806
1	03	03	04			BYLTU Final Assembly/Kit for Installation	5-Sep-07	18-Sep-07	C	SL_MFA	Hrs	40		3,447		3,447	15%	517
1	03	03	05			Quad Magnet (Quad_LTU)						1,080	244,500	94,523	262,898	357,421		35,925
1	03	03	05			Engineering Support Magnet Refurbishment	8-Jan-07	3-Apr-07	C	SL_ME1	Hrs	120		11,984		11,984	15%	1,798
1	03	03	05			Refurbish Quad 0.91Q17.72 (qty 27)	8-Jan-07	3-Apr-07	C	SL_MFA	Hrs	400		34,474		34,474	15%	5,171
1	03	03	05			Measure Quad 0.91Q17.72 (qty 27)	4-Apr-07	1-May-07	C	SL_MES	Hrs	120		9,635		9,635	15%	1,445
1	03	03	05			Misc Material for Quad 0.91Q17.72 (qty 27)	8-Jan-07	3-Apr-07	C	SL_MSE	\$\$		5,000		5,376	5,376	15%	806
1	03	03	05			RCV: Everson Tesla Quad (req # 122832, qty 6)	1-Aug-06	31-Aug-06	C	SL_MSE	\$\$		-		-	-	5%	-
1	03	03	05			Measure Everson Tesla Quad (req # 122832, qty 6)	2-Aug-06	29-Aug-06	C	SL_MES	Hrs	40		3,130		3,130	15%	470
1	03	03	05			RCV: Everson Tesla Quad (req # 121416, qty 14)	16-Jan-07	16-Jan-07	C	SL_MSE	\$\$		164,500		176,878	176,878	5%	8,844
1	03	03	05			Measure Everson Tesla Quad (req #121416, qty 14)	17-Jan-07	13-Feb-07	C	SL_MES	Hrs	80		6,423		6,423	15%	964
1	03	03	05			LTU Quad Support Design	8-Jan-07	3-Apr-07	C	SL_ME1	Hrs	120		11,984		11,984	15%	1,798
1	03	03	05			LTU Quad Support Design	8-Jan-07	3-Apr-07	C	SL_MDD	Hrs	160		13,397		13,397	15%	2,010
1	03	03	05			LTU Quad Fabricate Supports	4-Apr-07	4-Sep-07	C	SL_MSE	\$\$		75,000		80,644	80,644	15%	12,097
1	03	03	05			Final Assembly LTU Quads	5-Sep-07	30-Oct-07	C	SL_MFA	Hrs	40		3,495		3,495	15%	524
1	03	03	07			Quad Magnet (QE_BC1/BC2)						100	-	8,326	-	8,326		1,249
1	03	03	07			Perform Magnetic Measurement (as required)	5-Jul-06	31-Jul-06	C	SL_MES	Hrs	-		-		-	15%	-
1	03	03	07			Assemble QE Magnets (qty 6)	5-Jul-06	24-Jan-07	C	SL_MFA	Hrs	60		5,114		5,114	15%	767
1	03	03	07			Magnetic Measure QE Magnets (qty 6)	25-Jan-07	22-Mar-07	C	SL_MES	Hrs	40		3,212		3,212	15%	482
1	03	03	07			RCV: Tweaker Quad (qty 4)	1-Aug-06	31-Aug-06	C	SL_MSE	\$\$		-		-	-	5%	-
1	03	03	07			Magnetic Measure Tweaker Quad	1-Aug-06	31-Aug-06	C	SL_MES	Hrs	-		-		-	15%	-
1	03	03	08			Corrector Magnet (Type 4_LTU/E-Dump)						760	-	70,530	-	70,530		14,106
1	03	03	08			Engineering Support Corrector Fabrication	8-Jan-07	1-May-07	C	SL_ME1	Hrs	120		11,984		11,984	20%	2,397
1	03	03	08			Fabricate Correctors	8-Jan-07	1-May-07	C	SL_MFM	Hrs	160		17,649		17,649	20%	3,530
1	03	03	08			Fabricate Correctors	8-Jan-07	1-May-07	C	SL_MFA	Hrs	400		34,474		34,474	20%	6,895
1	03	03	08			Magnetic Measure Correctors	2-May-07	27-Jun-07	C	SL_MES	Hrs	80		6,423		6,423	20%	1,285
1	03	03	09			Bend Magnet (BYD_E-Dump)						412	200,000	36,369	215,050	251,419		45,885
1	03	03	09			Prep Bid Pak - Magnets	1-Aug-06	26-Oct-06	C	SL_ME1	Hrs	2		196		196	25%	49
1	03	03	09			Prep Bid Pak - Magnets	1-Aug-06	26-Oct-06	C	SL_MDD	Hrs	1		82		82	25%	21
1	03	03	09			Evaluate Vendor Proposals - Magnets	29-Nov-06	12-Dec-06	C	SL_ME1	Hrs	8		799		799	25%	200
1	03	03	09			RCV: BYD Magnets	3-Aug-07	3-Aug-07	C	SA_MSE	\$\$		150,000		161,287	161,287	20%	32,257
1	03	03	09			BYD Magnetic Measurement	6-Aug-07	31-Aug-07	C	SL_MES	Hrs	40		3,212		3,212	15%	482
1	03	03	09			BYD Design Magnet Support	14-Dec-06	13-Mar-07	C	SL_ME1	Hrs	120		11,984		11,984	15%	1,798
1	03	03	09			BYD Design Magnet Support	14-Dec-06	13-Mar-07	C	SL_MDD	Hrs	240		20,096		20,096	15%	3,014
1	03	03	09			RCV: BYD Fabricate Supports	9-Jul-07	9-Jul-07	C	SA_MSE	\$\$		50,000		53,762	53,762	15%	8,064
1	03	03	10			Quad Magnet (E-Dump)						520	16,000	46,240	17,204	63,444		9,517

Detailed Cost Estimate
LINAC SYSTEM

WBS Level						LCLA DCE Aug-2006 Description	Early Start	Early Finish	Fund Type	Res Code	Units	Work Rem. Bud. Qty		Work Rem. Full Burd and Escltd Cost			Contngcy %	Contingency \$	
1	2	3	4	5	6							Hours	\$	Labor	M&S	Total			
1	03	03	10			Engineering Support Magnet Refurbishment	8-Jan-07	3-Apr-07	C	SL_ME1	Hrs	80		7,990		7,990	15%	1,198	
1	03	03	10			Refurbish Quadrupoles 3.25Q20 (qty 4)	8-Jan-07	3-Apr-07	C	SL_MFA	Hrs	160		13,789		13,789	15%	2,068	
1	03	03	10			Refurbish Quadrupoles 3.25Q20 (qty 4)	8-Jan-07	3-Apr-07	C	SL_MES	Hrs	40		3,212		3,212	15%	482	
1	03	03	10			Measure Quadrupoles 3.25Q20 (qty 4)	4-Apr-07	1-May-07	C	SL_MES	Hrs	40		3,212		3,212	15%	482	
1	03	03	10			Misc Materials for 3.25Q20 refurbish	8-Jan-07	3-Apr-07	C	SL_MSE	\$\$		1,000		1,075		1,075	15%	161
1	03	03	10			Dump Quad Support Design	8-Jan-07	6-Mar-07	C	SL_ME1	Hrs	80		7,990		7,990	15%	1,198	
1	03	03	10			Dump Quad Support Design	8-Jan-07	6-Mar-07	C	SL_MDD	Hrs	120		10,048		10,048	15%	1,507	
1	03	03	10			Dump Quad Fabricate Supports	7-Mar-07	1-May-07	C	SL_MSE	\$\$		15,000		16,129		16,129	15%	2,419
1	03	03	11			Bend Magnet (BYPM_LTU)						1,120	80,000	100,782	85,921	186,703		28,005	
1	03	03	11			BXPM Design Change in Magnet Gap	5-Jul-06	31-Aug-06	C	SL_ME1	Hrs	-		-		-	15%	-	
1	03	03	11			BXPM Design Change in Magnet Gap	5-Jul-06	31-Aug-06	C	SL_MDD	Hrs	-		-		-	15%	-	
1	03	03	11			BXPM Test Strength of Increased Gap	2-Aug-06	27-Sep-06	C	SL_MES	Hrs	80		6,261		6,261	15%	939	
1	03	03	11			BXPM Test Strength of Increased Gap	2-Aug-06	27-Sep-06	C	SL_ME1	Hrs	80		7,787		7,787	15%	1,168	
1	03	03	11			BXPM Engineering Support Magnet Refurb	28-Sep-06	22-Dec-06	C	SL_ME1	Hrs	80		7,982		7,982	15%	1,197	
1	03	03	11			BXPM Refurbish FFTB Dump Bends (qty 4)	28-Sep-06	22-Dec-06	C	SL_MFA	Hrs	160		13,777		13,777	15%	2,067	
1	03	03	11			BXPM Modify Gap FFTB Dump Bends (qty 4)	26-Dec-06	22-Mar-07	C	SL_MFM	Hrs	80		8,824		8,824	15%	1,324	
1	03	03	11			BXPM Modify Gap FFTB Dump Bends (qty 4)	26-Dec-06	22-Mar-07	C	SL_MFA	Hrs	160		13,789		13,789	15%	2,068	
1	03	03	11			BXPM Misc Materials for Refurbish & Regap	1-Aug-06	24-Oct-06	C	SL_MSE	\$\$		5,000		5,277		5,277	15%	792
1	03	03	11			BXPM Measure Regapped Bends (qty 4)	23-Mar-07	19-Apr-07	C	SL_MES	Hrs	120		9,635		9,635	15%	1,445	
1	03	03	11			BXPM Support Design	23-Mar-07	17-May-07	C	SL_ME1	Hrs	160		15,979		15,979	15%	2,397	
1	03	03	11			BXPM Support Design	23-Mar-07	17-May-07	C	SL_MDD	Hrs	200		16,747		16,747	15%	2,512	
1	03	03	11			RCV: BXPM Fabricate Supports	15-Aug-07	15-Aug-07	C	SA_MSE	\$\$		75,000		80,644		80,644	15%	12,097
1	03	03	12			Bend Magnet (BYKIK_LTU)						840	5,000	78,282	5,376	83,658		12,549	
1	03	03	12			BYKIK Define Test Coil Parameters	1-Aug-06	31-Aug-06	C	SL_ME1	Hrs	-		-		-	15%	-	
1	03	03	12			BYKIK Interface to Power Supply Design	1-Aug-06	24-Oct-06	C	SL_ME1	Hrs	40		3,921		3,921	15%	588	
1	03	03	12			BYKIK Wind Test Coil	25-Oct-06	21-Nov-06	C	SL_MFA	Hrs	120		10,342		10,342	15%	1,551	
1	03	03	12			BYKIK Perform Pulse Tests	22-Nov-06	23-Jan-07	C	SL_MES	Hrs	40		3,212		3,212	15%	482	
1	03	03	12			BYKIK Perform Pulse Tests	22-Nov-06	23-Jan-07	C	SL_ME1	Hrs	80		7,990		7,990	15%	1,198	
1	03	03	12			BYKIK Design Kicker and Support	22-Nov-06	23-Jan-07	C	SL_ME1	Hrs	160		15,979		15,979	15%	2,397	
1	03	03	12			BYKIK Design Kicker and Support	22-Nov-06	23-Jan-07	C	SL_MDD	Hrs	120		10,048		10,048	15%	1,507	
1	03	03	12			BYKIK Fabricate Kicker and Support	24-Jan-07	18-Apr-07	C	SL_MFM	Hrs	120		13,236		13,236	15%	1,985	
1	03	03	12			BYKIK Fabricate Kicker and Support	24-Jan-07	18-Apr-07	C	SL_MFA	Hrs	120		10,342		10,342	15%	1,551	
1	03	03	12			BYKIK Misc Materials for BYKIK	25-Oct-06	23-Jan-07	C	SL_MSE	\$\$		5,000		5,376		5,376	15%	806
1	03	03	12			BYKIK Measure Kicker	19-Apr-07	14-Jun-07	C	SL_MES	Hrs	40		3,212		3,212	15%	482	
1	03	03	13			Bend Magnet (BYW_LTU)						480	12,000	42,930	12,903	55,833		8,375	
1	03	03	13			BYW Engineering Support Magnet Refurbishment	8-Jan-07	3-Apr-07	C	SL_ME1	Hrs	80		7,990		7,990	15%	1,198	
1	03	03	13			BYW Refurbish FFTB Wiggler (qty 1)	8-Jan-07	3-Apr-07	C	SL_MFA	Hrs	120		10,342		10,342	15%	1,551	
1	03	03	13			BYW Misc Materials for FFTB Wiggler Refurb	8-Jan-07	3-Apr-07	C	SL_MSE	\$\$		2,000		2,150		2,150	15%	323
1	03	03	13			BYW Measure Refurbished FFTB Wiggler	4-Apr-07	1-May-07	C	SL_MES	Hrs	40		3,212		3,212	15%	482	
1	03	03	13			BYW Support Design	2-May-07	27-Jun-07	C	SL_ME1	Hrs	80		7,990		7,990	15%	1,198	
1	03	03	13			BYW Support Design	2-May-07	27-Jun-07	C	SL_MDD	Hrs	160		13,397		13,397	15%	2,010	
1	03	03	13			BYW Fabricate Supports	28-Jun-07	23-Aug-07	C	SL_MSE	\$\$		10,000		10,752		10,752	15%	1,613
1	03	03	14			BXKIK LINAC TCAV Screen Kicker						920	5,000	86,345	5,376	91,721		13,758	
1	03	03	14			BXKIK Define Test Coil Parameters	8-Jan-07	5-Feb-07	C	SL_ME1	Hrs	40		3,995		3,995	15%	599	
1	03	03	14			BXKIK Interface to Power Supply Design	6-Feb-07	6-Mar-07	C	SL_ME1	Hrs	80		7,990		7,990	15%	1,198	
1	03	03	14			BXKIK Wind Test Coil	7-Mar-07	3-Apr-07	C	SL_MFA	Hrs	120		10,342		10,342	15%	1,551	
1	03	03	14			BXKIK Perform Pulse Test	4-Apr-07	1-May-07	C	SL_MES	Hrs	40		3,212		3,212	15%	482	
1	03	03	14			BXKIK Perform Pulse Test	4-Apr-07	1-May-07	C	SL_ME1	Hrs	80		7,990		7,990	15%	1,198	
1	03	03	14			BXKIK Design Kicker and Support	4-Apr-07	30-May-07	C	SL_ME1	Hrs	160		15,979		15,979	15%	2,397	
1	03	03	14			BXKIK Design Kicker and Support	4-Apr-07	30-May-07	C	SL_MDD	Hrs	120		10,048		10,048	15%	1,507	
1	03	03	14			BXKIK Fabricate Kicker and Support	31-May-07	26-Jul-07	C	SL_MFM	Hrs	120		13,236		13,236	15%	1,985	
1	03	03	14			BXKIK Fabricate Kicker and Support	31-May-07	26-Jul-07	C	SL_MFA	Hrs	120		10,342		10,342	15%	1,551	

Detailed Cost Estimate
LINAC SYSTEM

WBS Level						LCLA DCE Aug-2006 Description	Early Start	Early Finish	Fund Type	Res Code	Units	Work Rem. Bud. Qty		Work Rem. Full Burd and Escltd Cost			Contngcy %	Contingency \$
1	2	3	4	5	6							Hours	\$	Labor	M&S	Total		
1	03	03	14			BXKIK Misc Materials	7-Mar-07	30-May-07	C	SL_MSE	\$\$		5,000		5,376	5,376	15%	806
1	03	03	14			BXKIK Measure Kicker	27-Jul-07	10-Aug-07	C	SL_MES	Hrs	40		3,212		3,212	15%	482
1	03	03	15			Muon Toroid (E-Dump)						300	36,000	29,001	38,709	67,710		16,927
1	03	03	15			MuToro Establish Toroid Parameters	1-Aug-06	28-Aug-06	C	SL_ME1	Hrs	20		1,947		1,947	25%	487
1	03	03	15			MuToro Purchase Toroid	29-Aug-06	21-Nov-06	C	SL_ME1	Hrs	40		3,955		3,955	25%	989
1	03	03	15			RCV: MuToro from Vendor	22-Feb-07	22-Feb-07	C	SL_MSE	\$\$		35,000		37,634	37,634	25%	9,408
1	03	03	15			MuToro Design Toro Support	22-Feb-07	18-Apr-07	C	SL_ME1	Hrs	120		11,984		11,984	25%	2,996
1	03	03	15			MuToro Design Toro Support	22-Feb-07	18-Apr-07	C	SL_MDD	Hrs	40		3,349		3,349	25%	837
1	03	03	15			MuToro Fabricate Toro Support	19-Apr-07	13-Jul-07	C	SL_MFM	Hrs	40		4,412		4,412	25%	1,103
1	03	03	15			MuToro Fabricate Toro Support	19-Apr-07	13-Jul-07	C	SL_MFA	Hrs	24		2,068		2,068	25%	517
1	03	03	15			MuToro Misc Materials Toro	23-Feb-07	17-May-07	C	SL_MSE	\$\$		1,000		1,075	1,075	25%	269
1	03	03	15			MuToro Measure Toro	23-Feb-07	22-Mar-07	C	SL_MES	Hrs	16		1,285		1,285	25%	321
1	03	04				Linac Vacuum Subsystem						11,320	938,338	1,048,136	1,008,946	2,057,082		452,729
1	03	04	02			Linac Beamline Vacuum System						880	65,000	80,532	69,891	150,423		30,085
1	03	04	02			Design L2 Vacuum Drifts and Supports	2-Oct-06	27-Dec-06	C	SL_ME1	Hrs	120		11,984		11,984	20%	2,397
1	03	04	02			Design L2 Vacuum Drifts and Supports	2-Oct-06	27-Dec-06	C	SL_MDD	Hrs	160		13,397		13,397	20%	2,679
1	03	04	02			Engineering Fabrication Support L2 Vacuum	28-Dec-06	23-Apr-07	C	SL_ME1	Hrs	80		7,990		7,990	20%	1,598
1	03	04	02			RCV: L2 Vacuum Drifts and Supports	24-Apr-07	24-Apr-07	C	SL_MSE	\$\$		30,000		32,257	32,257	20%	6,451
1	03	04	02			Vacuum Process L2 Drifts	22-May-07	18-Jul-07	C	SL_MFA	Hrs	80		6,895		6,895	20%	1,379
1	03	04	02			Design L3 Vacuum Drifts and Supports	28-Dec-06	26-Mar-07	C	SL_ME1	Hrs	120		11,984		11,984	20%	2,397
1	03	04	02			Design L3 Vacuum Drifts and Supports	28-Dec-06	26-Mar-07	C	SL_MDD	Hrs	160		13,397		13,397	20%	2,679
1	03	04	02			Engineering Fabrication Support L3 Vacuum	27-Mar-07	21-May-07	C	SL_ME1	Hrs	80		7,990		7,990	20%	1,598
1	03	04	02			RCV: L3 Vacuum Drifts and Supports	22-May-07	22-May-07	C	SL_MSE	\$\$		30,000		32,257	32,257	20%	6,451
1	03	04	02			Vacuum Process L3 Drifts	23-May-07	19-Jul-07	C	SL_MFA	Hrs	80		6,895		6,895	20%	1,379
1	03	04	02			L2/L3 Misc Girder Hardware	22-May-07	18-Jul-07	C	SL_MSE	\$\$		5,000		5,376	5,376	20%	1,075
1	03	04	02			Fabricate L1 Vacuum Hardware and Supports	5-Jul-06	24-Jul-06	C	SL_MSE	\$\$		-		-	-	20%	-
1	03	04	02			Develop Final Design - L2 and L3	5-Jul-06	31-Jul-06	C	SL_MDD	Hrs	-		-		-	20%	-
1	03	04	03			BC1 Vacuum System						40	-	3,894	-	3,894		973
1	03	04	03			Perform Pre-Installation Qual Test	2-Aug-06	29-Aug-06	C	SL_ME1	Hrs	40		3,894		3,894	25%	973
1	03	04	03			Process Vacuum Chamber	5-Jul-06	31-Jul-06	C	SL_MFA	Hrs	-		-		-	25%	-
1	03	04	04			BC2 Vacuum System						1,500	275,000	134,337	295,693	430,030		129,009
1	03	04	04			Design BC2 Vac & Articulation	1-Aug-06	21-Nov-06	C	SL_ME1	Hrs	360		35,457		35,457	30%	10,637
1	03	04	04			Design BC2 Vac & Articulation	1-Aug-06	21-Nov-06	C	SL_MDD	Hrs	540		44,592		44,592	30%	13,378
1	03	04	04			Engineering Fab Support BC2 Vac & Articulation	22-Nov-06	21-Mar-07	C	SL_ME1	Hrs	120		11,984		11,984	30%	3,595
1	03	04	04			RCV: BC2 Vac & Articulation	20-Apr-07	20-Apr-07	C	SA_MSE	\$\$		275,000		295,693	295,693	30%	88,708
1	03	04	04			Process Vacuum Chamber	23-Apr-07	18-May-07	C	SL_MFA	Hrs	120		10,342		10,342	30%	3,103
1	03	04	04			Perform QC and Inspection	21-May-07	18-Jun-07	C	SL_MES	Hrs	120		9,635		9,635	30%	2,891
1	03	04	04			Perform Pre-Installation Qual Test	19-Jun-07	17-Jul-07	C	SL_MFA	Hrs	120		10,342		10,342	30%	3,103
1	03	04	04			Perform Pre-Installation Qual Test	19-Jun-07	17-Jul-07	C	SL_ME1	Hrs	120		11,984		11,984	30%	3,595
1	03	04	05			Linac to Undulator (LTU) Vacuum System						3,320	230,000	305,870	247,307	553,177		90,739
1	03	04	05			Model Vacuum System	8-Jan-07	6-Mar-07	C	SL_ME1	Hrs	200		19,974		19,974	15%	2,996
1	03	04	05			Design Drifts	7-Mar-07	30-May-07	C	SL_ME1	Hrs	160		15,979		15,979	15%	2,397
1	03	04	05			Design Drifts	7-Mar-07	30-May-07	C	SL_MDD	Hrs	400		33,493		33,493	15%	5,024
1	03	04	05			Design Drift Supports	7-Mar-07	30-May-07	C	SL_ME1	Hrs	200		19,974		19,974	15%	2,996
1	03	04	05			Design Drift Supports	7-Mar-07	30-May-07	C	SL_MDD	Hrs	400		33,493		33,493	15%	5,024
1	03	04	05			Design Pump Supports	7-Mar-07	30-May-07	C	SL_ME1	Hrs	80		7,990		7,990	15%	1,198
1	03	04	05			Design Pump Supports	7-Mar-07	30-May-07	C	SL_MDD	Hrs	160		13,397		13,397	15%	2,010
1	03	04	05			Engineering Support Purchasing	31-May-07	26-Jul-07	C	SL_ME1	Hrs	160		15,979		15,979	10%	1,598
1	03	04	05			RCV: Vacuum Hardware	27-Aug-07	27-Aug-07	C	SA_MSE	\$\$		100,000		107,525	107,525	15%	16,129
1	03	04	05			RCV: Vacuum Drifts	27-Aug-07	27-Aug-07	C	SA_MSE	\$\$		50,000		53,762	53,762	15%	8,064
1	03	04	05			RCV: Drift Supports	27-Aug-07	27-Aug-07	C	SA_MSE	\$\$		50,000		53,762	53,762	15%	8,064
1	03	04	05			Purchase Pump Supports	29-Jun-07	24-Aug-07	C	SL_MSE	\$\$		20,000		21,505	21,505	15%	3,226

Detailed Cost Estimate
LINAC SYSTEM

WBS Level						LCLA DCE Aug-2006 Description	Early Start	Early Finish	Fund Type	Res Code	Units	Work Rem. Bud. Qty		Work Rem. Full Burd and Escltd Cost			Contngcy %	Contingency \$	
1	2	3	4	5	6							Hours	\$	Labor	M&S	Total			
1	03	04	05			Vacuum Process Vacuum Hardware	28-Aug-07	23-Oct-07	C	SL_MFA	Hrs	200		17,413		17,413	15%	2,612	
1	03	04	05			Vacuum Process Vacuum Hardware	28-Aug-07	23-Oct-07	C	SL_ME1	Hrs	160		16,142		16,142	15%	2,421	
1	03	04	05			Vacuum Process Drifts	28-Aug-07	20-Nov-07	C	SL_MFA	Hrs	200		17,504		17,504	15%	2,626	
1	03	04	05			Vacuum Process Drifts	28-Aug-07	20-Nov-07	C	SL_ME1	Hrs	160		16,226		16,226	15%	2,434	
1	03	04	05			Design Dump Kicker Chamber	1-Nov-06	30-Jan-07	C	SL_ME1	Hrs	160		15,979		15,979	25%	3,995	
1	03	04	05			Design Dump Kicker Chamber	1-Nov-06	30-Jan-07	C	SL_MDD	Hrs	160		13,397		13,397	25%	3,349	
1	03	04	05			Design Dump Kicker Chamber Supports	31-Jan-07	25-Apr-07	C	SL_ME1	Hrs	40		3,995		3,995	25%	999	
1	03	04	05			Design Dump Kicker Chamber Supports	31-Jan-07	25-Apr-07	C	SL_MDD	Hrs	120		10,048		10,048	25%	2,512	
1	03	04	05			Fabricate Dump Kicker Chamber	31-Jan-07	23-May-07	C	SL_MFM	Hrs	80		8,824		8,824	25%	2,206	
1	03	04	05			Fabricate Dump Kicker Chamber	31-Jan-07	23-May-07	C	SL_MFA	Hrs	80		6,895		6,895	25%	1,724	
1	03	04	05			Dump Kicker Chamber Material	31-Jan-07	23-May-07	C	SL_MSE	\$\$		10,000		10,752		10,752	25%	2,688
1	03	04	05			Fabricate Dump Kicker Chamber Supports	26-Apr-07	25-Jun-07	C	SL_MFM	Hrs	80		8,824		8,824	25%	2,206	
1	03	04	05			Fabricate Dump Kicker Chamber Supports	26-Apr-07	25-Jun-07	C	SL_MFA	Hrs	80		6,895		6,895	25%	1,724	
1	03	04	05			Vacuum Process Dump Chamber	26-Jun-07	24-Jul-07	C	SL_MFA	Hrs	40		3,447		3,447	15%	517	
1	03	04	06			Dumpline Vacuum System						3,360	90,000	312,536	96,772	409,309		81,402	
1	03	04	06			Model Dump Vacuum System	8-Jan-07	6-Mar-07	C	SL_ME1	Hrs	120		11,984		11,984	15%	1,798	
1	03	04	06			Design Dump Drifts	7-Mar-07	1-May-07	C	SL_ME1	Hrs	80		7,990		7,990	15%	1,198	
1	03	04	06			Design Dump Drifts	7-Mar-07	1-May-07	C	SL_MDD	Hrs	200		16,747		16,747	15%	2,512	
1	03	04	06			Design Dump Drift Supports	2-May-07	27-Jun-07	C	SL_ME1	Hrs	80		7,990		7,990	15%	1,198	
1	03	04	06			Design Dump Drift Supports	2-May-07	27-Jun-07	C	SL_MDD	Hrs	120		10,048		10,048	15%	1,507	
1	03	04	06			Design Dump Pump Suppports	2-May-07	27-Jun-07	C	SL_ME1	Hrs	80		7,990		7,990	15%	1,198	
1	03	04	06			Design Dump Pump Suppports	2-May-07	27-Jun-07	C	SL_MDD	Hrs	120		10,048		10,048	15%	1,507	
1	03	04	06			Engineering Support Dump Vacuum Purchasing	2-May-07	26-Jul-07	C	SL_ME1	Hrs	80		7,990		7,990	15%	1,198	
1	03	04	06			Purchase Dump Vacuum Hardware	2-May-07	26-Jul-07	C	SL_MSE	\$\$		50,000		53,762		53,762	15%	8,064
1	03	04	06			Purchase Dump Vacuum Drifts	2-May-07	26-Jul-07	C	SL_MSE	\$\$		15,000		16,129		16,129	15%	2,419
1	03	04	06			Purchase Dump Drift Supports	28-Jun-07	21-Sep-07	C	SL_MSE	\$\$		10,000		10,752		10,752	15%	1,613
1	03	04	06			Purchase Dump Pump Supports	28-Jun-07	21-Sep-07	C	SL_MSE	\$\$		10,000		10,752		10,752	15%	1,613
1	03	04	06			Vacuum Process Dump Vacuum Hardware	27-Jul-07	19-Nov-07	C	SL_MFA	Hrs	120		10,457		10,457	15%	1,568	
1	03	04	06			Vacuum Process Dump Vacuum Hardware	27-Jul-07	19-Nov-07	C	SL_ME1	Hrs	80		8,078		8,078	15%	1,212	
1	03	04	06			Vacuum Process Dump Drifts	27-Jul-07	19-Nov-07	C	SL_MFA	Hrs	120		10,457		10,457	15%	1,568	
1	03	04	06			Vacuum Process Dump Drifts	27-Jul-07	19-Nov-07	C	SL_ME1	Hrs	80		8,078		8,078	15%	1,212	
1	03	04	06			Design Dump Chamber	7-Mar-07	1-May-07	C	SL_ME1	Hrs	120		11,984		11,984	25%	2,996	
1	03	04	06			Design Dump Chamber	7-Mar-07	1-May-07	C	SL_MDD	Hrs	200		16,747		16,747	25%	4,187	
1	03	04	06			Design Dump Chamber Supports	2-May-07	27-Jun-07	C	SL_ME1	Hrs	80		7,990		7,990	25%	1,997	
1	03	04	06			Design Dump Chamber Supports	2-May-07	27-Jun-07	C	SL_MDD	Hrs	160		13,397		13,397	25%	3,349	
1	03	04	06			Fabricate Dump Chamber	2-May-07	26-Jul-07	C	SL_MFM	Hrs	160		17,649		17,649	25%	4,412	
1	03	04	06			Fabricate Dump Chamber	2-May-07	26-Jul-07	C	SL_MFA	Hrs	120		10,342		10,342	25%	2,586	
1	03	04	06			Dump Kicker Chamber Materials	2-May-07	26-Jul-07	C	SL_MSE	\$\$		2,500		2,688		2,688	25%	672
1	03	04	06			Fabricate Dump Chamber Supports	28-Jun-07	23-Aug-07	C	SL_MFM	Hrs	80		8,824		8,824	25%	2,206	
1	03	04	06			Fabricate Dump Chamber Supports	28-Jun-07	23-Aug-07	C	SL_MFA	Hrs	80		6,895		6,895	25%	1,724	
1	03	04	06			Vacuum Process Dump Chamber	27-Jul-07	23-Aug-07	C	SL_MFA	Hrs	40		3,447		3,447	25%	862	
1	03	04	06			Design Safety Dump Chamber	2-May-07	27-Jun-07	C	SL_ME1	Hrs	120		11,984		11,984	25%	2,996	
1	03	04	06			Design Safety Dump Chamber	2-May-07	27-Jun-07	C	SL_MDD	Hrs	200		16,747		16,747	25%	4,187	
1	03	04	06			Design Safety Dump Chamber Supports	28-Jun-07	23-Aug-07	C	SL_ME1	Hrs	80		7,990		7,990	25%	1,997	
1	03	04	06			Design Safety Dump Chamber Supports	28-Jun-07	23-Aug-07	C	SL_MDD	Hrs	160		13,397		13,397	25%	3,349	
1	03	04	06			Fabricate Safety Dump Chamber	28-Jun-07	23-Aug-07	C	SL_MFM	Hrs	160		17,649		17,649	25%	4,412	
1	03	04	06			Fabricate Safety Dump Chamber	28-Jun-07	23-Aug-07	C	SL_MFA	Hrs	120		10,342		10,342	25%	2,586	
1	03	04	06			Safety Dump Chamber Materials	28-Jun-07	23-Aug-07	C	SL_MSE	\$\$		2,500		2,688		2,688	25%	672
1	03	04	06			Fabricate Safety Dump Chamber Supports	24-Aug-07	19-Oct-07	C	SL_MFM	Hrs	80		8,898		8,898	25%	2,225	
1	03	04	06			Fabricate Safety Dump Chamber Supports	24-Aug-07	19-Oct-07	C	SL_MFA	Hrs	80		6,952		6,952	25%	1,738	
1	03	04	06			Vacuum Process Safety Dump Chamber	24-Aug-07	21-Sep-07	C	SL_MFA	Hrs	40		3,447		3,447	25%	862	
1	03	04	07			Vacuum System Undulator Interface						1,700	193,338	161,547	207,886	369,433		92,358	

Detailed Cost Estimate
LINAC SYSTEM

WBS Level						LCLA DCE Aug-2006 Description	Early Start	Early Finish	Fund Type	Res Code	Units	Work Rem. Bud. Qty		Work Rem. Full Burd and Escltd Cost			Contngcy %	Contingency \$
1	2	3	4	5	6							Hours	\$	Labor	M&S	Total		
1	03	04	07	01		Entrance Section Assembly						848	83,819	80,700	90,126	170,826		42,707
1	03	04	07	01		Prelim Design Ent Sec	2-Aug-06	6-Sep-06	C	SL_PHS	Hrs	8		570		570	25%	143
1	03	04	07	01		Prelim Design Ent Sec	2-Aug-06	6-Sep-06	C	SL_MVE	Hrs	32		3,312		3,312	25%	828
1	03	04	07	01		Prelim Design Ent Sec	2-Aug-06	6-Sep-06	C	SL_MDD	Hrs	64		5,223		5,223	25%	1,306
1	03	04	07	01		Mechanical Analysis Ent Sec	7-Sep-06	20-Sep-06	C	SL_MVE	Hrs	8		828		828	25%	207
1	03	04	07	01		Mechanical Analysis Ent Sec	7-Sep-06	20-Sep-06	C	SL_ME1	Hrs	24		2,336		2,336	25%	584
1	03	04	07	01		Prelim Design Review Ent Sec	21-Sep-06	27-Sep-06	C	SL_PHS	Hrs	8		570		570	25%	143
1	03	04	07	01		Prelim Design Review Ent Sec	21-Sep-06	27-Sep-06	C	SL_MVE	Hrs	16		1,656		1,656	25%	414
1	03	04	07	01		Prelim Design Review Ent Sec	21-Sep-06	27-Sep-06	C	SL_MDD	Hrs	16		1,306		1,306	25%	326
1	03	04	07	01		Final Design Ent Sec	28-Sep-06	11-Oct-06	C	SL_PHS	Hrs	8		582		582	25%	145
1	03	04	07	01		Final Design Ent Sec	28-Sep-06	11-Oct-06	C	SL_MVE	Hrs	24		2,534		2,534	25%	633
1	03	04	07	01		Final Design Ent Sec	28-Sep-06	11-Oct-06	C	SL_MDD	Hrs	40		3,330		3,330	25%	832
1	03	04	07	01		Bid Process Bid Pkg	7-Sep-06	11-Oct-06	C	SL_MVE	Hrs	16		1,669		1,669	25%	417
1	03	04	07	01		Evaluate Bids - Entrance Section	12-Oct-06	16-Oct-06	C	SL_MVE	Hrs	24		2,549		2,549	25%	637
1	03	04	07	01		AWARD: Standard Entrance Chamber Sppt	17-Oct-06	19-Oct-06	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	01		AWARD: Entrance Bellows Sppt	17-Oct-06	19-Oct-06	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	01		AWARD: Entrance Upstream Chamber Sppt	17-Oct-06	19-Oct-06	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	01		AWARD: Pump Manifold Sppt	17-Oct-06	19-Oct-06	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	01		AWARD: Ion Pump (1) Sppt	17-Oct-06	19-Oct-06	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	01		AWARD: Ion Pump Controller (1) Sppt	17-Oct-06	19-Oct-06	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	01		AWARD: Ion Pump Cable (1) Sppt	17-Oct-06	19-Oct-06	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	01		AWARD: Turbo Pump SPPT	17-Oct-06	19-Oct-06	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	01		AWARD: Gate Valve (1) Sppt	17-Oct-06	19-Oct-06	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	01		AWARD: Roughing Pump SPPT	17-Oct-06	19-Oct-06	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	01		AWARD: Pneumatic Gate Valve SPPT	17-Oct-06	19-Oct-06	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	01		AWARD: Valves (1) Sppt	17-Oct-06	19-Oct-06	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	01		AWARD: Vacuum Gauge (1) Sppt	17-Oct-06	19-Oct-06	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	01		AWARD: RGA (1) Sppt	17-Oct-06	19-Oct-06	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	01		AWARD: Standard Entrance Chamber Support Sppt	17-Oct-06	19-Oct-06	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	01		AWARD: Entrance Chamber Mount Sppt	17-Oct-06	19-Oct-06	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	01		AWARD: Ion Pump Support (1) Sppt	17-Oct-06	19-Oct-06	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	01		AWARD: Gate Valve Support Sppt	17-Oct-06	19-Oct-06	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	01		AWARD: RGA Support Sppt	17-Oct-06	19-Oct-06	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	01		Rec: Standard Entrance Chamber	20-Oct-06	18-Dec-06	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	01		Rec: Standard Entrance Chamber	20-Oct-06	18-Dec-06	C	SL_MSE	\$\$		1,520		1,634	25%	409	
1	03	04	07	01		Rec: Standard Entrance Chamber	20-Oct-06	18-Dec-06	C	SL_MFA	Hrs	8		689		689	25%	172
1	03	04	07	01		Rec: Entrance Bellows	20-Oct-06	18-Dec-06	C	SL_MSE	\$\$		700		753	25%	188	
1	03	04	07	01		Rec: Entrance Upstream Chamber	20-Oct-06	18-Dec-06	C	SL_MSE	\$\$		850		914	25%	228	
1	03	04	07	01		Rec: Pump Manifold	20-Oct-06	18-Dec-06	C	SL_MSE	\$\$		1,100		1,183	25%	296	
1	03	04	07	01		Rec: Ion Pump	20-Oct-06	18-Dec-06	C	SL_MSE	\$\$		2,500		2,688	25%	672	
1	03	04	07	01		Rec: Ion Pump Controller	20-Oct-06	18-Dec-06	C	SL_MSE	\$\$		4,996		5,372	25%	1,343	
1	03	04	07	01		Rec: Ion Pump Cable	20-Oct-06	18-Dec-06	C	SL_MSE	\$\$		540		581	25%	145	
1	03	04	07	01		Rec: Gate Valve	20-Oct-06	18-Dec-06	C	SL_MSE	\$\$		8,380		9,011	25%	2,253	
1	03	04	07	01		Rec: Valve	20-Oct-06	18-Dec-06	C	SL_MSE	\$\$		2,100		2,258	25%	565	
1	03	04	07	01		Rec: Vacuum Gauge	20-Oct-06	18-Dec-06	C	SL_MSE	\$\$		3,455		3,715	25%	929	
1	03	04	07	01		Rec: RGA	20-Oct-06	18-Dec-06	C	SL_MSE	\$\$		17,000		18,279	25%	4,570	
1	03	04	07	01		Rec: Entrance Chamber Support	20-Oct-06	18-Dec-06	C	SL_MSE	\$\$		2,000		2,150	25%	538	
1	03	04	07	01		Rec: Chamber Mount	20-Oct-06	18-Dec-06	C	SL_MSE	\$\$		2,000		2,150	25%	538	
1	03	04	07	01		Rec: Ion Pump Support	20-Oct-06	18-Dec-06	C	SL_MSE	\$\$		600		645	25%	161	
1	03	04	07	01		Rec: Gate Valve Support	20-Oct-06	18-Dec-06	C	SL_MSE	\$\$		1,200		1,290	25%	323	
1	03	04	07	01		Rec: RGA Support	20-Oct-06	18-Dec-06	C	SL_MSE	\$\$		500		538	25%	134	
1	03	04	07	01		Rec: Turbo Pump	20-Oct-06	18-Dec-06	C	SL_MSE	\$\$		18,448		19,836	25%	4,959	

Detailed Cost Estimate
LINAC SYSTEM

WBS Level						LCLA DCE Aug-2006 Description	Early Start	Early Finish	Fund Type	Res Code	Units	Work Rem. Bud. Qty		Work Rem. Full Burd and Escltd Cost			Contngcy %	Contingency \$
1	2	3	4	5	6							Hours	\$	Labor	M&S	Total		
1	03	04	07	01		Rec: Roughing Pump	20-Oct-06	18-Dec-06	C	SL_MSE	\$\$		7,500		8,064	8,064	25%	2,016
1	03	04	07	01		Rec: Pneumatic Gate Valve	20-Oct-06	18-Dec-06	C	SL_MSE	\$\$		8,430		9,064	9,064	25%	2,266
1	03	04	07	01		QA of Entrance Section Components	19-Dec-06	5-Jan-07	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	01		QA of Entrance Section Components	19-Dec-06	5-Jan-07	C	SL_MFM	Hrs	24		2,647		2,647	25%	662
1	03	04	07	01		Clean Ent Sec	8-Jan-07	19-Jan-07	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	01		Clean Ent Sec	8-Jan-07	19-Jan-07	C	SL_MFA	Hrs	40		3,447		3,447	25%	862
1	03	04	07	01		Bake Ent Sec	22-Jan-07	2-Feb-07	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	01		Bake Ent Sec	22-Jan-07	2-Feb-07	C	SL_MFA	Hrs	40		3,447		3,447	25%	862
1	03	04	07	01		Assemble Entrance Section Components	5-Feb-07	2-Mar-07	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	01		Assemble Entrance Section Components	5-Feb-07	2-Mar-07	C	SL_MFA	Hrs	40		3,447		3,447	25%	862
1	03	04	07	01		Assembly Test Ent Sec	5-Mar-07	6-Mar-07	C	SL_PHS	Hrs	16		1,170		1,170	25%	293
1	03	04	07	01		Assembly Test Ent Sec	5-Mar-07	6-Mar-07	C	SL_MVE	Hrs	16		1,699		1,699	25%	425
1	03	04	07	01		Assembly Test Ent Sec	5-Mar-07	6-Mar-07	C	SL_MFA	Hrs	24		2,068		2,068	25%	517
1	03	04	07	01		Prepare Ent Sec Assembly & Support for Shipme	7-Mar-07	13-Mar-07	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	01		Prepare Ent Sec Assembly & Support for Shipme	7-Mar-07	13-Mar-07	C	SL_MFA	Hrs	16		1,379		1,379	25%	345
1	03	04	07	01		Pack Ent Sec Assembly & Support for Shipment	14-Mar-07	20-Mar-07	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	01		Pack Ent Sec Assembly & Support for Shipment	14-Mar-07	20-Mar-07	C	SL_MFA	Hrs	16		1,379		1,379	25%	345
1	03	04	07	01		Transmit Ent Sec Design a& Drawings to SLAC	21-Mar-07	27-Mar-07	C	SL_ME1	Hrs	8		799		799	25%	200
1	03	04	07	01		Transmit Ent Sec Design a& Drawings to SLAC	21-Mar-07	27-Mar-07	C	SL_MDD	Hrs	24		2,010		2,010	25%	502
1	03	04	07	01		Develop Installation Plan Ent Sec	28-Mar-07	4-Apr-07	C	SL_SEE	Hrs	32		3,398		3,398	25%	850
1	03	04	07	01		Develop Installation Plan Ent Sec	28-Mar-07	4-Apr-07	C	SL_PHS	Hrs	8		585		585	25%	146
1	03	04	07	01		Develop Installation Plan Ent Sec	28-Mar-07	4-Apr-07	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	01		Review installation Plan Ent Sec	5-Apr-07	11-Apr-07	C	SL_SEE	Hrs	16		1,699		1,699	25%	425
1	03	04	07	01		Review installation Plan Ent Sec	5-Apr-07	11-Apr-07	C	SL_PHS	Hrs	8		585		585	25%	146
1	03	04	07	01		Review installation Plan Ent Sec	5-Apr-07	11-Apr-07	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	02		Exit Section Assembly						852	109,519	80,847	117,760	198,607		49,652
1	03	04	07	02		Prelim Prototype Design Exit Sec	2-Aug-06	29-Aug-06	C	SL_PHS	Hrs	16		1,141		1,141	25%	285
1	03	04	07	02		Prelim Prototype Design Exit Sec	2-Aug-06	29-Aug-06	C	SL_MVE	Hrs	40		4,140		4,140	25%	1,035
1	03	04	07	02		Prelim Prototype Design Exit Sec	2-Aug-06	29-Aug-06	C	SL_MDD	Hrs	60		4,897		4,897	25%	1,224
1	03	04	07	02		Mechanical Analysis Exit Sec	30-Aug-06	13-Sep-06	C	SL_MVE	Hrs	8		828		828	25%	207
1	03	04	07	02		Mechanical Analysis Exit Sec	30-Aug-06	13-Sep-06	C	SL_ME1	Hrs	24		2,336		2,336	25%	584
1	03	04	07	02		Prelim Prototype Design Review Exit Sec	14-Sep-06	20-Sep-06	C	SL_PHS	Hrs	16		1,141		1,141	25%	285
1	03	04	07	02		Prelim Prototype Design Review Exit Sec	14-Sep-06	20-Sep-06	C	SL_MVE	Hrs	8		828		828	25%	207
1	03	04	07	02		Prelim Prototype Design Review Exit Sec	14-Sep-06	20-Sep-06	C	SL_MDD	Hrs	8		653		653	25%	163
1	03	04	07	02		Final Exit Sec Design	21-Sep-06	4-Oct-06	C	SL_MVE	Hrs	32		3,332		3,332	25%	833
1	03	04	07	02		Final Exit Sec Design	21-Sep-06	4-Oct-06	C	SL_MDD	Hrs	40		3,284		3,284	25%	821
1	03	04	07	02		Bid Process Exit Sec	5-Oct-06	8-Nov-06	C	SL_MVE	Hrs	24		2,549		2,549	25%	637
1	03	04	07	02		AWARD: Standard Exit Chamber Sppt	9-Nov-06	13-Nov-06	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	02		AWARD: Exit Bellows Sppt	9-Nov-06	13-Nov-06	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	02		AWARD: Exit Downstream Chamber Sppt	9-Nov-06	13-Nov-06	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	02		AWARD: Exit Pump Manifold Sppt	9-Nov-06	13-Nov-06	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	02		AWARD: Ion Pump Sppt	9-Nov-06	13-Nov-06	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	02		AWARD: Turbo Pump Sppt	9-Nov-06	13-Nov-06	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	02		AWARD: Pneumatic Gate Valve SPPT	9-Nov-06	13-Nov-06	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	02		AWARD: Roughing Pump Sppt	9-Nov-06	13-Nov-06	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	02		AWARD: Gate Valve Sppt	9-Nov-06	13-Nov-06	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	02		AWARD: Valves Sppt	9-Nov-06	13-Nov-06	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	02		AWARD: Vacuum Gauge Sppt	9-Nov-06	13-Nov-06	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	02		AWARD: RGA Sppt	9-Nov-06	13-Nov-06	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	02		AWARD: Standard Exit Chamber Support (2) Sppt	9-Nov-06	13-Nov-06	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	02		AWARD: Exit Downstream Chamber Support (2) Sppt	9-Nov-06	13-Nov-06	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	02		AWARD: Ion Pump Support (2) Sppt	9-Nov-06	13-Nov-06	C	SL_MVE	Hrs	8		850		850	25%	212

Detailed Cost Estimate
LINAC SYSTEM

WBS Level						LCLA DCE Aug-2006 Description	Early Start	Early Finish	Fund Type	Res Code	Units	Work Rem. Bud. Qty		Work Rem. Full Burd and Escltd Cost			Contngcy %	Contingency \$
1	2	3	4	5	6							Hours	\$	Labor	M&S	Total		
1	03	04	07	02		AWARD: Gate Valve Support (1) Sppt	9-Nov-06	13-Nov-06	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	02		AWARD: RGA Support (1) Sppt	9-Nov-06	13-Nov-06	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	02		Rec: Standard Exit Chamber	14-Nov-06	19-Jan-07	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	02		Rec: Standard Exit Chamber	14-Nov-06	19-Jan-07	C	SL_MSE	\$\$		1,520		1,634	1,634	25%	409
1	03	04	07	02		Rec: Standard Exit Chamber	14-Nov-06	19-Jan-07	C	SL_MFA	Hrs	8		689		689	25%	172
1	03	04	07	02		Rec: Exit Bellows	14-Nov-06	19-Jan-07	C	SL_MSE	\$\$		928		998	998	25%	249
1	03	04	07	02		Rec: Exit Downstream Chamber	14-Nov-06	19-Jan-07	C	SL_MSE	\$\$		542		583	583	25%	146
1	03	04	07	02		Rec: Exit Pump Manifold	14-Nov-06	19-Jan-07	C	SL_MSE	\$\$		1,300		1,398	1,398	25%	349
1	03	04	07	02		Rec: Ion Pump	14-Nov-06	19-Jan-07	C	SL_MSE	\$\$		27,816		29,909	29,909	25%	7,477
1	03	04	07	02		Rec: Turbo Pump	14-Nov-06	19-Jan-07	C	SL_MSE	\$\$		18,448		19,836	19,836	25%	4,959
1	03	04	07	02		Rec: Roughing Pump	14-Nov-06	19-Jan-07	C	SL_MSE	\$\$		7,500		8,064	8,064	25%	2,016
1	03	04	07	02		Rec: Pneumatic Gate Valve	14-Nov-06	19-Jan-07	C	SL_MSE	\$\$		8,430		9,064	9,064	25%	2,266
1	03	04	07	02		Rec: Gate Valve	14-Nov-06	19-Jan-07	C	SL_MSE	\$\$		8,380		9,011	9,011	25%	2,253
1	03	04	07	02		Rec: Valve	14-Nov-06	19-Jan-07	C	SL_MSE	\$\$		2,100		2,258	2,258	25%	565
1	03	04	07	02		Rec: Vacuum Gauge	14-Nov-06	19-Jan-07	C	SL_MSE	\$\$		3,455		3,715	3,715	25%	929
1	03	04	07	02		Rec: RGA	14-Nov-06	19-Jan-07	C	SL_MSE	\$\$		17,000		18,279	18,279	25%	4,570
1	03	04	07	02		Rec: Standard Exit Chamber Support	14-Nov-06	19-Jan-07	C	SL_MSE	\$\$		4,000		4,301	4,301	25%	1,075
1	03	04	07	02		Rec: Exit Downstream Chamber Support	14-Nov-06	19-Jan-07	C	SL_MSE	\$\$		4,000		4,301	4,301	25%	1,075
1	03	04	07	02		Rec: Ion Pump Support	14-Nov-06	19-Jan-07	C	SL_MSE	\$\$		2,400		2,581	2,581	25%	645
1	03	04	07	02		Rec: Gate Valve Support	14-Nov-06	19-Jan-07	C	SL_MSE	\$\$		1,200		1,290	1,290	25%	323
1	03	04	07	02		Rec: RGA Support	14-Nov-06	19-Jan-07	C	SL_MSE	\$\$		500		538	538	25%	134
1	03	04	07	02		QA of Exit Section Components	22-Jan-07	30-Jan-07	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	02		QA of Exit Section Components	22-Jan-07	30-Jan-07	C	SL_MFM	Hrs	24		2,647		2,647	25%	662
1	03	04	07	02		Approve Production Exit Sec	31-Jan-07	2-Feb-07	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	02		Clean Exit Sec	5-Feb-07	14-Feb-07	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	02		Clean Exit Sec	5-Feb-07	14-Feb-07	C	SL_MFA	Hrs	40		3,447		3,447	25%	862
1	03	04	07	02		Bake Exit Sec	15-Feb-07	28-Feb-07	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	02		Bake Exit Sec	15-Feb-07	28-Feb-07	C	SL_MFA	Hrs	32		2,758		2,758	25%	689
1	03	04	07	02		Assemble Exit Section Components	1-Mar-07	29-Mar-07	C	SL_MVE	Hrs	16		1,699		1,699	25%	425
1	03	04	07	02		Assemble Exit Section Components	1-Mar-07	29-Mar-07	C	SL_MFA	Hrs	56		4,826		4,826	25%	1,207
1	03	04	07	02		Assembly Test Exit Sec	30-Mar-07	18-Apr-07	C	SL_PHS	Hrs	8		585		585	25%	146
1	03	04	07	02		Assembly Test Exit Sec	30-Mar-07	18-Apr-07	C	SL_MVE	Hrs	16		1,699		1,699	25%	425
1	03	04	07	02		Assembly Test Exit Sec	30-Mar-07	18-Apr-07	C	SL_MFA	Hrs	32		2,758		2,758	25%	689
1	03	04	07	02		Prepare Exit Sec Assembly & Support for Ship	19-Apr-07	26-Apr-07	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	02		Prepare Exit Sec Assembly & Support for Ship	19-Apr-07	26-Apr-07	C	SL_MFA	Hrs	24		2,068		2,068	25%	517
1	03	04	07	02		Pack Exit Sec Assembly and Support for Shipmen	27-Apr-07	4-May-07	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	02		Pack Exit Sec Assembly and Support for Shipmen	27-Apr-07	4-May-07	C	SL_MFA	Hrs	16		1,379		1,379	25%	345
1	03	04	07	02		Transmit Exit Sec Design & Drawings to SLAC	7-May-07	14-May-07	C	SL_ME1	Hrs	8		799		799	25%	200
1	03	04	07	02		Transmit Exit Sec Design & Drawings to SLAC	7-May-07	14-May-07	C	SL_MDD	Hrs	24		2,010		2,010	25%	502
1	03	04	07	02		Develop Exit Sec Installation Plan	15-May-07	25-May-07	C	SL_SEE	Hrs	32		3,398		3,398	25%	850
1	03	04	07	02		Develop Exit Sec Installation Plan	15-May-07	25-May-07	C	SL_PHS	Hrs	8		585		585	25%	146
1	03	04	07	02		Develop Exit Sec Installation Plan	15-May-07	25-May-07	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	07	02		Review Exit Sec Installation Plan	29-May-07	5-Jun-07	C	SL_SEE	Hrs	16		1,699		1,699	25%	425
1	03	04	07	02		Review Exit Sec Installation Plan	29-May-07	5-Jun-07	C	SL_PHS	Hrs	8		585		585	25%	146
1	03	04	07	02		Review Exit Sec Installation Plan	29-May-07	5-Jun-07	C	SL_MVE	Hrs	8		850		850	25%	212
1	03	04	08			LTU/BSY& Cold Trap Vacuum System						520	85,000	49,420	91,396	140,816		28,163
1	03	04	08			Engineering Study Cold Trap Requirement	2-Oct-06	27-Dec-06	C	SL_ME1	Hrs	80		7,990		7,990	20%	1,598
1	03	04	08			Engineering Study Cold Trap Requirement	2-Oct-06	27-Dec-06	C	SL_MDD	Hrs	40		3,349		3,349	20%	670
1	03	04	08			Generate Cold Trap Specifications	28-Dec-06	26-Jan-07	C	SL_ME1	Hrs	40		3,995		3,995	20%	799
1	03	04	08			Purchase Cold Trap and Support	29-Jan-07	26-Mar-07	C	SL_ME1	Hrs	40		3,995		3,995	20%	799
1	03	04	08			RCV: Cold Trap from Vendor	19-Jul-07	19-Jul-07	C	SL_MSE	\$\$		80,000		86,020	86,020	20%	17,204
1	03	04	08			Misc Materials Cold Trap	20-Jul-07	16-Aug-07	C	SL_MSE	\$\$		5,000		5,376	5,376	20%	1,075

Detailed Cost Estimate
LINAC SYSTEM

WBS Level						LCLA DCE Aug-2006 Description	Early Start	Early Finish	Fund Type	Res Code	Units	Work Rem. Bud. Qty		Work Rem. Full Burd and Escltd Cost			Contngcy %	Contingency \$	
1	2	3	4	5	6							Hours	\$	Labor	M&S	Total			
1	03	04	08			Test & Process Cold Trap	20-Jul-07	14-Sep-07	C	SL_MFA	Hrs	80		6,895		6,895	20%	1,379	
1	03	04	08			Test & Process Cold Trap	20-Jul-07	14-Sep-07	C	SL_ME1	Hrs	80		7,990		7,990	20%	1,598	
1	03	04	08			Field Qualify Cold Trap (thru LTU Install)	17-Sep-07	11-Dec-07	C	SL_MFA	Hrs	80		7,044		7,044	20%	1,409	
1	03	04	08			Field Qualify Cold Trap (thru LTU Install)	17-Sep-07	11-Dec-07	C	SL_ME1	Hrs	80		8,163		8,163	20%	1,633	
1	03	05				Linac Electron Diagnostics Summary						9,200	631,779	848,558	679,275	1,527,833		343,957	
1	03	05	01			Wire Scanners (11) Summary						260	45,149	24,392	48,546	72,939		10,941	
1	03	05	01			Post Process & Test	1-Aug-06	31-Aug-06	C	SL_MFA	Hrs	41		3,444		3,444	15%	517	
1	03	05	01			Prep Bid Pack - Wire Scanner	1-Nov-06	7-Nov-06	C	SL_ME1	Hrs	9		899		899	15%	135	
1	03	05	01			Evaluate Vendor Proposals	12-Dec-06	2-Jan-07	C	SL_ME1	Hrs	9		899		899	15%	135	
1	03	05	01			RCV: Wire Scanner Components from Vendor	30-Apr-07	30-Apr-07	C	SA_MSE	\$\$		27,300		29,354		29,354	15%	4,403
1	03	05	01			Procure Misc Materials - Wire Scanners	8-Nov-06	20-Feb-07	C	SL_MSE	\$\$		9,841		10,582		10,582	15%	1,587
1	03	05	01			Component Fab & Assembly - Wire Scanners	1-May-07	1-May-07	C	SL_MFP	Hrs	22		3,810		3,810	15%	571	
1	03	05	01			Component Fab & Assembly - Wire Scanners	1-May-07	1-May-07	C	SL_MFM	Hrs	15		1,655		1,655	15%	248	
1	03	05	01			Component Fab & Assembly - Wire Scanners	1-May-07	1-May-07	C	SL_MFA	Hrs	87		7,498		7,498	15%	1,125	
1	03	05	01			Vendor Fab Supports	13-Dec-06	20-Apr-07	C	SL_MSE	\$\$		5,824		6,262		6,262	15%	939
1	03	05	01			Pocure Misc. Materials - Wire Scanner Support	13-Dec-06	23-Mar-07	C	SL_MSE	\$\$		2,184		2,348		2,348	15%	352
1	03	05	01			Perform Functional Testing - Wire Scanners	2-May-07	15-May-07	C	SL_CCA	Hrs	22		1,448		1,448	15%	217	
1	03	05	01			Post Process & Test	16-May-07	30-May-07	C	SL_MFA	Hrs	55		4,740		4,740	15%	711	
1	03	05	02			Beam Position Monitors						748	10,000	73,703	10,752	84,455		17,450	
1	03	05	02	01		BPM - Standard Linac (4) Summary						-	-	-	-	-		-	
1	03	05	02	01		Post Process & Test	5-Jul-06	31-Jul-06	C	SL_MFA	Hrs	-		-		-	10%	-	
1	03	05	02	02		BPM - RF (10) Summary													
1	03	05	02	03		BPM - FFTB (12) Summary						675	10,000	68,113	10,752	78,865		15,773	
1	03	05	02	03		Receive BPM Requirements	3-Oct-06	3-Oct-06	C	SL_ME1	Hrs	8		799		799	20%	160	
1	03	05	02	03		Write ICD - Beam Path Monitor	4-Oct-06	9-Oct-06	C	SL_ME1	Hrs	15		1,498		1,498	20%	300	
1	03	05	02	03		Collect Area Specific Requirements	10-Oct-06	16-Oct-06	C	SL_ME1	Hrs	15		1,498		1,498	20%	300	
1	03	05	02	03		Produce Common Layout	17-Oct-06	13-Nov-06	C	SL_MDD	Hrs	25		2,093		2,093	20%	419	
1	03	05	02	03		Develop General Specifications / Analysis	14-Nov-06	20-Nov-06	C	SL_ME1	Hrs	33		3,296		3,296	20%	659	
1	03	05	02	03		Create / Remodel / Revise Dsn Documentation	21-Nov-06	19-Jan-07	C	SL_MDD	Hrs	80		6,699		6,699	20%	1,340	
1	03	05	02	03		Design Check	22-Jan-07	19-Mar-07	C	SL_MDD	Hrs	15		1,256		1,256	20%	251	
1	03	05	02	03		Write Component Traveler	20-Mar-07	2-Apr-07	C	SL_ME1	Hrs	25		2,497		2,497	20%	499	
1	03	05	02	03		Conduct Prelim Design Review (PDR) - FFTB BPMs	3-Apr-07	3-Apr-07	C	SL_ME1	Hrs	3		300		300	20%	60	
1	03	05	02	03		Generate Detailed Procurement Plan	4-Apr-07	17-Apr-07	C	SL_ME1	Hrs	5		499		499	20%	100	
1	03	05	02	03		Conduct Final Design Review (FDR) - FFTB BPMs	18-Apr-07	18-Apr-07	C	SL_ME1	Hrs	3		300		300	20%	60	
1	03	05	02	03		Procure Component Material - BPMs	20-Apr-07	16-Jul-07	C	SL_MSE	\$\$		10,000		10,752		10,752	20%	2,150
1	03	05	02	03		Component Fab & Assembly - BPMs	17-Jul-07	11-Sep-07	C	SL_MFP	Hrs	40		6,927		6,927	20%	1,385	
1	03	05	02	03		Component Fab & Assembly - BPMs	17-Jul-07	11-Sep-07	C	SL_MFM	Hrs	240		26,473		26,473	20%	5,295	
1	03	05	02	03		Component Fab & Assembly - BPMs	17-Jul-07	11-Sep-07	C	SL_MFA	Hrs	80		6,895		6,895	20%	1,379	
1	03	05	02	03		Perform QC / Metrology	12-Sep-07	18-Sep-07	C	SL_MES	Hrs	33		2,650		2,650	20%	530	
1	03	05	02	03		Perform Functional Testing - BPMs	19-Sep-07	20-Sep-07	C	SL_CCA	Hrs	15		987		987	20%	197	
1	03	05	02	03		Post Process & Test	21-Sep-07	27-Sep-07	C	SL_MFA	Hrs	40		3,447		3,447	20%	689	
1	03	05	02	04		BPM - Large Aperture (2) Summary						73	-	5,590	-	5,590		1,677	
1	03	05	02	04		Perform Functional Testing - BPMs	1-Sep-06	15-Sep-06	C	SL_CCA	Hrs	25		1,604		1,604	30%	481	
1	03	05	02	04		Post Process & Test	18-Sep-06	29-Sep-06	C	SL_MFA	Hrs	40		3,360		3,360	30%	1,008	
1	03	05	02	04		Procure Component Material - BPMs	5-Jul-06	31-Jul-06	C	SL_MSE	\$\$		-		-		-	30%	-
1	03	05	02	04		Perform QC / Metrology	1-Aug-06	31-Aug-06	C	SL_MES	Hrs	8		626		626	30%	188	
1	03	05	03			Toroid Beam Current Monitor (10) Summary						232	116,000	20,132	124,729	144,861		43,458	
1	03	05	03			Coat Toroid Ceramic	1-Sep-06	8-Sep-06	C	SL_MFA	Hrs	40		3,360		3,360	30%	1,008	
1	03	05	03			Receive Toroids	3-Oct-06	3-Oct-06	C	SL_MSE	\$\$		76,000		81,719		81,719	30%	24,516
1	03	05	03			Perform Functional Testing - Toroids	4-Oct-06	10-Oct-06	C	SL_CCA	Hrs	16		1,053		1,053	30%	316	
1	03	05	03			Post Process & Test	11-Oct-06	17-Oct-06	C	SL_MFA	Hrs	32		2,758		2,758	30%	827	
1	03	05	03			Generate Dump Toroid Specification	1-Nov-06	30-Nov-06	C	SL_ME1	Hrs	40		3,995		3,995	30%	1,198	

Detailed Cost Estimate
LINAC SYSTEM

WBS Level						LCLA DCE Aug-2006 Description	Early Start	Early Finish	Fund Type	Res Code	Units	Work Rem. Bud. Qty		Work Rem. Full Burd and Escltd Cost			Contngcy %	Contingency \$
1	2	3	4	5	6							Hours	\$	Labor	M&S	Total		
1	03	05	03			Purchase Dump Toroid	1-Dec-06	30-Jan-07	C	SL_ME1	Hrs	24		2,397		2,397	30%	719
1	03	05	03			Coat Dump Toroid Ceramic	31-Jan-07	25-Apr-07	C	SL_MFA	Hrs	32		2,758		2,758	30%	827
1	03	05	03			Receive Dump Toroid	23-Jul-07	23-Jul-07	C	SL_MSE	\$\$		40,000		43,010	43,010	30%	12,903
1	03	05	03			Perform Functional Testing Dump Toroid	24-Jul-07	6-Aug-07	C	SL_CCA	Hrs	16		1,053		1,053	30%	316
1	03	05	03			Post Process & Test Dump Toroid	7-Aug-07	22-Aug-07	C	SL_MFA	Hrs	32		2,758		2,758	30%	827
1	03	05	04			Beam Stoppers (4) Summary						539	12,000	51,821	12,903	64,724		12,945
1	03	05	04			Produce Common Layout	1-Nov-06	21-Nov-06	C	SL_MDD	Hrs	80		6,699		6,699	20%	1,340
1	03	05	04			Develop General Specifications / Analysis	1-Nov-06	14-Nov-06	C	SL_ME1	Hrs	43		4,294		4,294	20%	859
1	03	05	04			Create / Remodel / Revise Dsn Documentation	1-Nov-06	12-Jan-07	C	SL_MDD	Hrs	133		11,137		11,137	20%	2,227
1	03	05	04			Design Check	1-Nov-06	30-Nov-06	C	SL_MDD	Hrs	27		2,261		2,261	20%	452
1	03	05	04			Write Component Traveler	1-Dec-06	12-Jan-07	C	SL_ME1	Hrs	10		999		999	20%	200
1	03	05	04			Generate Detailed Procurement Plan	16-Jan-07	12-Feb-07	C	SL_ME1	Hrs	17		1,698		1,698	20%	340
1	03	05	04			Conduct Stoppers FDR	13-Feb-07	20-Feb-07	C	SL_ME1	Hrs	5		499		499	20%	100
1	03	05	04			Procure Component Material - Stoppers	21-Feb-07	17-Apr-07	C	SL_MSE	\$\$		8,000		8,602	8,602	20%	1,720
1	03	05	04			Component Fab & Assembly - Stoppers	18-Apr-07	12-Jul-07	C	SL_MFP	Hrs	27		4,676		4,676	20%	935
1	03	05	04			Component Fab & Assembly - Stoppers	18-Apr-07	12-Jul-07	C	SL_MFM	Hrs	107		11,802		11,802	20%	2,360
1	03	05	04			Component Fab & Assembly - Stoppers	18-Apr-07	12-Jul-07	C	SL_MFA	Hrs	53		4,568		4,568	20%	914
1	03	05	04			Perform Functional Testing - Stoppers	13-Jul-07	26-Jul-07	C	SL_MFA	Hrs	10		862		862	20%	172
1	03	05	04			Post Process & Test	27-Jul-07	9-Aug-07	C	SL_MFA	Hrs	27		2,327		2,327	20%	465
1	03	05	04			Vendor Fab 1st Lot - Supports	8-Mar-07	2-May-07	C	SL_MSE	\$\$		3,333		3,584	3,584	20%	717
1	03	05	04			Procure Misc Materials - Diagnostics Supports	21-Feb-07	20-Mar-07	C	SL_MSE	\$\$		667		717	717	20%	143
1	03	05	05			Profile Monitors (7 OTR-3 PHOSPHOR SCREEN-1 YAG)						1,016	144,000	89,106	154,836	243,942		48,788
1	03	05	05			Component Fab & Assembly - Profile Monitors	5-Jul-06	31-Jul-06	C	SL_MFP	Hrs	-		-		-	20%	-
1	03	05	05			Component Fab & Assembly - Profile Monitors	5-Jul-06	31-Jul-06	C	SL_MFM	Hrs	-		-		-	20%	-
1	03	05	05			Component Fab & Assembly - Profile Monitors	5-Jul-06	31-Jul-06	C	SL_MFA	Hrs	-		-		-	20%	-
1	03	05	05			Perform QC / Metrology	5-Jul-06	31-Jul-06	C	SL_MES	Hrs	-		-		-	20%	-
1	03	05	05			Assemble Supports	6-Jul-06	31-Jul-06	C	SL_MFA	Hrs	-		-		-	20%	-
1	03	05	05			Develop General Specifications / Analysis	2-Oct-06	13-Oct-06	C	SL_ME1	Hrs	6		599		599	20%	120
1	03	05	05			Create / Remodel / Revise Dsn Documentation	2-Oct-06	13-Oct-06	C	SL_MDD	Hrs	48		4,019		4,019	20%	804
1	03	05	05			Design YAG Screen Option	16-Oct-06	12-Dec-06	C	SL_ME1	Hrs	10		999		999	20%	200
1	03	05	05			Design YAG Screen Option	16-Oct-06	12-Dec-06	C	SL_MDD	Hrs	96		8,038		8,038	20%	1,608
1	03	05	05			Design Phosphor Screen Option	16-Oct-06	12-Dec-06	C	SL_ME1	Hrs	10		999		999	20%	200
1	03	05	05			Design Phosphor Screen Option	16-Oct-06	12-Dec-06	C	SL_MDD	Hrs	96		8,038		8,038	20%	1,608
1	03	05	05			Design OTR Screen Options	16-Oct-06	12-Dec-06	C	SL_ME1	Hrs	14		1,398		1,398	20%	280
1	03	05	05			Design OTR Screen Options	16-Oct-06	12-Dec-06	C	SL_MDD	Hrs	144		12,058		12,058	20%	2,412
1	03	05	05			Design Check	13-Dec-06	23-Feb-07	C	SL_MDD	Hrs	96		8,038		8,038	20%	1,608
1	03	05	05			Write Component Traveler	13-Dec-06	13-Dec-06	C	SL_ME1	Hrs	6		599		599	20%	120
1	03	05	05			Conduct Profile Monitors PDR	26-Feb-07	2-Mar-07	C	SL_ME1	Hrs	6		599		599	20%	120
1	03	05	05			Generate Detailed Procurement Plan	5-Mar-07	5-Mar-07	C	SL_ME1	Hrs	4		399		399	20%	80
1	03	05	05			Conduct Profile Monitors FDR	5-Mar-07	9-Mar-07	C	SL_ME1	Hrs	6		599		599	20%	120
1	03	05	05			Prep Bid Pak - Profile Monitors	6-Mar-07	12-Mar-07	C	SL_ME1	Hrs	6		599		599	20%	120
1	03	05	05			RCV: Profile Monitors 1st Lot	9-May-07	9-May-07	C	SA_MSE	\$\$		40,000		43,010	43,010	20%	8,602
1	03	05	05			RCV: Profile Monitors Final Lot	9-May-07	9-May-07	C	SA_MSE	\$\$		40,000		43,010	43,010	20%	8,602
1	03	05	05			Procure Profile Monitor Components	12-Mar-07	6-Apr-07	C	SL_MSE	\$\$		40,000		43,010	43,010	20%	8,602
1	03	05	05			Procure Component Material - Profile Monitors	12-Mar-07	6-Apr-07	C	SL_MSE	\$\$		6,400		6,882	6,882	20%	1,376
1	03	05	05			Component Fab & Assembly - Profile Monitors	10-May-07	6-Jul-07	C	SL_MFP	Hrs	20		3,463		3,463	20%	693
1	03	05	05			Component Fab & Assembly - Profile Monitors	10-May-07	6-Jul-07	C	SL_MFM	Hrs	32		3,530		3,530	20%	706
1	03	05	05			Component Fab & Assembly - Profile Monitors	10-May-07	6-Jul-07	C	SL_MFA	Hrs	192		16,547		16,547	20%	3,309
1	03	05	05			Perform QC / Metrology	9-Jul-07	13-Jul-07	C	SL_MES	Hrs	26		2,088		2,088	20%	418
1	03	05	05			Perform Functional Testing - Profile Monitors	16-Jul-07	20-Jul-07	C	SL_CCA	Hrs	32		2,106		2,106	20%	421
1	03	05	05			Post Process & Test	23-Jul-07	27-Jul-07	C	SL_MFA	Hrs	32		2,758		2,758	20%	552
1	03	05	05			Procure Misc Materials - Diagnostics Supports	12-Mar-07	6-Apr-07	C	SL_MSE	\$\$		2,400		2,581	2,581	20%	516

Detailed Cost Estimate
LINAC SYSTEM

WBS Level						LCLA DCE Aug-2006 Description	Early Start	Early Finish	Fund Type	Res Code	Units	Work Rem. Bud. Qty		Work Rem. Full Burd and Escltd Cost			Contngcy %	Contingency \$
1	2	3	4	5	6							Hours	\$	Labor	M&S	Total		
1	03	05	05			Prep Bid Bak - Supports	12-Mar-07	16-Mar-07	C	SL_ME1	Hrs	6		599		599	20%	120
1	03	05	05			RCV: Supports from Vendor	15-May-07	15-May-07	C	SA_MSE	\$\$		15,200		16,344	16,344	20%	3,269
1	03	05	05			Assemble Supports	16-May-07	13-Jun-07	C	SL_MFA	Hrs	128		11,032		11,032	20%	2,206
1	03	05	06			E/O Bunch Length Monitors (1) Summary												
1	03	05	07			CSR/OTR/CTR Bunch Length Monitors (5) Summary						1,575	51,620	149,460	55,460	204,920		71,722
1	03	05	07			Perform QC / Metrology	1-Aug-06	2-Oct-06	C	SL_MES	Hrs	11		861		861	35%	301
1	03	05	07			Perform Functional Testing - Bunch Length Mon	3-Oct-06	9-Oct-06	C	SL_CE1	Hrs	15		1,695		1,695	35%	593
1	03	05	07			Collect Component Performance Data	3-Oct-06	9-Oct-06	C	SL_ME1	Hrs	8		799		799	35%	280
1	03	05	07			Post Process & Test	10-Oct-06	31-Oct-06	C	SL_MFA	Hrs	40		3,447		3,447	35%	1,207
1	03	05	07			Vendor Fab 1st Lot - Supports	1-Aug-06	12-Sep-06	C	SL_MSE	\$\$		1,440		1,509	1,509	35%	528
1	03	05	07			Procure Misc Materials - Diagnostics Supports	1-Aug-06	30-Aug-06	C	SL_MSE	\$\$		180		189	189	35%	66
1	03	05	07			Assemble Supports	13-Sep-06	19-Sep-06	C	SL_MFA	Hrs	35		2,940		2,940	35%	1,029
1	03	05	07			BL21 Develop Specifications/Analysis	1-Nov-06	29-Dec-06	C	SL_PHS	Hrs	160		14,894		14,894	35%	5,213
1	03	05	07			BL21 Develop Specifications/Analysis	1-Nov-06	29-Dec-06	C	SL_ME1	Hrs	80		7,990		7,990	35%	2,796
1	03	05	07			BL21 Develop Specifications/Analysis	1-Nov-06	29-Dec-06	C	SL_MDD	Hrs	40		3,349		3,349	35%	1,172
1	03	05	07			BL21 Engineering & Design	2-Jan-07	28-Mar-07	C	SL_PHS	Hrs	80		7,447		7,447	35%	2,606
1	03	05	07			BL21 Engineering & Design	2-Jan-07	28-Mar-07	C	SL_ME1	Hrs	160		15,979		15,979	35%	5,593
1	03	05	07			BL21 Engineering & Design	2-Jan-07	28-Mar-07	C	SL_MDD	Hrs	200		16,747		16,747	35%	5,861
1	03	05	07			BL21 Materials & Hardware	29-Mar-07	23-May-07	C	SL_MSE	\$\$		50,000		53,762	53,762	35%	18,817
1	03	05	07			BL21 Fabrication Vacuum Assembly	29-Mar-07	21-Jun-07	C	SL_PHS	Hrs	16		1,489		1,489	35%	521
1	03	05	07			BL21 Fabrication Vacuum Assembly	29-Mar-07	21-Jun-07	C	SL_MFP	Hrs	8		1,385		1,385	35%	485
1	03	05	07			BL21 Fabrication Vacuum Assembly	29-Mar-07	21-Jun-07	C	SL_MFM	Hrs	80		8,824		8,824	35%	3,088
1	03	05	07			BL21 Fabrication Vacuum Assembly	29-Mar-07	21-Jun-07	C	SL_MFA	Hrs	80		6,895		6,895	35%	2,413
1	03	05	07			BL21 Fabrication Vacuum Assembly	29-Mar-07	21-Jun-07	C	SL_MES	Hrs	20		1,606		1,606	35%	562
1	03	05	07			BL21 Fabrication Vacuum Assembly	29-Mar-07	21-Jun-07	C	SL_ME1	Hrs	16		1,598		1,598	35%	559
1	03	05	07			BL21 Fabrcaion Optics Assembly	29-Mar-07	21-Jun-07	C	SL_PHS	Hrs	16		1,489		1,489	35%	521
1	03	05	07			BL21 Fabrcaion Optics Assembly	29-Mar-07	21-Jun-07	C	SL_MFP	Hrs	24		4,156		4,156	35%	1,455
1	03	05	07			BL21 Fabrcaion Optics Assembly	29-Mar-07	21-Jun-07	C	SL_MFM	Hrs	80		8,824		8,824	35%	3,088
1	03	05	07			BL21 Fabrcaion Optics Assembly	29-Mar-07	21-Jun-07	C	SL_MFA	Hrs	80		6,895		6,895	35%	2,413
1	03	05	07			BL21 Fabrcaion Optics Assembly	29-Mar-07	21-Jun-07	C	SL_MES	Hrs	40		3,212		3,212	35%	1,124
1	03	05	07			BL21 Fabrcaion Optics Assembly	29-Mar-07	21-Jun-07	C	SL_ME1	Hrs	16		1,598		1,598	35%	559
1	03	05	07			BL21 Fabricate Supports	29-Mar-07	23-May-07	C	SL_MFM	Hrs	40		4,412		4,412	35%	1,544
1	03	05	07			BL21 Fabricate Supports	29-Mar-07	23-May-07	C	SL_MFA	Hrs	40		3,447		3,447	35%	1,207
1	03	05	07			BL21 QC/Fiducialization	22-Jun-07	6-Jul-07	C	SL_PHS	Hrs	8		745		745	35%	261
1	03	05	07			BL21 QC/Fiducialization	22-Jun-07	6-Jul-07	C	SL_MES	Hrs	40		3,212		3,212	35%	1,124
1	03	05	07			BL21 Vacuum Prep	9-Jul-07	20-Jul-07	C	SL_MFA	Hrs	40		3,447		3,447	35%	1,207
1	03	05	07			BL21 Vacuum Prep	9-Jul-07	20-Jul-07	C	SL_ME1	Hrs	8		799		799	35%	280
1	03	05	07			BL21 Testing	23-Jul-07	17-Aug-07	C	SL_PHS	Hrs	40		3,723		3,723	35%	1,303
1	03	05	07			BL21 Testing	23-Jul-07	17-Aug-07	C	SL_ME1	Hrs	40		3,995		3,995	35%	1,398
1	03	05	07			Procure Component Material - Bunch Length Mon	6-Jul-06	31-Jul-06	C	SL_MSE	\$\$		-		-	-	35%	-
1	03	05	07			Component Fab & Assembly - Bunch Length Monit	7-Jul-06	3-Aug-06	C	SL_MFP	Hrs	5		844		844	35%	295
1	03	05	07			Component Fab & Assembly - Bunch Length Monit	7-Jul-06	3-Aug-06	C	SL_MFM	Hrs	1		86		86	35%	30
1	03	05	07			Component Fab & Assembly - Bunch Length Monit	7-Jul-06	3-Aug-06	C	SL_MFA	Hrs	8		630		630	35%	221
1	03	05	08			Beam Loss Monitors						591	43,100	55,555	46,343	101,899		15,285
1	03	05	08	01		PIC Beam Loss Monitors (10) Summary						262	24,050	24,102	25,860	49,962		7,494
1	03	05	08	01		Write ICD - Beam Loss Monitor	2-Jan-07	8-Jan-07	C	SL_ME1	Hrs	25		2,497		2,497	15%	375
1	03	05	08	01		Produce Common Layout	9-Jan-07	6-Feb-07	C	SL_MDD	Hrs	25		2,093		2,093	15%	314
1	03	05	08	01		Develop General Specifications / Analysis	7-Feb-07	21-Feb-07	C	SL_ME1	Hrs	15		1,498		1,498	15%	225
1	03	05	08	01		Revise Design Documentation	22-Feb-07	7-Mar-07	C	SL_MDD	Hrs	25		2,093		2,093	15%	314
1	03	05	08	01		Write Component Traveler	8-Mar-07	14-Mar-07	C	SL_ME1	Hrs	8		799		799	15%	120
1	03	05	08	01		Generate Detailed Procurement Plan	15-Mar-07	21-Mar-07	C	SL_ME1	Hrs	5		499		499	15%	75
1	03	05	08	01		Conduct Beam Loss Monitors FDR	22-Mar-07	28-Mar-07	C	SL_ME1	Hrs	8		799		799	15%	120

Detailed Cost Estimate
LINAC SYSTEM

WBS Level						LCLA DCE Aug-2006 Description	Early Start	Early Finish	Fund Type	Res Code	Units	Work Rem. Bud. Qty		Work Rem. Full Burd and Escltd Cost			Contngcy %	Contingency \$
1	2	3	4	5	6							Hours	\$	Labor	M&S	Total		
1	03	05	08	01		Procure Component Material - Beam Loss Monitors	29-Mar-07	21-Jun-07	C	SL_MSE	\$\$		20,000		21,505	21,505	15%	3,226
1	03	05	08	01		Component Fab & Assembly - Beam Loss Monitors	22-Jun-07	20-Jul-07	C	SL_MFM	Hrs	40		4,412		4,412	15%	662
1	03	05	08	01		Component Fab & Assembly - Beam Loss Monitors	22-Jun-07	20-Jul-07	C	SL_MFA	Hrs	40		3,447		3,447	15%	517
1	03	05	08	01		Perform Functional Testing - Beam Loss Monito	23-Jul-07	3-Aug-07	C	SL_CCA	Hrs	13		856		856	15%	128
1	03	05	08	01		Post Process & Test	6-Aug-07	17-Aug-07	C	SL_MFA	Hrs	10		862		862	15%	129
1	03	05	08	01		Prep Bid Pak - Diagnostics Supports	29-Mar-07	29-Mar-07	C	SL_ME1	Hrs	8		799		799	15%	120
1	03	05	08	01		Vendor Fab Supports	2-Apr-07	27-Apr-07	C	SL_MSE	\$\$		3,600		3,871	3,871	15%	581
1	03	05	08	01		Procure Misc Materials - Diagnostics Supports	30-Apr-07	25-May-07	C	SL_MSE	\$\$		450		484	484	15%	73
1	03	05	08	01		Assemble Supports	29-May-07	25-Jun-07	C	SL_MFA	Hrs	40		3,447		3,447	15%	517
1	03	05	08	02		PLIC Beam Loss Monitors (2) Summary						329	19,050	31,453	20,483	51,937		7,791
1	03	05	08	02		Write ICD - Beam Loss Monitor	1-Feb-07	7-Feb-07	C	SL_ME1	Hrs	8		799		799	15%	120
1	03	05	08	02		Produce Common Layout	8-Feb-07	8-Mar-07	C	SL_MDD	Hrs	40		3,349		3,349	15%	502
1	03	05	08	02		Develop General Specifications / Analysis	9-Mar-07	15-Mar-07	C	SL_ME1	Hrs	8		799		799	15%	120
1	03	05	08	02		Revise Design Documentation	16-Mar-07	22-Mar-07	C	SL_MDD	Hrs	40		3,349		3,349	15%	502
1	03	05	08	02		Write Component Traveler	23-Mar-07	29-Mar-07	C	SL_ME1	Hrs	8		799		799	15%	120
1	03	05	08	02		Conduct Beam Loss Monitors PDR	30-Mar-07	5-Apr-07	C	SL_ME1	Hrs	8		799		799	15%	120
1	03	05	08	02		Generate Detailed Procurement Plan	6-Apr-07	6-Apr-07	C	SL_ME1	Hrs	5		499		499	15%	75
1	03	05	08	02		Conduct Beam Loss Monitors FDR	9-Apr-07	13-Apr-07	C	SL_ME1	Hrs	3		300		300	15%	45
1	03	05	08	02		Procure Component Material - Beam Loss Monitors	16-Apr-07	11-May-07	C	SL_MSE	\$\$		15,000		16,129	16,129	15%	2,419
1	03	05	08	02		Component Fab & Assembly - Beam Loss Monitors	14-May-07	7-Aug-07	C	SL_MFP	Hrs	10		1,732		1,732	15%	260
1	03	05	08	02		Component Fab & Assembly - Beam Loss Monitors	14-May-07	7-Aug-07	C	SL_MFM	Hrs	80		8,824		8,824	15%	1,324
1	03	05	08	02		Component Fab & Assembly - Beam Loss Monitors	14-May-07	7-Aug-07	C	SL_MFA	Hrs	80		6,895		6,895	15%	1,034
1	03	05	08	02		Perform Functional Testing - Beam Loss Monito	8-Aug-07	5-Sep-07	C	SL_CCA	Hrs	8		527		527	15%	79
1	03	05	08	02		Post Process & Test	6-Sep-07	3-Oct-07	C	SL_MFA	Hrs	8		691		691	15%	104
1	03	05	08	02		Prep Bid Pak - Diagnostics Supports	16-Apr-07	16-Apr-07	C	SL_ME1	Hrs	8		799		799	15%	120
1	03	05	08	02		Vendor Fab Supports	18-Apr-07	13-Jun-07	C	SL_MSE	\$\$		3,600		3,871	3,871	15%	581
1	03	05	08	02		Procure Misc Materials - Diagnostics Supports	14-Jun-07	12-Jul-07	C	SL_MSE	\$\$		450		484	484	15%	73
1	03	05	08	02		Assemble Supports	13-Jul-07	26-Jul-07	C	SL_MFA	Hrs	15		1,293		1,293	15%	194
1	03	05	09			Single Beam Dump (1) Summary						551	8,950	49,664	9,623	59,287		20,751
1	03	05	09			Write ICD - Single Beam Dump	3-Oct-06	4-Oct-06	C	SL_ME1	Hrs	8		799		799	35%	280
1	03	05	09			Produce Common Layout	5-Oct-06	1-Nov-06	C	SL_MDD	Hrs	120		10,048		10,048	35%	3,517
1	03	05	09			Develop General Specifications / Analysis	2-Nov-06	15-Nov-06	C	SL_ME1	Hrs	60		5,992		5,992	35%	2,097
1	03	05	09			Create / Remodel / Revise Dsn Documentation	16-Nov-06	15-Dec-06	C	SL_MDD	Hrs	160		13,397		13,397	35%	4,689
1	03	05	09			Design Check	2-Jan-07	28-Mar-07	C	SL_MDD	Hrs	40		3,349		3,349	35%	1,172
1	03	05	09			Write Component Traveler	2-Jan-07	8-Jan-07	C	SL_ME1	Hrs	25		2,497		2,497	35%	874
1	03	05	09			Generate Detailed Procurement Plan	9-Jan-07	9-Jan-07	C	SL_ME1	Hrs	5		499		499	35%	175
1	03	05	09			Procure Component Material - Single Beam Dump	29-Mar-07	25-Apr-07	C	SL_MSE	\$\$		6,000		6,451	6,451	35%	2,258
1	03	05	09			Component Fab & Assembly - Single Beam Dump	26-Apr-07	23-May-07	C	SL_MFP	Hrs	15		2,598		2,598	35%	909
1	03	05	09			Component Fab & Assembly - Single Beam Dump	26-Apr-07	23-May-07	C	SL_MFM	Hrs	15		1,655		1,655	35%	579
1	03	05	09			Post Process & Test	24-May-07	7-Jun-07	C	SL_MFA	Hrs	60		5,171		5,171	35%	1,810
1	03	05	09			Vendor Fab Supports	12-Jan-07	9-Apr-07	C	SL_MSE	\$\$		2,500		2,688	2,688	35%	941
1	03	05	09			Procure Misc Materials - Diagnostics Supports	10-Apr-07	5-Jun-07	C	SL_MSE	\$\$		450		484	484	35%	169
1	03	05	09			Perform QC & Inspection - Diagnostic Supports	6-Jun-07	12-Jun-07	C	SL_MES	Hrs	8		642		642	35%	225
1	03	05	09			Assemble Supports	13-Jun-07	26-Jun-07	C	SL_MFA	Hrs	35		3,016		3,016	35%	1,056
1	03	05	10			Electron Beam Dump (1) Summary						763	12,950	69,464	13,924	83,388		16,678
1	03	05	10			Receive Electron Beam Dump Requirements	3-Oct-06	3-Oct-06	C	SL_ME1	Hrs	5		499		499	20%	100
1	03	05	10			Write ICD - Electron Beam Dump	4-Oct-06	4-Oct-06	C	SL_ME1	Hrs	8		799		799	20%	160
1	03	05	10			Collect Area Specific Requirements	5-Oct-06	11-Oct-06	C	SL_ME1	Hrs	8		799		799	20%	160
1	03	05	10			Engineering Analysis	12-Oct-06	18-Oct-06	C	SL_ME1	Hrs	60		5,992		5,992	20%	1,198
1	03	05	10			Produce Common Layout	19-Oct-06	25-Oct-06	C	SL_MDD	Hrs	120		10,048		10,048	20%	2,010
1	03	05	10			Develop General Specifications / Analysis	26-Oct-06	1-Nov-06	C	SL_ME1	Hrs	15		1,498		1,498	20%	300
1	03	05	10			Create / Remodel / Revise Dsn Documentation	2-Nov-06	1-Dec-06	C	SL_MDD	Hrs	200		16,747		16,747	20%	3,349

Detailed Cost Estimate
LINAC SYSTEM

WBS Level						LCLA DCE Aug-2006 Description	Early Start	Early Finish	Fund Type	Res Code	Units	Work Rem. Bud. Qty		Work Rem. Full Burd and Escltd Cost			Contngcy %	Contingency \$
1	2	3	4	5	6							Hours	\$	Labor	M&S	Total		
1	03	05	10			Write Component Traveler	4-Dec-06	4-Dec-06	C	SL_ME1	Hrs	8		799		799	20%	160
1	03	05	10			Conduct Electron Beam Dump PDR	5-Dec-06	5-Dec-06	C	SL_ME1	Hrs	5		499		499	20%	100
1	03	05	10			Generate Detailed Procurement Plan	6-Dec-06	6-Dec-06	C	SL_ME1	Hrs	8		799		799	20%	160
1	03	05	10			Conduct Electron Beam Dump FDR	7-Dec-06	7-Dec-06	C	SL_ME1	Hrs	5		499		499	20%	100
1	03	05	10			Procure Component Material - Electron Beam Dump	8-Dec-06	20-Mar-07	C	SL_MSE	\$\$		10,000		10,752	10,752	20%	2,150
1	03	05	10			Component Fab & Assembly - Electron Beam Dump	21-Mar-07	13-Jun-07	C	SL_MFP	Hrs	25		4,329		4,329	20%	866
1	03	05	10			Component Fab & Assembly - Electron Beam Dump	21-Mar-07	13-Jun-07	C	SL_MFM	Hrs	25		2,758		2,758	20%	552
1	03	05	10			Component Fab & Assembly - Electron Beam Dump	21-Mar-07	13-Jun-07	C	SL_MFA	Hrs	160		13,789		13,789	20%	2,758
1	03	05	10			Perform QC / Metrology	14-Jun-07	20-Jun-07	C	SL_MES	Hrs	15		1,204		1,204	20%	241
1	03	05	10			Post Process & Test	21-Jun-07	5-Jul-07	C	SL_MFA	Hrs	40		3,447		3,447	20%	689
1	03	05	10			Prep Bid Pak - Diagnostics Supports	8-Dec-06	8-Dec-06	C	SL_ME1	Hrs	8		799		799	20%	160
1	03	05	10			Evaluate Vendor Proposals - Supports	11-Dec-06	11-Dec-06	C	SL_ME1	Hrs	5		499		499	20%	100
1	03	05	10			Vendor Fab Diagnostics Supports	13-Dec-06	25-Jan-07	C	SL_MSE	\$\$		2,500		2,688	2,688	20%	538
1	03	05	10			Procure Misc Materials - Diagnostics Supports	26-Jan-07	9-Mar-07	C	SL_MSE	\$\$		450		484	484	20%	97
1	03	05	10			Perform QC & Inspection - Diagnostic Supports	12-Mar-07	12-Mar-07	C	SL_MES	Hrs	8		642		642	20%	128
1	03	05	10			Assemble Supports	13-Mar-07	26-Mar-07	C	SL_MFA	Hrs	35		3,016		3,016	20%	603
1	03	05	11			Protection Collimators (5) Summary						968	58,200	88,303	62,579	150,883		22,632
1	03	05	11			Create / Remodel / Revise Dsn Documentation	8-Jan-07	6-Mar-07	C	SL_MDD	Hrs	240		20,096		20,096	15%	3,014
1	03	05	11			Design Check	8-Jan-07	6-Mar-07	C	SL_MDD	Hrs	240		20,096		20,096	15%	3,014
1	03	05	11			Write Component Traveler	7-Mar-07	12-Mar-07	C	SL_ME1	Hrs	16		1,598		1,598	15%	240
1	03	05	11			Conduct Protection Collimator PDR	13-Mar-07	13-Mar-07	C	SL_ME1	Hrs	4		399		399	15%	60
1	03	05	11			Generate Detailed Procurement Plan	14-Mar-07	14-Mar-07	C	SL_ME1	Hrs	5		499		499	15%	75
1	03	05	11			Conduct Protection Collimator FDR	15-Mar-07	15-Mar-07	C	SL_ME1	Hrs	2		200		200	15%	30
1	03	05	11			Prep Bid Pak - Protection Collimator	16-Mar-07	19-Mar-07	C	SL_ME1	Hrs	5		499		499	15%	75
1	03	05	11			Evaluate Vendor Proposals	17-Apr-07	20-Apr-07	C	SL_ME1	Hrs	5		499		499	15%	75
1	03	05	11			RCV: 1st Lot Diagnostics Equip from Vendor	22-May-07	22-May-07	C	SA_MSE	\$\$		40,000		43,010	43,010	15%	6,451
1	03	05	11			Procure Component Material - Protection Collimat	16-Mar-07	12-Apr-07	C	SL_MSE	\$\$		5,000		5,376	5,376	15%	806
1	03	05	11			Component Fab & Assembly - Protection Collimat	23-May-07	20-Jun-07	C	SL_MFP	Hrs	40		6,927		6,927	15%	1,039
1	03	05	11			Component Fab & Assembly - Protection Collimat	23-May-07	20-Jun-07	C	SL_MFM	Hrs	80		8,824		8,824	15%	1,324
1	03	05	11			Component Fab & Assembly - Protection Collimat	23-May-07	20-Jun-07	C	SL_MFA	Hrs	240		20,684		20,684	15%	3,103
1	03	05	11			Post Process & Test	21-Jun-07	5-Jul-07	C	SL_MFA	Hrs	40		3,447		3,447	15%	517
1	03	05	11			Prep Bid Pak - Diagnostics Supports	16-Mar-07	16-Mar-07	C	SL_ME1	Hrs	3		300		300	15%	45
1	03	05	11			Prep Bid Pak - Diagnostics Supports	16-Mar-07	16-Mar-07	C	SL_MDD	Hrs	5		419		419	15%	63
1	03	05	11			Evaluate Vendor Proposals - Supports	16-Apr-07	19-Apr-07	C	SL_ME1	Hrs	8		799		799	15%	120
1	03	05	11			Vendor Fab 1st Lot - Supports	23-Apr-07	18-May-07	C	SL_MSE	\$\$		12,000		12,903	12,903	15%	1,935
1	03	05	11			Procure Misc Materials - Diagnostics Supports	16-Mar-07	12-Apr-07	C	SL_MSE	\$\$		1,200		1,290	1,290	15%	194
1	03	05	11			Assemble Supports	21-May-07	29-May-07	C	SL_MFA	Hrs	35		3,016		3,016	15%	452
1	03	05	12			Movable Collimators (7x,3y) Summary						909	70,560	81,715	75,869	157,584		31,517
1	03	05	12			Perform Functional Testing - Movable Collimat	18-Sep-06	29-Sep-06	C	SL_CCA	Hrs	8		513		513	20%	103
1	03	05	12			Post Process & Test	2-Oct-06	13-Oct-06	C	SL_MFA	Hrs	8		689		689	20%	138
1	03	05	12			Produce Common Layout	1-Feb-07	1-Mar-07	C	SL_MDD	Hrs	96		8,038		8,038	20%	1,608
1	03	05	12			Develop General Specifications / Analysis	2-Mar-07	15-Mar-07	C	SL_ME1	Hrs	64		6,392		6,392	20%	1,278
1	03	05	12			Create / Remodel / Revise Dsn Documentation	5-Dec-06	15-Mar-07	C	SL_MDD	Hrs	272		22,776		22,776	20%	4,555
1	03	05	12			Write Component Traveler	16-Mar-07	23-Mar-07	C	SL_ME1	Hrs	20		1,997		1,997	20%	399
1	03	05	12			Generate Detailed Procurement Plan	26-Mar-07	26-Mar-07	C	SL_ME1	Hrs	4		399		399	20%	80
1	03	05	12			Evaluate Vendor Proposals	24-Apr-07	27-Apr-07	C	SL_ME1	Hrs	4		399		399	20%	80
1	03	05	12			RCV: 1st Lot Diagnostics Equip from Vendor	30-May-07	30-May-07	C	SA_MSE	\$\$		56,000		60,214	60,214	20%	12,043
1	03	05	12			Procure Component Material - Movable Collimator	27-Mar-07	19-Jun-07	C	SL_MSE	\$\$		5,600		6,021	6,021	20%	1,204
1	03	05	12			Component Fab & Assembly - Movable Collimator	31-May-07	23-Aug-07	C	SL_MFP	Hrs	20		3,463		3,463	20%	693
1	03	05	12			Component Fab & Assembly - Movable Collimator	31-May-07	23-Aug-07	C	SL_MFM	Hrs	64		7,059		7,059	20%	1,412
1	03	05	12			Component Fab & Assembly - Movable Collimator	31-May-07	23-Aug-07	C	SL_MFA	Hrs	128		11,032		11,032	20%	2,206
1	03	05	12			Perform QC / Metrology	24-Aug-07	7-Sep-07	C	SL_MES	Hrs	44		3,533		3,533	20%	707

Detailed Cost Estimate
LINAC SYSTEM

WBS Level						LCLA DCE Aug-2006 Description	Early Start	Early Finish	Fund Type	Res Code	Units	Work Rem. Bud. Qty		Work Rem. Full Burd and Escltd Cost			Contngcy %	Contingency \$	
1	2	3	4	5	6							Hours	\$	Labor	M&S	Total			
1	03	05	12			Perform Functional Testing - Movable Collimat	10-Sep-07	14-Sep-07	C	SL_CCA	Hrs	32		2,106		2,106	20%	421	
1	03	05	12			Post Process & Test	17-Sep-07	19-Sep-07	C	SL_MFA	Hrs	32		2,758		2,758	20%	552	
1	03	05	12			Evaluate Vendor Proposals - Supports	26-Apr-07	1-May-07	C	SL_ME1	Hrs	4		399		399	20%	80	
1	03	05	12			Vendor Fab 1st Lot - Supports	2-May-07	30-May-07	C	SL_MSE	\$\$		8,400		9,032		9,032	20%	1,806
1	03	05	12			Procure Misc Materials - Diagnostics Supports	2-May-07	30-May-07	C	SL_MSE	\$\$		560		602		602	20%	120
1	03	05	12			Assemble Supports	31-May-07	13-Jun-07	C	SL_MFA	Hrs	96		8,274		8,274	20%	1,655	
1	03	05	12			Vendor Fab 1st Lot	5-Jul-06	31-Jul-06	C	SA_MSE	\$\$		-		-		-	20%	-
1	03	05	12			Procure Component Material - Movable Collimator	5-Jul-06	31-Jul-06	C	SL_MSE	\$\$		-		-		-	20%	-
1	03	05	12			Vendor Fab 1st Lot - Supports	6-Jul-06	31-Jul-06	C	SA_MSE	\$\$		-		-		-	20%	-
1	03	05	12			Procure Misc Materials - Diagnostics Supports	5-Jul-06	31-Jul-06	C	SL_MSE	\$\$		-		-		-	20%	-
1	03	05	12			Component Fab & Assembly - Movable Collimator	1-Aug-06	28-Aug-06	C	SL_MFP	Hrs	8		1,350		1,350	20%	270	
1	03	05	12			Component Fab & Assembly - Movable Collimator	1-Aug-06	28-Aug-06	C	SL_MFM	Hrs	4		430		430	20%	86	
1	03	05	12			Component Fab & Assembly - Movable Collimator	1-Aug-06	28-Aug-06	C	SL_MFA	Hrs	1		105		105	20%	21	
1	03	05	13			Safety Electron Dump (1) Summary						367	23,250	32,545	25,000	57,544		11,509	
1	03	05	13			Write ICD - Single Beam Dump	1-Feb-07	7-Feb-07	C	SL_ME1	Hrs	8		799		799	20%	160	
1	03	05	13			Produce Common Layout	8-Feb-07	14-Feb-07	C	SL_MDD	Hrs	15		1,256		1,256	20%	251	
1	03	05	13			Develop General Specifications / Analysis	15-Feb-07	22-Feb-07	C	SL_ME1	Hrs	15		1,498		1,498	20%	300	
1	03	05	13			Create / Remodel / Revise Dsn Documentation	23-Feb-07	22-Mar-07	C	SL_MDD	Hrs	80		6,699		6,699	20%	1,340	
1	03	05	13			Design Check	23-Mar-07	17-May-07	C	SL_MDD	Hrs	40		3,349		3,349	20%	670	
1	03	05	13			Write Component Traveler	23-Mar-07	29-Mar-07	C	SL_ME1	Hrs	8		799		799	20%	160	
1	03	05	13			Conduct Single Beam Dump PDR	30-Mar-07	5-Apr-07	C	SL_ME1	Hrs	3		300		300	20%	60	
1	03	05	13			Generate Detailed Procurement Plan	6-Apr-07	6-Apr-07	C	SL_ME1	Hrs	5		499		499	20%	100	
1	03	05	13			Conduct Single Beam Dump FDR	9-Apr-07	13-Apr-07	C	SL_ME1	Hrs	3		300		300	20%	60	
1	03	05	13			Prep Bid Pak - Safety Dump	18-May-07	18-May-07	C	SL_ME1	Hrs	5		499		499	20%	100	
1	03	05	13			RCV: Saftey Dump from Vendor	19-Jul-07	19-Jul-07	C	SA_MSE	\$\$		20,000		21,505		21,505	20%	4,301
1	03	05	13			Procure Component Material - Single Beam Dump	18-May-07	15-Jun-07	C	SL_MSE	\$\$		1,000		1,075		1,075	20%	215
1	03	05	13			Component Fab & Assembly - Single Beam Dump	20-Jul-07	16-Aug-07	C	SL_MFM	Hrs	25		2,758		2,758	20%	552	
1	03	05	13			Component Fab & Assembly - Single Beam Dump	20-Jul-07	16-Aug-07	C	SL_MFA	Hrs	80		6,895		6,895	20%	1,379	
1	03	05	13			Post Process & Test	17-Aug-07	30-Aug-07	C	SL_MFA	Hrs	40		3,447		3,447	20%	689	
1	03	05	13			Assemble Supports	15-Aug-07	28-Aug-07	C	SL_MFA	Hrs	40		3,447		3,447	20%	689	
1	03	05	13			Vendor Fab Diagnostics Supports	18-May-07	16-Jul-07	C	SL_MSE	\$\$		2,000		2,150		2,150	20%	430
1	03	05	13			Procure Misc Materials - Diagnostics Supports	18-Jul-07	14-Aug-07	C	SL_MSE	\$\$		250		269		269	20%	54
1	03	05	14			Charge Monitor (Entrance/Exit Assembly)						681	36,000	62,698	38,709	101,407		20,281	
1	03	05	14			Specification and Requirements - CM	2-Oct-06	13-Oct-06	C	SL_PHS	Hrs	8		585		585	20%	117	
1	03	05	14			Specification and Requirements - CM	2-Oct-06	13-Oct-06	C	SL_EE1	Hrs	24		2,237		2,237	20%	447	
1	03	05	14			Specification and Requirements - Cable	16-Oct-06	6-Nov-06	C	SL_PHS	Hrs	8		585		585	20%	117	
1	03	05	14			Specification and Requirements - Cable	16-Oct-06	6-Nov-06	C	SL_EE1	Hrs	24		2,237		2,237	20%	447	
1	03	05	14			Purchase Cable	7-Nov-06	20-Dec-06	C	SL_PHS	Hrs	8		585		585	20%	117	
1	03	05	14			Purchase Cable	7-Nov-06	20-Dec-06	C	SL_MSE	\$\$		6,000		6,451		6,451	20%	1,290
1	03	05	14			Purchase Cable	7-Nov-06	20-Dec-06	C	SL_EE1	Hrs	8		746		746	20%	149	
1	03	05	14			Preliminary Design - CM	16-Oct-06	3-Nov-06	C	SL_ME1	Hrs	40		3,995		3,995	20%	799	
1	03	05	14			Preliminary Design - CM	16-Oct-06	3-Nov-06	C	SL_MDD	Hrs	96		8,038		8,038	20%	1,608	
1	03	05	14			Preliminary Design - CM	16-Oct-06	3-Nov-06	C	SL_EE1	Hrs	32		2,983		2,983	20%	597	
1	03	05	14			Design Review - CM	6-Nov-06	10-Nov-06	C	SL_EE1	Hrs	16		1,492		1,492	20%	298	
1	03	05	14			Final Design - CM	13-Nov-06	5-Dec-06	C	SL_EE1	Hrs	16		1,492		1,492	20%	298	
1	03	05	14			Prepare Bid of Charge Monitor Package	6-Dec-06	12-Dec-06	C	SL_EE1	Hrs	24		2,237		2,237	20%	447	
1	03	05	14			Bid Process - CM	13-Dec-06	25-Jan-07	C	SL_EE1	Hrs	8		746		746	20%	149	
1	03	05	14			AWARD: Charge Monitor Package (2) Sppt	26-Jan-07	1-Feb-07	C	SL_EE1	Hrs	8		746		746	20%	149	
1	03	05	14			Rec: Charge Monitor Package (2)	2-Feb-07	15-Mar-07	C	SL_MSE	\$\$		30,000		32,257		32,257	20%	6,451
1	03	05	14			Rec: Charge Monitor Package (2)	2-Feb-07	15-Mar-07	C	SL_EE1	Hrs	8		746		746	20%	149	
1	03	05	14			QA Production Lot	16-Mar-07	29-Mar-07	C	SL_MFM	Hrs	24		2,647		2,647	20%	529	
1	03	05	14			QA Production Lot	16-Mar-07	29-Mar-07	C	SL_ME1	Hrs	16		1,598		1,598	20%	320	

Detailed Cost Estimate
LINAC SYSTEM

WBS Level						LCLA DCE Aug-2006 Description	Early Start	Early Finish	Fund Type	Res Code	Units	Work Rem. Bud. Qty		Work Rem. Full Burd and Escltd Cost			Contngcy %	Contingency \$
1	2	3	4	5	6							Hours	\$	Labor	M&S	Total		
1	03	05	14			QA Production Lot	16-Mar-07	29-Mar-07	C	SL_EE1	Hrs	16		1,492		1,492	20%	298
1	03	05	14			Approve Production Lot	30-Mar-07	3-Apr-07	C	SL_ME1	Hrs	8		799		799	20%	160
1	03	05	14			Approve Production Lot	30-Mar-07	3-Apr-07	C	SL_EE1	Hrs	8		746		746	20%	149
1	03	05	14			Assemble Charge Monitor	4-Apr-07	6-Apr-07	C	SL_MFA	Hrs	40		3,447		3,447	20%	689
1	03	05	14			Assemble Charge Monitor	4-Apr-07	6-Apr-07	C	SL_ME1	Hrs	24		2,397		2,397	20%	479
1	03	05	14			Assemble Charge Monitor	4-Apr-07	6-Apr-07	C	SL_EE1	Hrs	24		2,237		2,237	20%	447
1	03	05	14			Clean Charge Monitor	9-Apr-07	10-Apr-07	C	SL_MFA	Hrs	16		1,379		1,379	20%	276
1	03	05	14			Clean Charge Monitor	9-Apr-07	10-Apr-07	C	SL_ME1	Hrs	8		799		799	20%	160
1	03	05	14			Leak Check Charge Monitor	11-Apr-07	12-Apr-07	C	SL_MFA	Hrs	16		1,379		1,379	20%	276
1	03	05	14			Leak Check Charge Monitor	11-Apr-07	12-Apr-07	C	SL_ME1	Hrs	8		799		799	20%	160
1	03	05	14			Test Charge Monitor	13-Apr-07	16-Apr-07	C	SL_ME1	Hrs	8		799		799	20%	160
1	03	05	14			Test Charge Monitor	13-Apr-07	16-Apr-07	C	SL_CT1	Hrs	16		990		990	20%	198
1	03	05	14			Pack Charge Monitor for Shipping	17-Apr-07	25-Apr-07	C	SL_MFA	Hrs	8		689		689	20%	138
1	03	05	14			Pack Charge Monitor for Shipping	17-Apr-07	25-Apr-07	C	SL_ME1	Hrs	8		799		799	20%	160
1	03	05	14			Write Shipping Paper Work	26-Apr-07	2-May-07	C	SL_ME1	Hrs	8		799		799	20%	160
1	03	05	14			Transmit Engineering Data to Slac	3-May-07	9-May-07	C	SL_ME1	Hrs	8		799		799	20%	160
1	03	05	14			Transmit Engineering Data to Slac	3-May-07	9-May-07	C	SL_MDD	Hrs	8		670		670	20%	134
1	03	05	14			Develop Installation Plan	10-May-07	29-May-07	C	SL_SEE1	Hrs	8		850		850	20%	170
1	03	05	14			Develop Installation Plan	10-May-07	29-May-07	C	SL_ME1	Hrs	24		2,397		2,397	20%	479
1	03	05	14			Develop Installation Plan	10-May-07	29-May-07	C	SL_EE1	Hrs	24		2,237		2,237	20%	447
1	03	05	14			Review installation Plan	30-May-07	7-Jun-07	C	SL_SEE1	Hrs	9		956		956	20%	191
1	03	05	14			Review installation Plan	30-May-07	7-Jun-07	C	SL_ME1	Hrs	8		799		799	20%	160
1	03	05	14			Review installation Plan	30-May-07	7-Jun-07	C	SL_EE1	Hrs	8		746		746	20%	149
1	03	06				Linac RF Subsystem						1,003	188,000	107,048	215,949	322,997		52,515
1	03	06	02			S-Band High Power System						625	-	63,267	-	63,267		331
1	03	06	02			Collect Component Performance Data	1-Aug-06	7-Aug-06	C	SL_ME1	Hrs	4		389		389	25%	97
1	03	06	02			Receive System / Sub Assemblies	1-Aug-06	1-Aug-06	C	SL_ME1	Hrs	4		389		389	25%	97
1	03	06	02			Fab & Cold Test - T-Cav Waveguide	8-Jan-07	1-May-07	C	SL_MFP	Hrs	40		6,927		6,927	0%	-
1	03	06	02			Fab & Cold Test - T-Cav Waveguide	8-Jan-07	1-May-07	C	SL_MFM	Hrs	240		26,473		26,473	0%	-
1	03	06	02			Fab & Cold Test - T-Cav Waveguide	8-Jan-07	1-May-07	C	SL_MFA	Hrs	120		10,342		10,342	0%	-
1	03	06	02			Fab & Cold Test - T-Cav Waveguide	8-Jan-07	1-May-07	C	SL_KT1	Hrs	40		2,475		2,475	0%	-
1	03	06	02			Fab & Cold Test - T-Cav Waveguide	8-Jan-07	1-May-07	C	SL_KE1	Hrs	40		4,521		4,521	0%	-
1	03	06	02			Post Process T-Cav Waveguide	2-May-07	30-May-07	C	SL_MFA	Hrs	130		11,204		11,204	0%	-
1	03	06	02			Vendor Fab & Assy - S-Band Waveguide	5-Jul-06	31-Jul-06	C	SA_MSE	\$\$			-		-	15%	-
1	03	06	02			Fab & Test - Waveguide Supports	5-Jul-06	31-Jul-06	C	SL_MFM	Hrs	-		-		-	15%	-
1	03	06	02			Fab & Cold Test - Cold Test Hardware	5-Jul-06	18-Jul-06	C	SL_MFM	Hrs	-		-		-	15%	-
1	03	06	02			Fab & Cold Test - Cold Test Hardware	5-Jul-06	18-Jul-06	C	SL_KE1	Hrs	-		-		-	15%	-
1	03	06	02			Fab & Cold Test - Waveguide Straights	5-Jul-06	18-Jul-06	C	SL_MFP	Hrs	-		-		-	15%	-
1	03	06	02			Fab & Cold Test - Waveguide Straights	5-Jul-06	18-Jul-06	C	SL_MFM	Hrs	-		-		-	15%	-
1	03	06	02			Fab & Cold Test - Waveguide Straights	5-Jul-06	18-Jul-06	C	SL_KE1	Hrs	-		-		-	15%	-
1	03	06	02			Fab & Cold Test - Waveguide Components	5-Jul-06	18-Jul-06	C	SL_MFP	Hrs	-		-		-	15%	-
1	03	06	02			Fab & Cold Test - Waveguide Components	5-Jul-06	18-Jul-06	C	SL_MFM	Hrs	-		-		-	15%	-
1	03	06	02			Fab & Cold Test - Waveguide Components	5-Jul-06	18-Jul-06	C	SL_MFA	Hrs	-		-		-	15%	-
1	03	06	02			Fab & Cold Test - Waveguide Components	5-Jul-06	18-Jul-06	C	SL_KT1	Hrs	-		-		-	15%	-
1	03	06	02			Fab & Cold Test - Waveguide Components	5-Jul-06	18-Jul-06	C	SL_KE1	Hrs	-		-		-	15%	-
1	03	06	02			Post Process Waveguide	1-Aug-06	12-Sep-06	C	SL_MFA	Hrs	7		546		546	25%	137
1	03	06	03			S-Band Structures												
1	03	06	04			X-Band Low Level System						378	188,000	43,781	215,949	259,730		52,184
1	03	06	05			X-Band High Power System												
1	03	06	05	01		X-Band HP Klystron												
1	03	06	05	02		X-Band HP Modulator												
1	03	06	05	03		X-Band HP Waveguide System												

Detailed Cost Estimate
LINAC SYSTEM

WBS Level						LCLA DCE Aug-2006 Description	Early Start	Early Finish	Fund Type	Res Code	Units	Work Rem. Bud. Qty		Work Rem. Full Burd and Escltd Cost			Contngcy %	Contingency \$	
1	2	3	4	5	6							Hours	\$	Labor	M&S	Total			
1	03	06	06			X-Band Structures													
1	03	06	07			RF Distribution System													
1	03	06	07	01		Modulator Refurbishment													
1	03	06	07	02		Solid State Sub Booster													
1	03	06	07	03		IPA Modifications													
1	03	06	07	04		Klystron Controls Interfaces													
1	03	06	07	05		Bunch Length Electronics													
1	03	06	07	06		RF Phase Measurements													
1	03	06	07	07		RF Distribution L2 & L3													
1	03	06	07	08		RF Fiber Optics Electronics System													
1	03	06	07	09		RF Stability													
1	03	07				Linac Installation & Alignment						27,484	897,105	2,460,028	926,735	3,386,763	853,859		
1	03	07	01			Linac L01 System Installation & Alignment						-	-	-	-	-	-		
1	03	07	01			Procure Installation & Alignment Tooling	5-Jul-06	31-Jul-06	C	SA_MSE	\$\$		-	-	-	-	15%	-	
1	03	07	01			Kit New Components for Installation	5-Jul-06	31-Jul-06	C	SL_MFA	Hrs	-	-	-	-	-	15%	-	
1	03	07	01			Kit New Components for Installation	5-Jul-06	31-Jul-06	C	SL_ME1	Hrs	-	-	-	-	-	15%	-	
1	03	07	02			Linac BC1 System Installation & Alignment						-	-	-	-	-	-		
1	03	07	02			Procure Installation Hardware	5-Jul-06	31-Jul-06	C	SL_MSE	\$\$		-	-	-	-	15%	-	
1	03	07	02			Procure Installation Tooling	19-Jul-06	31-Jul-06	C	SL_MSE	\$\$		-	-	-	-	15%	-	
1	03	07	02			Kit New Components for Installation	5-Jul-06	31-Jul-06	C	SL_MFA	Hrs	-	-	-	-	-	15%	-	
1	03	07	02			Kit New Components for Installation	5-Jul-06	31-Jul-06	C	SL_ME1	Hrs	-	-	-	-	-	15%	-	
1	03	07	03			Linac L02 System Installation & Alignment													
1	03	07	04			Linac BC2 System Installation & Alignment													
1	03	07	05			Linac L03 System Installation & Alignment													
1	03	07	06			Linac LTU System Installation & Alignment						7,688	175,000	694,816	192,362	887,178	221,794		
1	03	07	06			Linac LTU/Dump Integration Oversight Shut Down	4-Sep-07	4-Feb-08	C	SL_ME1	Hrs	1,344		137,099		137,099	25%	34,275	
1	03	07	06			Establish & Maintain Component Storage Facility	15-Mar-07	3-Aug-07	C	SL_MSE	\$\$		25,000		26,881		26,881	25%	6,720
1	03	07	06			RCV: Installation Hardware	2-Oct-07	2-Oct-07	C	SL_MSE	\$\$		75,000		82,740		82,740	25%	20,685
1	03	07	06			RCV: Installation Tooling	2-Oct-07	2-Oct-07	C	SL_MSE	\$\$		75,000		82,740		82,740	25%	20,685
1	03	07	06			Kit New Components for Installation	3-Oct-07	30-Oct-07	C	SL_MFA	Hrs	600		53,055		53,055	25%	13,264	
1	03	07	06			Kit New Components for Installation	3-Oct-07	30-Oct-07	C	SL_ME1	Hrs	320		32,789		32,789	25%	8,197	
1	03	07	06			Establish Alignment Coordinates for B/L Equip	5-Jul-06	7-Jul-06	C	SL_MFA	Hrs	-		-		-	25%	-	
1	03	07	06			Establish Alignment Coordinates for B/L Equip	5-Jul-06	7-Jul-06	C	SL_MES	Hrs	-		-		-	25%	-	
1	03	07	06			Establish Alignment Coordinates for B/L Equip	5-Jul-06	7-Jul-06	C	SL_ME1	Hrs	-		-		-	25%	-	
1	03	07	06			Install All Racks, Cables, Trays & Test	21-Nov-07	14-Jan-08	C	SL_TMU	Hrs	1,500		147,777		147,777	25%	36,944	
1	03	07	06			Install All Racks, Cables, Trays & Test	21-Nov-07	14-Jan-08	C	SL_PCT1	Hrs	216		13,714		13,714	25%	3,428	
1	03	07	06			Install All Racks, Cables, Trays & Test	21-Nov-07	14-Jan-08	C	SL_PCE1	Hrs	540		62,624		62,624	25%	15,656	
1	03	07	06			Install All Racks, Cables, Trays & Test	21-Nov-07	14-Jan-08	C	SL_PCC	Hrs	540		36,471		36,471	25%	9,118	
1	03	07	06			Install All Racks, Cables, Trays & Test	21-Nov-07	14-Jan-08	C	SL_CT1	Hrs	60		3,809		3,809	25%	952	
1	03	07	06			Install All Racks, Cables, Trays & Test	21-Nov-07	14-Jan-08	C	SL_CE1	Hrs	60		6,958		6,958	25%	1,740	
1	03	07	06			Install All Racks, Cables, Trays & Test	21-Nov-07	14-Jan-08	C	SL_CCA	Hrs	360		24,314		24,314	25%	6,079	
1	03	07	06			Install Beamline Components	21-Nov-07	13-Dec-07	C	SL_MFA	Hrs	600		53,055		53,055	25%	13,264	
1	03	07	06			Install Beamline Components	21-Nov-07	13-Dec-07	C	SL_ME1	Hrs	60		6,148		6,148	25%	1,537	
1	03	07	06			Align Beamline Components to Coordinate System	14-Dec-07	4-Jan-08	C	SL_MFA	Hrs	240		21,222		21,222	25%	5,305	
1	03	07	06			Align Beamline Components to Coordinate System	14-Dec-07	4-Jan-08	C	SL_MES	Hrs	240		19,771		19,771	25%	4,943	
1	03	07	06			Magnet Power Interconnect & Test	7-Jan-08	9-Jan-08	C	SL_CT1	Hrs	120		7,619		7,619	25%	1,905	
1	03	07	06			Magnet Power Interconnect & Test	7-Jan-08	9-Jan-08	C	SL_CE1	Hrs	10		1,160		1,160	25%	290	
1	03	07	06			Magnet Power Interconnect & Test	7-Jan-08	9-Jan-08	C	SL_CCA	Hrs	30		2,026		2,026	25%	507	
1	03	07	06			Controls Interconnect & Test	15-Jan-08	17-Jan-08	C	SL_CT1	Hrs	120		7,619		7,619	25%	1,905	
1	03	07	06			Controls Interconnect & Test	15-Jan-08	17-Jan-08	C	SL_CE1	Hrs	10		1,160		1,160	25%	290	
1	03	07	06			Controls Interconnect & Test	15-Jan-08	17-Jan-08	C	SL_CCA	Hrs	30		2,026		2,026	25%	507	
1	03	07	06			Interconnect Vacuum System & Test	4-Feb-08	6-Feb-08	C	SL_MFA	Hrs	120		10,611		10,611	25%	2,653	

Detailed Cost Estimate
LINAC SYSTEM

WBS Level						LCLA DCE Aug-2006 Description	Early Start	Early Finish	Fund Type	Res Code	Units	Work Rem. Bud. Qty		Work Rem. Full Burd and Escltd Cost			Contngcy %	Contingency \$	
1	2	3	4	5	6							Hours	\$	Labor	M&S	Total			
1	03	07	06			Interconnect Vacuum System & Test	4-Feb-08	6-Feb-08	C	SL_ME1	Hrs	40		4,099		4,099	25%	1,025	
1	03	07	06			Interconnect Vacuum System & Test	4-Feb-08	6-Feb-08	C	SL_CT1	Hrs	120		7,619		7,619	25%	1,905	
1	03	07	06			Interconnect Vacuum System & Test	4-Feb-08	6-Feb-08	C	SL_CE1	Hrs	10		1,160		1,160	25%	290	
1	03	07	06			Interconnect Vacuum System & Test	4-Feb-08	6-Feb-08	C	SL_CCA	Hrs	30		2,026		2,026	25%	507	
1	03	07	06			Perform Magnet Power Test	7-Feb-08	8-Feb-08	C	SL_CT1	Hrs	80		5,079		5,079	25%	1,270	
1	03	07	06			Perform Magnet Power Test	7-Feb-08	8-Feb-08	C	SL_CE1	Hrs	8		928		928	25%	232	
1	03	07	06			Perform Magnet Power Test	7-Feb-08	8-Feb-08	C	SL_CCA	Hrs	16		1,081		1,081	25%	270	
1	03	07	06			Perform Diagnostics Controls Test	11-Feb-08	13-Feb-08	C	SL_CT1	Hrs	80		5,079		5,079	25%	1,270	
1	03	07	06			Perform Diagnostics Controls Test	11-Feb-08	13-Feb-08	C	SL_CE1	Hrs	8		928		928	25%	232	
1	03	07	06			Perform Diagnostics Controls Test	11-Feb-08	13-Feb-08	C	SL_CCA	Hrs	16		1,081		1,081	25%	270	
1	03	07	06			Coordinate & Check Installation	14-Feb-08	26-Feb-08	C	SL_MFA	Hrs	120		10,611		10,611	25%	2,653	
1	03	07	06			Coordinate & Check Installation	14-Feb-08	26-Feb-08	C	SL_ME1	Hrs	40		4,099		4,099	25%	1,025	
1	03	07	07			Linac E-Dump System Installation & Alignment						5,732	166,875	502,560	179,143	681,703		170,426	
1	03	07	07			Establish & Maintain Component Storage Facility	5-Jul-06	31-Aug-06	C	SL_MSE	\$\$			-		-	25%	-	
1	03	07	07			Establish & Maintain Component Storage Facility	5-Jul-06	22-Nov-06	C	SL_MSE	\$\$		16,875		17,856		17,856	25%	4,464
1	03	07	07			Kit New Components for Installation	20-Nov-07	4-Jan-08	C	SL_MFA	Hrs	600		53,055		53,055	25%	13,264	
1	03	07	07			Kit New Components for Installation	20-Nov-07	4-Jan-08	C	SL_ME1	Hrs	320		32,789		32,789	25%	8,197	
1	03	07	07			Establish Alignment Coordinates for B/L Equip	20-Nov-07	26-Nov-07	C	SL_MFA	Hrs	240		21,222		21,222	25%	5,305	
1	03	07	07			Establish Alignment Coordinates for B/L Equip	20-Nov-07	26-Nov-07	C	SL_MES	Hrs	288		23,725		23,725	25%	5,931	
1	03	07	07			Establish Alignment Coordinates for B/L Equip	20-Nov-07	26-Nov-07	C	SL_ME1	Hrs	120		12,296		12,296	25%	3,074	
1	03	07	07			Install All Racks, Cables, Trays & Test	27-Nov-07	16-Jan-08	C	SL_TMU	Hrs	1,500		147,777		147,777	25%	36,944	
1	03	07	07			Install All Racks, Cables, Trays & Test	27-Nov-07	16-Jan-08	C	SL_PCT	Hrs	16		1,016		1,016	25%	254	
1	03	07	07			Install All Racks, Cables, Trays & Test	27-Nov-07	16-Jan-08	C	SL_PCE	Hrs	20		2,319		2,319	25%	580	
1	03	07	07			Install All Racks, Cables, Trays & Test	27-Nov-07	16-Jan-08	C	SL_PCC	Hrs	20		1,351		1,351	25%	338	
1	03	07	07			Install All Racks, Cables, Trays & Test	27-Nov-07	16-Jan-08	C	SL_CT1	Hrs	400		25,396		25,396	25%	6,349	
1	03	07	07			Install All Racks, Cables, Trays & Test	27-Nov-07	16-Jan-08	C	SL_CE1	Hrs	12		1,392		1,392	25%	348	
1	03	07	07			Install All Racks, Cables, Trays & Test	27-Nov-07	16-Jan-08	C	SL_CCA	Hrs	48		3,242		3,242	25%	810	
1	03	07	07			Install Beamline Components	11-Dec-07	16-Jan-08	C	SL_MFA	Hrs	600		53,055		53,055	25%	13,264	
1	03	07	07			Install Beamline Components	11-Dec-07	16-Jan-08	C	SL_ME1	Hrs	60		6,148		6,148	25%	1,537	
1	03	07	07			Align Beamline Components to Coordinate System	17-Jan-08	23-Jan-08	C	SL_MFA	Hrs	240		21,222		21,222	25%	5,305	
1	03	07	07			Align Beamline Components to Coordinate System	17-Jan-08	23-Jan-08	C	SL_MES	Hrs	240		19,771		19,771	25%	4,943	
1	03	07	07			Magnet Power Interconnect & Test	24-Jan-08	28-Jan-08	C	SL_CT1	Hrs	120		7,619		7,619	25%	1,905	
1	03	07	07			Magnet Power Interconnect & Test	24-Jan-08	28-Jan-08	C	SL_CE1	Hrs	10		1,160		1,160	25%	290	
1	03	07	07			Magnet Power Interconnect & Test	24-Jan-08	28-Jan-08	C	SL_CCA	Hrs	30		2,026		2,026	25%	507	
1	03	07	07			Controls Interconnect & Test	24-Jan-08	28-Jan-08	C	SL_CT1	Hrs	120		7,619		7,619	25%	1,905	
1	03	07	07			Controls Interconnect & Test	24-Jan-08	28-Jan-08	C	SL_CE1	Hrs	10		1,160		1,160	25%	290	
1	03	07	07			Controls Interconnect & Test	24-Jan-08	28-Jan-08	C	SL_CCA	Hrs	30		2,026		2,026	25%	507	
1	03	07	07			Interconnect Vacuum System & Test	4-Feb-08	6-Feb-08	C	SL_MFA	Hrs	120		10,611		10,611	25%	2,653	
1	03	07	07			Interconnect Vacuum System & Test	4-Feb-08	6-Feb-08	C	SL_ME1	Hrs	40		4,099		4,099	25%	1,025	
1	03	07	07			Interconnect Vacuum System & Test	4-Feb-08	6-Feb-08	C	SL_CT1	Hrs	120		7,619		7,619	25%	1,905	
1	03	07	07			Interconnect Vacuum System & Test	4-Feb-08	6-Feb-08	C	SL_CE1	Hrs	10		1,160		1,160	25%	290	
1	03	07	07			Interconnect Vacuum System & Test	4-Feb-08	6-Feb-08	C	SL_CCA	Hrs	30		2,026		2,026	25%	507	
1	03	07	07			Perform Magnet Power Test	7-Feb-08	8-Feb-08	C	SL_CT1	Hrs	80		5,079		5,079	25%	1,270	
1	03	07	07			Perform Magnet Power Test	7-Feb-08	8-Feb-08	C	SL_CE1	Hrs	8		928		928	25%	232	
1	03	07	07			Perform Magnet Power Test	7-Feb-08	8-Feb-08	C	SL_CCA	Hrs	16		1,081		1,081	25%	270	
1	03	07	07			Perform Diagnostics Controls Test	11-Feb-08	13-Feb-08	C	SL_CT1	Hrs	80		5,079		5,079	25%	1,270	
1	03	07	07			Perform Diagnostics Controls Test	11-Feb-08	13-Feb-08	C	SL_CE1	Hrs	24		2,783		2,783	25%	696	
1	03	07	07			Coordinate & Check Installation	14-Feb-08	26-Feb-08	C	SL_MFA	Hrs	120		10,611		10,611	25%	2,653	
1	03	07	07			Coordinate & Check Installation	14-Feb-08	26-Feb-08	C	SL_ME1	Hrs	40		4,099		4,099	25%	1,025	
1	03	07	07			RCV: Installation Hardware	7-Feb-07	7-Feb-07	C	SL_MSE	\$\$		75,000		80,644		80,644	25%	20,161
1	03	07	07			RCV: Installation Tooling	7-Feb-07	7-Feb-07	C	SL_MSE	\$\$		75,000		80,644		80,644	25%	20,161
1	03	07	10			LINAC Installation 2006 Shut Down						5,372	374,840	462,415	374,840	837,255		167,451	

Detailed Cost Estimate
LINAC SYSTEM

WBS Level						LCLA DCE Aug-2006 Description	Early Start	Early Finish	Fund Type	Res Code	Units	Work Rem. Bud. Qty		Work Rem. Full Burd and Escltd Cost			Contngcy %	Contingency \$
1	2	3	4	5	6							Hours	\$	Labor	M&S	Total		
1	03	07	10	01		Beamline Equip Removal L01 thru BC1 Out						1,396	-	118,568	-	118,568		23,714
1	03	07	10	01		Planning, preparation and staging prior to downt	5-Jul-06	31-Jul-06	C	SL_MFA	Hrs	-	-	-	-	-	20%	-
1	03	07	10	01		Vent Sector 20	1-Aug-06	31-Aug-06	C	SL_MFA	Hrs	-	-	-	-	-	20%	-
1	03	07	10	01		Vent sector 21	1-Aug-06	31-Aug-06	C	SL_MFA	Hrs	-	-	-	-	-	20%	-
1	03	07	10	01		Drain Water	1-Aug-06	31-Aug-06	C	SL_TMU	Hrs	-	-	-	-	-	20%	-
1	03	07	10	01		Disconnect Water from Structures and Loads	1-Aug-06	31-Aug-06	C	SL_MFA	Hrs	-	-	-	-	-	20%	-
1	03	07	10	01		Remove Magnet Power Leads	1-Aug-06	31-Aug-06	C	SL_MFA	Hrs	-	-	-	-	-	20%	-
1	03	07	10	01		Remove Klixon Leads	1-Aug-06	31-Aug-06	C	SL_MFA	Hrs	-	-	-	-	-	20%	-
1	03	07	10	01		Remove LLRF	1-Aug-06	31-Aug-06	C	SL_KT1	Hrs	-	-	-	-	-	20%	-
1	03	07	10	01		Remove Waveguide and Loads from Structure	1-Aug-06	4-Aug-06	C	SL_MFA	Hrs	19	1,613	1,613	1,613	1,613	20%	323
1	03	07	10	01		Remove fast valve between sector 20 and 21	1-Aug-06	1-Aug-06	C	SL_MFA	Hrs	2	202	202	202	202	20%	40
1	03	07	10	01		Grind upstream and downstream eyelets	1-Aug-06	1-Aug-06	C	SL_MFA	Hrs	5	403	403	403	403	20%	81
1	03	07	10	01		Remove Accelerator Section LI21 120 1B	1-Aug-06	1-Aug-06	C	SL_MFA	Hrs	10	806	806	806	806	20%	161
1	03	07	10	01		Remove Waveguide and Loads from Structure	1-Aug-06	4-Aug-06	C	SL_MFA	Hrs	19	1,613	1,613	1,613	1,613	20%	323
1	03	07	10	01		Grind upstream and downstream eyelets	1-Aug-06	1-Aug-06	C	SL_MFA	Hrs	5	403	403	403	403	20%	81
1	03	07	10	01		Remove Accelerator Section LI21 130 1C	1-Aug-06	1-Aug-06	C	SL_MFA	Hrs	10	806	806	806	806	20%	161
1	03	07	10	01		Remove BPM Cables from BPM 201 and BPM 301	1-Aug-06	31-Aug-06	C	SL_CE1	Hrs	-	-	-	-	-	20%	-
1	03	07	10	01		Remove Quad LI21 20 QEF 201	1-Aug-06	1-Aug-06	C	SL_MFA	Hrs	5	403	403	403	403	20%	81
1	03	07	10	01		Remove Waveguide and Loads from Structure	1-Aug-06	4-Aug-06	C	SL_MFA	Hrs	19	1,613	1,613	1,613	1,613	20%	323
1	03	07	10	01		Grind upstream and downstream eyelets	1-Aug-06	1-Aug-06	C	SL_MFA	Hrs	5	403	403	403	403	20%	81
1	03	07	10	01		Remove Accelerator Section LI21 210 2A	1-Aug-06	1-Aug-06	C	SL_MFA	Hrs	10	806	806	806	806	20%	161
1	03	07	10	01		Remove Waveguide and Loads from Structure	1-Aug-06	4-Aug-06	C	SL_MFA	Hrs	19	1,613	1,613	1,613	1,613	20%	323
1	03	07	10	01		Grind upstream and downstream eyelets	1-Aug-06	1-Aug-06	C	SL_MFA	Hrs	5	403	403	403	403	20%	81
1	03	07	10	01		Remove Accelerator Section LI21 220 2B	1-Aug-06	1-Aug-06	C	SL_MFA	Hrs	19	1,613	1,613	1,613	1,613	20%	323
1	03	07	10	01		Remove Waveguide and Loads from Structure	1-Aug-06	4-Aug-06	C	SL_MFA	Hrs	19	1,613	1,613	1,613	1,613	20%	323
1	03	07	10	01		Grind upstream and downstream eyelets	1-Aug-06	1-Aug-06	C	SL_MFA	Hrs	5	403	403	403	403	20%	81
1	03	07	10	01		Remove Accelerator Section LI21 230 2C	1-Aug-06	1-Aug-06	C	SL_MFA	Hrs	19	1,613	1,613	1,613	1,613	20%	323
1	03	07	10	01		Remove Waveguide and Loads from Structure	1-Aug-06	4-Aug-06	C	SL_MFA	Hrs	19	1,613	1,613	1,613	1,613	20%	323
1	03	07	10	01		Grind upstream and downstream eyelets	1-Aug-06	1-Aug-06	C	SL_MFA	Hrs	5	403	403	403	403	20%	81
1	03	07	10	01		Remove Accelerator Section LI21 240 2D	1-Aug-06	1-Aug-06	C	SL_MFA	Hrs	19	1,613	1,613	1,613	1,613	20%	323
1	03	07	10	01		Remove Waveguide and Loads from Structure	1-Aug-06	4-Aug-06	C	SL_MFA	Hrs	19	1,613	1,613	1,613	1,613	20%	323
1	03	07	10	01		Remove vacuum header for BC1 chican table	1-Aug-06	3-Aug-06	C	SL_MFA	Hrs	14	1,210	1,210	1,210	1,210	20%	242
1	03	07	10	01		Grind upstream and downstream eyelets	1-Aug-06	1-Aug-06	C	SL_MFA	Hrs	5	403	403	403	403	20%	81
1	03	07	10	01		Remove Quad LI21 30 QED 301	1-Aug-06	1-Aug-06	C	SL_MFA	Hrs	5	403	403	403	403	20%	81
1	03	07	10	01		Remove Accelerator Section LI21 310 3A	1-Aug-06	1-Aug-06	C	SL_MFA	Hrs	19	1,613	1,613	1,613	1,613	20%	323
1	03	07	10	01		Secure Vacuum System	11-Dec-06	11-Dec-06	C	SL_MFA	Hrs	16	1,379	1,379	1,379	1,379	20%	276
1	03	07	10	01		MFD Installation Support	1-Aug-06	11-Dec-06	C	SL_MFA	Hrs	1,080	91,989	91,989	91,989	91,989	20%	18,398
1	03	07	10	02		Gallery Waveguide Installation						1,848	164,600	162,624	164,600	327,224		65,445
1	03	07	10	02		Linac Integration Oversight 2006 Shut Down	5-Jul-06	4-Oct-06	C	SL_ME1	Hrs	736	-	71,703	71,703	71,703	20%	14,341
1	03	07	10	02		RCV: 3ea Pumping Carts	5-Sep-06	5-Sep-06	C	SL_MSP	\$\$	-	120,000	-	120,000	120,000	20%	24,000
1	03	07	10	02		Install Gallery Waveguide Supports	6-Sep-06	25-Sep-06	C	SL_MSP	\$\$	-	29,600	-	29,600	29,600	20%	5,920
1	03	07	10	02		Set up for Waveguide installation	1-Aug-06	31-Aug-06	C	SL_MFA	Hrs	-	-	-	-	-	20%	-
1	03	07	10	02		Transport Waveguide to Installation Site	1-Aug-06	31-Aug-06	C	SL_MFA	Hrs	-	-	-	-	-	20%	-
1	03	07	10	02		Install Gallery Waveguide	2-Aug-06	29-Aug-06	C	SL_MFA	Hrs	960	80,640	80,640	80,640	80,640	20%	16,128
1	03	07	10	02		Install penetration 2.93 waveguide	1-Aug-06	1-Aug-06	C	SL_MFA	Hrs	24	2,016	2,016	2,016	2,016	20%	403
1	03	07	10	02		Install penetration 2.93 waveguide	1-Aug-06	1-Aug-06	C	SL_TMU	Hrs	16	1,237	1,237	1,237	1,237	20%	247
1	03	07	10	02		Install 3ea PVC Conduit at 20-17	2-Aug-06	2-Aug-06	C	SL_PCE	Hrs	32	1,930	1,930	1,930	1,930	20%	386
1	03	07	10	02		Install 3ea PVC Conduit at 20-17	2-Aug-06	2-Aug-06	C	SL_TMU	Hrs	16	1,237	1,237	1,237	1,237	20%	247
1	03	07	10	02		Install X Band Klystron	3-Aug-06	8-Aug-06	C	SL_KT1	Hrs	64	3,860	3,860	3,860	3,860	20%	772
1	03	07	10	02		Install insulation on waveguide	30-Aug-06	13-Sep-06	C	SL_MSP	\$\$	-	15,000	-	15,000	15,000	20%	3,000
1	03	07	10	03		Beamline Equip Installation L01 thru BC1 Out						2,128	48,500	181,224	48,500	229,724		45,945
1	03	07	10	03		Planning, preparation and staging prior to downt	5-Jul-06	31-Jul-06	C	SL_MFA	Hrs	-	-	-	-	-	20%	-

Detailed Cost Estimate
LINAC SYSTEM

WBS Level						LCLA DCE Aug-2006 Description	Early Start	Early Finish	Fund Type	Res Code	Units	Work Rem. Bud. Qty		Work Rem. Full Burd and Escltd Cost			Contngcy %	Contingency \$	
1	2	3	4	5	6							Hours	\$	Labor	M&S	Total			
1	03	07	10	03		Install Accelerator Section LI21 120 1B	14-Sep-06	14-Sep-06	C	SL_MFA	Hrs	64		5,376		5,376	20%	1,075	
1	03	07	10	03		Install Accelerator Section LI21 130 1C	2-Aug-06	2-Aug-06	C	SL_MFA	Hrs	64		5,376		5,376	20%	1,075	
1	03	07	10	03		Install QA11/BPMA11	15-Sep-06	15-Sep-06	C	SL_MFA	Hrs	8		672		672	20%	134	
1	03	07	10	03		Install QA12/BPMA12	18-Sep-06	18-Sep-06	C	SL_MFA	Hrs	8		672		672	20%	134	
1	03	07	10	03		Align Structures 1B and 1Cand Quad Magnets QA11	19-Sep-06	19-Sep-06	C	SL_MES	Hrs	16		1,252		1,252	20%	250	
1	03	07	10	03		Weld Upstream BPM Eyelet between 1B and 1C	20-Sep-06	20-Sep-06	C	SL_MFA	Hrs	4		336		336	20%	67	
1	03	07	10	03		Weld Downstream BPM Eyelet between 1B and 1C	20-Sep-06	20-Sep-06	C	SL_MFA	Hrs	4		336		336	20%	67	
1	03	07	10	03		Weld Upstream BPM Eyelet between 1C and 1D	20-Sep-06	20-Sep-06	C	SL_MFA	Hrs	4		336		336	20%	67	
1	03	07	10	03		Weld Downstream BPM Eyelet between 1C and 1D	20-Sep-06	20-Sep-06	C	SL_MFA	Hrs	4		336		336	20%	67	
1	03	07	10	03		Weld Adapter Eyelet to 2 3/4 CFF to downstream e	20-Sep-06	20-Sep-06	C	SL_MFA	Hrs	4		336		336	20%	67	
1	03	07	10	03		Install Input Waveguide to Structure 120 1B	21-Sep-06	21-Sep-06	C	SL_MFA	Hrs	48		4,032		4,032	20%	806	
1	03	07	10	03		Weld Wavguide to Manifold Eyelet	22-Sep-06	22-Sep-06	C	SL_MFA	Hrs	4		336		336	20%	67	
1	03	07	10	03		Install Output Load to 120 1B	22-Sep-06	22-Sep-06	C	SL_MFA	Hrs	16		1,344		1,344	20%	269	
1	03	07	10	03		Install Input Waveguide to Structure 130 1C	22-Sep-06	22-Sep-06	C	SL_MFA	Hrs	48		4,032		4,032	20%	806	
1	03	07	10	03		Install Output Loads to 130 1C	22-Sep-06	22-Sep-06	C	SL_MFA	Hrs	16		1,344		1,344	20%	269	
1	03	07	10	03		Install XY Correctors on Structures 1B, 1C and 1	20-Sep-06	20-Sep-06	C	SL_MFA	Hrs	16		1,344		1,344	20%	269	
1	03	07	10	03		Install X Band Support	2-Aug-06	3-Aug-06	C	SL_MSP	\$\$		5,920		5,920		5,920	20%	1,184
1	03	07	10	03		Install X Band Structure	14-Sep-06	14-Sep-06	C	SL_MFA	Hrs	24		2,016		2,016	20%	403	
1	03	07	10	03		Align X Band Structure	15-Sep-06	15-Sep-06	C	SL_MES	Hrs	16		1,252		1,252	20%	250	
1	03	07	10	03		Install Upstream Slowvalve	18-Sep-06	18-Sep-06	C	SL_MFA	Hrs	8		672		672	20%	134	
1	03	07	10	03		Install Downstram Slowvalve	19-Sep-06	19-Sep-06	C	SL_MFA	Hrs	8		672		672	20%	134	
1	03	07	10	03		Install X Band Waveguide	20-Sep-06	25-Sep-06	C	SL_MFA	Hrs	120		10,080		10,080	20%	2,016	
1	03	07	10	03		Pumpdown and Leakcheck	26-Sep-06	27-Sep-06	C	SL_MFA	Hrs	64		5,376		5,376	20%	1,075	
1	03	07	10	03		Install X Band LLRF	28-Sep-06	29-Sep-06	C	SL_KT1	Hrs	32		1,930		1,930	20%	386	
1	03	07	10	03		Install X Band Water	2-Oct-06	2-Oct-06	C	SL_MSP	\$\$		2,140		2,140		2,140	20%	428
1	03	07	10	03		Install BC1 Chicane Supports	30-Aug-06	5-Sep-06	C	SL_MSP	\$\$		9,700		9,700		9,700	20%	1,940
1	03	07	10	03		Install BC1 Input Supports	6-Sep-06	7-Sep-06	C	SL_MSP	\$\$		2,780		2,780		2,780	20%	556
1	03	07	10	03		Install BC1 Output Supports	8-Sep-06	8-Sep-06	C	SL_MSP	\$\$		2,780		2,780		2,780	20%	556
1	03	07	10	03		Align BC1 Supports	11-Sep-06	11-Sep-06	C	SL_MES	Hrs	16		1,252		1,252	20%	250	
1	03	07	10	03		Grout Supports	12-Sep-06	13-Sep-06	C	SL_MSP	\$\$		3,780		3,780		3,780	20%	756
1	03	07	10	03		Install BX11 and CQ11	14-Sep-06	14-Sep-06	C	SL_MFA	Hrs	24		2,016		2,016	20%	403	
1	03	07	10	03		Install BC1 Table Middle Vacuum Assy	16-Oct-06	17-Oct-06	C	SL_MFA	Hrs	48		4,137		4,137	20%	827	
1	03	07	10	03		Install BC1 Table Downstream Vacuum Assy	18-Oct-06	19-Oct-06	C	SL_MFA	Hrs	48		4,137		4,137	20%	827	
1	03	07	10	03		Install BC1 Table Upstream Vacuum Assy	20-Oct-06	23-Oct-06	C	SL_MFA	Hrs	48		4,137		4,137	20%	827	
1	03	07	10	03		Install BC1 CQ12 and BX14	24-Oct-06	25-Oct-06	C	SL_MFA	Hrs	48		4,137		4,137	20%	827	
1	03	07	10	03		Align BC1 Chicane Area	26-Oct-06	27-Oct-06	C	SL_MES	Hrs	32		2,569		2,569	20%	514	
1	03	07	10	03		Install Quad Magnet QM12	30-Oct-06	30-Oct-06	C	SL_MFA	Hrs	16		1,379		1,379	20%	276	
1	03	07	10	03		Install Corrector YCM12	31-Oct-06	31-Oct-06	C	SL_MFA	Hrs	16		1,379		1,379	20%	276	
1	03	07	10	03		Install B11	1-Nov-06	2-Nov-06	C	SL_MFA	Hrs	64		5,516		5,516	20%	1,103	
1	03	07	10	03		Install BPMM12	3-Nov-06	3-Nov-06	C	SL_MFA	Hrs	16		1,379		1,379	20%	276	
1	03	07	10	03		Install Quad Magnet QM13	6-Nov-06	6-Nov-06	C	SL_MFA	Hrs	24		2,068		2,068	20%	414	
1	03	07	10	03		Install Corrector XCM13	7-Nov-06	8-Nov-06	C	SL_MFA	Hrs	48		4,137		4,137	20%	827	
1	03	07	10	03		Install IMBC10	9-Nov-06	9-Nov-06	C	SL_MFA	Hrs	16		1,379		1,379	20%	276	
1	03	07	10	03		Install Wire Scanner WS11	10-Nov-06	10-Nov-06	C	SL_MFA	Hrs	16		1,379		1,379	20%	276	
1	03	07	10	03		Install wire scanner lead stand and lead	13-Nov-06	17-Nov-06	C	SL_MFA	Hrs	80		6,895		6,895	20%	1,379	
1	03	07	10	03		Install Current Monitor OTR12	13-Nov-06	13-Nov-06	C	SL_MFA	Hrs	16		1,379		1,379	20%	276	
1	03	07	10	03		Install Wire Scanner WS12	14-Nov-06	14-Nov-06	C	SL_MFA	Hrs	16		1,379		1,379	20%	276	
1	03	07	10	03		Install wire scanner lead stand and lead	15-Nov-06	20-Nov-06	C	SL_MFA	Hrs	80		6,895		6,895	20%	1,379	
1	03	07	10	03		Install Wire Scanner WS13	21-Nov-06	21-Nov-06	C	SL_MFA	Hrs	16		1,379		1,379	20%	276	
1	03	07	10	03		Install wire scanner lead stand and lead	22-Nov-06	30-Nov-06	C	SL_MFA	Hrs	80		6,895		6,895	20%	1,379	
1	03	07	10	03		Install Corrector XC21301	1-Dec-06	1-Dec-06	C	SL_MFA	Hrs	8		689		689	20%	138	
1	03	07	10	03		Install BPM21301	4-Dec-06	4-Dec-06	C	SL_MFA	Hrs	8		689		689	20%	138	

Detailed Cost Estimate
LINAC SYSTEM

WBS Level						LCLA DCE Aug-2006 Description	Early Start	Early Finish	Fund Type	Res Code	Units	Work Rem. Bud. Qty		Work Rem. Full Burd and Escltd Cost			Contngcy %	Contingency \$	
1	2	3	4	5	6							Hours	\$	Labor	M&S	Total			
1	03	07	10	03		Install Quad Magnet Q21301	5-Dec-06	5-Dec-06	C	SL_MFA	Hrs	16		1,379		1,379	20%	276	
1	03	07	10	03		Install PRD11/TD11	6-Dec-06	7-Dec-06	C	SL_MFA	Hrs	96		8,274		8,274	20%	1,655	
1	03	07	10	03		Install lead stand and lead	8-Dec-06	14-Dec-06	C	SL_MFA	Hrs	80		6,895		6,895	20%	1,379	
1	03	07	10	03		Install Corrector XCM14	6-Dec-06	6-Dec-06	C	SL_MFA	Hrs	16		1,379		1,379	20%	276	
1	03	07	10	03		Install Quad Magnet QM14/BPM14	7-Dec-06	7-Dec-06	C	SL_MFA	Hrs	16		1,379		1,379	20%	276	
1	03	07	10	03		Install Quad Magnet QM15	8-Dec-06	8-Dec-06	C	SL_MFA	Hrs	24		2,068		2,068	20%	414	
1	03	07	10	03		Align BC1 Output Components	11-Dec-06	15-Dec-06	C	SL_MES	Hrs	120		9,635		9,635	20%	1,927	
1	03	07	10	03		Install Beamline Drifts and Tighten all Flanges	18-Dec-06	21-Dec-06	C	SL_MFA	Hrs	128		11,032		11,032	20%	2,206	
1	03	07	10	03		Pumpdown and Leack Check Sector 20 and 21	22-Dec-06	27-Dec-06	C	SL_MFA	Hrs	200		17,237		17,237	20%	3,447	
1	03	07	10	03		Reconfigure SLC quadrupole to LCLS	2-Aug-06	3-Aug-06	C	SL_CE1	Hrs	48		5,288		5,288	20%	1,058	
1	03	07	10	03		Install plumbing to all devices	18-Dec-06	28-Dec-06	C	SL_MSP	\$\$		21,400		21,400		21,400	20%	4,280
1	03	07	10	04		2006 Linac Controls Install and Checkout Gallery to Linac B						-	107,640	-	107,640		107,640		21,528
1	03	07	10	04		DC Cable Installation	1-Aug-06	11-Aug-06	C	SL_MSP	\$\$		20,760		20,760		20,760	20%	4,152
1	03	07	10	04		I&C Cable Installation	14-Aug-06	24-Aug-06	C	SL_MSP	\$\$		20,760		20,760		20,760	20%	4,152
1	03	07	10	04		Cable Termination	25-Aug-06	20-Sep-06	C	SL_MSP	\$\$		27,800		27,800		27,800	20%	5,560
1	03	07	10	04		Cable Tagging & Testing	21-Sep-06	25-Sep-06	C	SL_MSP	\$\$		16,920		16,920		16,920	20%	3,384
1	03	07	10	04		Cable Connections to Devices & Loads	28-Sep-06	11-Oct-06	C	SL_MSP	\$\$		21,400		21,400		21,400	20%	4,280
1	03	07	10	05		2006 Linac Controls Install and Checkout L01 to BC1						-	54,100	-	54,100		54,100		10,820
1	03	07	10	05		DC Cable Installation	1-Aug-06	11-Aug-06	C	SL_MSP	\$\$		10,350		10,350		10,350	20%	2,070
1	03	07	10	05		I&C Cable Installation	14-Aug-06	24-Aug-06	C	SL_MSP	\$\$		10,350		10,350		10,350	20%	2,070
1	03	07	10	05		Cable Termination	25-Aug-06	20-Sep-06	C	SL_MSP	\$\$		13,900		13,900		13,900	20%	2,780
1	03	07	10	05		Cable Tagging & Testing	21-Sep-06	25-Sep-06	C	SL_MSP	\$\$		8,500		8,500		8,500	20%	1,700
1	03	07	10	05		Cable Connections to Devices & Loads	26-Sep-06	9-Oct-06	C	SL_MSP	\$\$		11,000		11,000		11,000	20%	2,200
1	03	07	20			LINAC Installation 2007 Shut Down						8,692	180,390	800,237	180,390	980,627		294,188	
1	03	07	20	01		Beamline Equip Removal L02, L03 and BC2						2,908	-	274,214	-	274,214		82,264	
1	03	07	20	01		Linac Integration Oversight 2007 Shut Down	4-Sep-07	28-Nov-07	C	SL_ME1	Hrs	1,360		138,233		138,233	30%	41,470	
1	03	07	20	01		Planning, preperation and staging prior to downt	4-Sep-07	28-Sep-07	C	SL_MFA	Hrs	320		27,579		27,579	30%	8,274	
1	03	07	20	01		Vent Sector 20	1-Oct-07	1-Oct-07	C	SL_MFA	Hrs	32		2,830		2,830	30%	849	
1	03	07	20	01		Vent sector 21	2-Oct-07	2-Oct-07	C	SL_MFA	Hrs	32		2,830		2,830	30%	849	
1	03	07	20	01		Drain Water	3-Oct-07	4-Oct-07	C	SL_TMU	Hrs	32		2,605		2,605	30%	782	
1	03	07	20	01		Disconnect Water from Structures and Loads	5-Oct-07	8-Oct-07	C	SL_MFA	Hrs	32		2,830		2,830	30%	849	
1	03	07	20	01		Remove Magnet Power Leads	9-Oct-07	9-Oct-07	C	SL_MFA	Hrs	48		4,244		4,244	30%	1,273	
1	03	07	20	01		Remove Klixon Leads	10-Oct-07	10-Oct-07	C	SL_MFA	Hrs	4		354		354	30%	106	
1	03	07	20	01		Remove LLRF	11-Oct-07	11-Oct-07	C	SL_KT1	Hrs	16		1,016		1,016	30%	305	
1	03	07	20	01		Remove Waveguide and Loads from Structure	12-Oct-07	17-Oct-07	C	SL_MFA	Hrs	64		5,659		5,659	30%	1,698	
1	03	07	20	01		Remove fast valve between sector 20 and 21	18-Oct-07	18-Oct-07	C	SL_MFA	Hrs	8		707		707	30%	212	
1	03	07	20	01		Grind upstream and downstream eyelets	19-Oct-07	19-Oct-07	C	SL_MFA	Hrs	16		1,415		1,415	30%	424	
1	03	07	20	01		Remove Accelerator Section LI21 120 1B	22-Oct-07	22-Oct-07	C	SL_MFA	Hrs	32		2,830		2,830	30%	849	
1	03	07	20	01		Remove Waveguide and Loads from Structure	12-Oct-07	17-Oct-07	C	SL_MFA	Hrs	64		5,659		5,659	30%	1,698	
1	03	07	20	01		Grind upstream and downstream eyelets	18-Oct-07	18-Oct-07	C	SL_MFA	Hrs	16		1,415		1,415	30%	424	
1	03	07	20	01		Remove Accelerator Section LI21 130 1C	19-Oct-07	19-Oct-07	C	SL_MFA	Hrs	32		2,830		2,830	30%	849	
1	03	07	20	01		Remove BPM Cables from BPM 201 and BPM 301	2-Oct-07	3-Oct-07	C	SL_CE1	Hrs	16		1,856		1,856	30%	557	
1	03	07	20	01		Remove Quad LI21 20 QEF 201	22-Oct-07	22-Oct-07	C	SL_MFA	Hrs	16		1,415		1,415	30%	424	
1	03	07	20	01		Remove Waveguide and Loads from Structure	12-Oct-07	17-Oct-07	C	SL_MFA	Hrs	64		5,659		5,659	30%	1,698	
1	03	07	20	01		Grind upstream and downstream eyelets	18-Oct-07	18-Oct-07	C	SL_MFA	Hrs	16		1,415		1,415	30%	424	
1	03	07	20	01		Remove Accelerator Section LI21 210 2A	19-Oct-07	19-Oct-07	C	SL_MFA	Hrs	32		2,830		2,830	30%	849	
1	03	07	20	01		Remove Waveguide and Loads from Structure	12-Oct-07	17-Oct-07	C	SL_MFA	Hrs	64		5,659		5,659	30%	1,698	
1	03	07	20	01		Grind upstream and downstream eyelets	18-Oct-07	18-Oct-07	C	SL_MFA	Hrs	16		1,415		1,415	30%	424	
1	03	07	20	01		Remove Accelerator Section LI21 220 2B	19-Oct-07	19-Oct-07	C	SL_MFA	Hrs	64		5,659		5,659	30%	1,698	
1	03	07	20	01		Remove Waveguide and Loads from Structure	12-Oct-07	17-Oct-07	C	SL_MFA	Hrs	64		5,659		5,659	30%	1,698	
1	03	07	20	01		Grind upstream and downstream eyelets	18-Oct-07	18-Oct-07	C	SL_MFA	Hrs	16		1,415		1,415	30%	424	
1	03	07	20	01		Remove Accelerator Section LI21 230 2C	19-Oct-07	19-Oct-07	C	SL_MFA	Hrs	64		5,659		5,659	30%	1,698	

Detailed Cost Estimate
LINAC SYSTEM

WBS Level						LCLA DCE Aug-2006 Description	Early Start	Early Finish	Fund Type	Res Code	Units	Work Rem. Bud. Qty		Work Rem. Full Burd and Escltd Cost			Contngcy %	Contingency \$	
1	2	3	4	5	6							Hours	\$	Labor	M&S	Total			
1	03	07	20	01		Remove Waveguide and Loads from Structure	12-Oct-07	17-Oct-07	C	SL_MFA	Hrs	64		5,659		5,659	30%	1,698	
1	03	07	20	01		Grind upstream and downstream eyelets	18-Oct-07	18-Oct-07	C	SL_MFA	Hrs	16		1,415		1,415	30%	424	
1	03	07	20	01		Remove Accelerator Section LI21 240 2D	19-Oct-07	19-Oct-07	C	SL_MFA	Hrs	64		5,659		5,659	30%	1,698	
1	03	07	20	01		Remove Waveguide and Loads from Structure	12-Oct-07	17-Oct-07	C	SL_MFA	Hrs	64		5,659		5,659	30%	1,698	
1	03	07	20	01		Remove vacuum header for BC1 chican table	18-Oct-07	22-Oct-07	C	SL_MFA	Hrs	48		4,244		4,244	30%	1,273	
1	03	07	20	01		Grind upstream and downstream eyelets	23-Oct-07	23-Oct-07	C	SL_MFA	Hrs	16		1,415		1,415	30%	424	
1	03	07	20	01		Remove Quad LI21 30 QED 301	24-Oct-07	24-Oct-07	C	SL_MFA	Hrs	16		1,415		1,415	30%	424	
1	03	07	20	01		Remove Accelerator Section LI21 310 3A	25-Oct-07	25-Oct-07	C	SL_MFA	Hrs	64		5,659		5,659	30%	1,698	
1	03	07	20	01		Secure Vacuum System	26-Oct-07	26-Oct-07	C	SL_MFA	Hrs	16		1,415		1,415	30%	424	
1	03	07	20	02		Beamline Equip Installation L02, L03 and BC2						3,660	72,750	320,057	72,750	392,807		117,842	
1	03	07	20	02		Planning, preperation and staging prior to downt	8-Jan-07	2-Feb-07	C	SL_MFA	Hrs	480		41,368		41,368	30%	12,410	
1	03	07	20	02		Install Accelerator Section LI21 120 1B	23-Oct-07	24-Oct-07	C	SL_MFA	Hrs	96		8,489		8,489	30%	2,547	
1	03	07	20	02		Install Accelerator Section LI21 130 1C	25-Oct-07	26-Oct-07	C	SL_MFA	Hrs	96		8,489		8,489	30%	2,547	
1	03	07	20	02		Install QA11/BPMA11	29-Oct-07	29-Oct-07	C	SL_MFA	Hrs	12		1,061		1,061	30%	318	
1	03	07	20	02		Install QA12/BPMA12	30-Oct-07	30-Oct-07	C	SL_MFA	Hrs	12		1,061		1,061	30%	318	
1	03	07	20	02		Align Structures 1B and 1Cand Quad Magnets QA11	31-Oct-07	31-Oct-07	C	SL_MES	Hrs	24		1,977		1,977	30%	593	
1	03	07	20	02		Weld Upstream BPM Eyelet between 1B and 1C	1-Nov-07	1-Nov-07	C	SL_MFA	Hrs	6		531		531	30%	159	
1	03	07	20	02		Weld Downstream BPM Eyelet between 1B and 1C	1-Nov-07	1-Nov-07	C	SL_MFA	Hrs	6		531		531	30%	159	
1	03	07	20	02		Weld Upstream BPM Eyelet between 1C and 1D	1-Nov-07	1-Nov-07	C	SL_MFA	Hrs	6		531		531	30%	159	
1	03	07	20	02		Weld Downstream BPM Eyelet between 1C and 1D	1-Nov-07	1-Nov-07	C	SL_MFA	Hrs	6		531		531	30%	159	
1	03	07	20	02		Weld Adapter Eyelet to 2 3/4 CFF to downstream e	1-Nov-07	1-Nov-07	C	SL_MFA	Hrs	6		531		531	30%	159	
1	03	07	20	02		Install Input Waveguide to Structure 120 1B	2-Nov-07	2-Nov-07	C	SL_MFA	Hrs	24		2,122		2,122	30%	637	
1	03	07	20	02		Weld Wavguide to Manifold Eyelet	5-Nov-07	5-Nov-07	C	SL_MFA	Hrs	6		531		531	30%	159	
1	03	07	20	02		Install Output Load to 120 1B	5-Nov-07	5-Nov-07	C	SL_MFA	Hrs	24		2,122		2,122	30%	637	
1	03	07	20	02		Install Input Waveguide to Structure 130 1C	5-Nov-07	6-Nov-07	C	SL_MFA	Hrs	72		6,367		6,367	30%	1,910	
1	03	07	20	02		Install Output Loads to 130 1C	5-Nov-07	5-Nov-07	C	SL_MFA	Hrs	24		2,122		2,122	30%	637	
1	03	07	20	02		Install XY Correctors on Structures 1B, 1C and 1	1-Nov-07	1-Nov-07	C	SL_MFA	Hrs	24		2,122		2,122	30%	637	
1	03	07	20	02		Install X Band Support	4-Sep-07	6-Sep-07	C	SL_MSP	\$\$		8,880		8,880		8,880	30%	2,664
1	03	07	20	02		Install X Band Structure	19-Sep-07	19-Sep-07	C	SL_MFA	Hrs	36		3,103		3,103	30%	931	
1	03	07	20	02		Align X Band Structure	20-Sep-07	20-Sep-07	C	SL_MES	Hrs	24		1,927		1,927	30%	578	
1	03	07	20	02		Install Upstream Slowvalve	21-Sep-07	21-Sep-07	C	SL_MFA	Hrs	12		1,034		1,034	30%	310	
1	03	07	20	02		Install Downstram Slowvalve	24-Sep-07	24-Sep-07	C	SL_MFA	Hrs	12		1,034		1,034	30%	310	
1	03	07	20	02		Install X Band Waveguide	25-Sep-07	1-Oct-07	C	SL_MFA	Hrs	180		15,513		15,513	30%	4,654	
1	03	07	20	02		Pumpdown and Leakcheck	2-Oct-07	3-Oct-07	C	SL_MFA	Hrs	96		8,489		8,489	30%	2,547	
1	03	07	20	02		Install X Band LLRF	4-Oct-07	5-Oct-07	C	SL_KT1	Hrs	48		3,048		3,048	30%	914	
1	03	07	20	02		Install X Band Water	8-Oct-07	8-Oct-07	C	SL_MSP	\$\$		3,210		3,210		3,210	30%	963
1	03	07	20	02		Mark BC1 stand location	4-Sep-07	4-Sep-07	C	SL_MES	Hrs	24		1,927		1,927	30%	578	
1	03	07	20	02		Install BC1 Chicane Supports	5-Sep-07	10-Sep-07	C	SL_MSP	\$\$		14,550		14,550		14,550	30%	4,365
1	03	07	20	02		Install BC1 Input Supports	11-Sep-07	12-Sep-07	C	SL_MSP	\$\$		4,170		4,170		4,170	30%	1,251
1	03	07	20	02		Install BC1 Output Supports	13-Sep-07	13-Sep-07	C	SL_MSP	\$\$		4,170		4,170		4,170	30%	1,251
1	03	07	20	02		Align BC1 Supports	14-Sep-07	14-Sep-07	C	SL_MES	Hrs	24		1,927		1,927	30%	578	
1	03	07	20	02		Grout Supports	17-Sep-07	18-Sep-07	C	SL_MSP	\$\$		5,670		5,670		5,670	30%	1,701
1	03	07	20	02		Install BX11 and CQ11	19-Sep-07	19-Sep-07	C	SL_MFA	Hrs	36		3,103		3,103	30%	931	
1	03	07	20	02		Install BC1 Table Middle Vacuum Assy	20-Sep-07	21-Sep-07	C	SL_MFA	Hrs	72		6,205		6,205	30%	1,862	
1	03	07	20	02		Install BC1 Table Downstream Vacuum Assy	24-Sep-07	25-Sep-07	C	SL_MFA	Hrs	72		6,205		6,205	30%	1,862	
1	03	07	20	02		Install BC1 Table Upstream Vacuum Assy	26-Sep-07	27-Sep-07	C	SL_MFA	Hrs	72		6,205		6,205	30%	1,862	
1	03	07	20	02		Install BC1 CQ12 and BX14	28-Sep-07	1-Oct-07	C	SL_MFA	Hrs	72		6,205		6,205	30%	1,862	
1	03	07	20	02		Align BC1 Chicane Area	2-Oct-07	3-Oct-07	C	SL_MES	Hrs	48		3,954		3,954	30%	1,186	
1	03	07	20	02		Install Quad Magnet QM12	4-Oct-07	4-Oct-07	C	SL_MFA	Hrs	24		2,122		2,122	30%	637	
1	03	07	20	02		Install Corrector YCM12	5-Oct-07	5-Oct-07	C	SL_MFA	Hrs	24		2,122		2,122	30%	637	
1	03	07	20	02		Install B11	8-Oct-07	9-Oct-07	C	SL_MFA	Hrs	96		8,489		8,489	30%	2,547	
1	03	07	20	02		Install BPMM12	10-Oct-07	10-Oct-07	C	SL_MFA	Hrs	24		2,122		2,122	30%	637	

Detailed Cost Estimate
LINAC SYSTEM

WBS Level						LCLA DCE Aug-2006 Description	Early Start	Early Finish	Fund Type	Res Code	Units	Work Rem. Bud. Qty		Work Rem. Full Burd and Escltd Cost			Contngcy %	Contingency \$	
1	2	3	4	5	6							Hours	\$	Labor	M&S	Total			
1	03	07	20	02		Install Quad Magnet QM13	11-Oct-07	11-Oct-07	C	SL_MFA	Hrs	36		3,183		3,183	30%	955	
1	03	07	20	02		Install Corrector XCM13	12-Oct-07	15-Oct-07	C	SL_MFA	Hrs	72		6,367		6,367	30%	1,910	
1	03	07	20	02		Install IMBC10	16-Oct-07	16-Oct-07	C	SL_MFA	Hrs	24		2,122		2,122	30%	637	
1	03	07	20	02		Install Wire Scanner WS11	17-Oct-07	17-Oct-07	C	SL_MFA	Hrs	24		2,122		2,122	30%	637	
1	03	07	20	02		Install wire scanner lead stand and lead	18-Oct-07	24-Oct-07	C	SL_MFA	Hrs	120		10,611		10,611	30%	3,183	
1	03	07	20	02		Install Current Monitor OTR12	18-Oct-07	18-Oct-07	C	SL_MFA	Hrs	24		2,122		2,122	30%	637	
1	03	07	20	02		Install Wire Scanner WS12	19-Oct-07	19-Oct-07	C	SL_MFA	Hrs	24		2,122		2,122	30%	637	
1	03	07	20	02		Install wire scanner lead stand and lead	22-Oct-07	26-Oct-07	C	SL_MFA	Hrs	120		10,611		10,611	30%	3,183	
1	03	07	20	02		Install Wire Scanner WS13	29-Oct-07	29-Oct-07	C	SL_MFA	Hrs	24		2,122		2,122	30%	637	
1	03	07	20	02		Install wire scanner lead stand and lead	30-Oct-07	5-Nov-07	C	SL_MFA	Hrs	120		10,611		10,611	30%	3,183	
1	03	07	20	02		Install Corrector XC21301	6-Nov-07	6-Nov-07	C	SL_MFA	Hrs	12		1,061		1,061	30%	318	
1	03	07	20	02		Install BPM21301	7-Nov-07	7-Nov-07	C	SL_MFA	Hrs	12		1,061		1,061	30%	318	
1	03	07	20	02		Install Quad Magnet Q21301	8-Nov-07	8-Nov-07	C	SL_MFA	Hrs	24		2,122		2,122	30%	637	
1	03	07	20	02		Install PRD11/TD11	9-Nov-07	13-Nov-07	C	SL_MFA	Hrs	144		12,733		12,733	30%	3,820	
1	03	07	20	02		Install lead stand and lead	14-Nov-07	20-Nov-07	C	SL_MFA	Hrs	120		10,611		10,611	30%	3,183	
1	03	07	20	02		Install Corrector XCM14	9-Nov-07	9-Nov-07	C	SL_MFA	Hrs	24		2,122		2,122	30%	637	
1	03	07	20	02		Install Quad Magnet QM14/BPM14	12-Nov-07	12-Nov-07	C	SL_MFA	Hrs	24		2,122		2,122	30%	637	
1	03	07	20	02		Install Quad Magnet QM15	13-Nov-07	13-Nov-07	C	SL_MFA	Hrs	36		3,183		3,183	30%	955	
1	03	07	20	02		Align BC1 Output Components	14-Nov-07	16-Nov-07	C	SL_MES	Hrs	180		14,828		14,828	30%	4,449	
1	03	07	20	02		Install Beamline Drifts and Tighten all Flanges	19-Nov-07	26-Nov-07	C	SL_MFA	Hrs	192		16,978		16,978	30%	5,093	
1	03	07	20	02		Pumpdown and Leack Check Sector 20 and 21	27-Nov-07	29-Nov-07	C	SL_MFA	Hrs	300		26,527		26,527	30%	7,958	
1	03	07	20	02		BC1, S20/S21 Install power supply	4-Sep-07	4-Sep-07	C	SL_CE1	Hrs	12		1,356		1,356	30%	407	
1	03	07	20	02		Reconfigure SLC quadrupole to LCLS	4-Sep-07	6-Sep-07	C	SL_CE1	Hrs	72		8,138		8,138	30%	2,441	
1	03	07	20	02		Install plumbing to all devices	19-Nov-07	27-Nov-07	C	SL_MSP	\$\$		32,100		32,100		32,100	30%	9,630
1	03	07	20	03		2007 Linac Controls Install and Checkout						-	107,640	-	107,640	107,640		32,292	
1	03	07	20	03		DC Cable Installation	4-Sep-07	14-Sep-07	C	SL_MSP	\$\$		20,760		20,760		20,760	30%	6,228
1	03	07	20	03		I&C Cable Installation	17-Sep-07	27-Sep-07	C	SL_MSP	\$\$		20,760		20,760		20,760	30%	6,228
1	03	07	20	03		Cable Termination	28-Sep-07	23-Oct-07	C	SL_MSP	\$\$		27,800		27,800		27,800	30%	8,340
1	03	07	20	03		Cable Tagging & Testing	24-Oct-07	26-Oct-07	C	SL_MSP	\$\$		16,920		16,920		16,920	30%	5,076
1	03	07	20	03		Cable Connections to Devices & Loads	29-Oct-07	9-Nov-07	C	SL_MSP	\$\$		21,400		21,400		21,400	30%	6,420
1	03	07	20	04		Linac Undulator Interface						2,124	-	205,966	-	205,966		61,790	
1	03	07	20	04		Exit Section Supts Transport & Install	26-Nov-07	27-Nov-07	C	SL_TMU	Hrs	32		2,605		2,605	30%	782	
1	03	07	20	04		Exit Section Supports Transport & Install	26-Nov-07	26-Nov-07	C	SL_TMU	Hrs	16		1,303		1,303	30%	391	
1	03	07	20	04		Entrance Section Assy & Support Arrive at SLAC	28-Mar-07	10-Apr-07	C	SL_SEE	Hrs	16		1,699		1,699	30%	510	
1	03	07	20	04		Entrance Section Assy & Support Arrive at SLAC	28-Mar-07	10-Apr-07	C	SL_MVE	Hrs	16		1,699		1,699	30%	510	
1	03	07	20	04		Entrance Section Assy & Support Arrive at SLAC	28-Mar-07	10-Apr-07	C	SL_MFA	Hrs	40		3,447		3,447	30%	1,034	
1	03	07	20	04		Install Entrance Section Components	27-Nov-07	3-Dec-07	C	SL_SEE	Hrs	50		5,447		5,447	30%	1,634	
1	03	07	20	04		Install Entrance Section Components	27-Nov-07	3-Dec-07	C	SL_MFA	Hrs	80		7,074		7,074	30%	2,122	
1	03	07	20	04		Exit Section Assembly & Support Arrive at SLAC	2-Nov-07	14-Nov-07	C	SL_SEE	Hrs	16		1,743		1,743	30%	523	
1	03	07	20	04		Exit Section Assembly & Support Arrive at SLAC	2-Nov-07	14-Nov-07	C	SL_MVE	Hrs	16		1,743		1,743	30%	523	
1	03	07	20	04		Exit Section Assembly & Support Arrive at SLAC	2-Nov-07	14-Nov-07	C	SL_MFA	Hrs	40		3,537		3,537	30%	1,061	
1	03	07	20	04		Install Exit Section Components	15-Nov-07	21-Nov-07	C	SL_SEE	Hrs	50		5,447		5,447	30%	1,634	
1	03	07	20	04		Install Exit Section Components	15-Nov-07	21-Nov-07	C	SL_MFA	Hrs	80		7,074		7,074	30%	2,122	
1	03	07	20	04		EOU Arrive at SLAC	15-May-07	30-May-07	C	SL_SEE	Hrs	16		1,699		1,699	30%	510	
1	03	07	20	04		EOU Arrive at SLAC	15-May-07	30-May-07	C	SL_MFA	Hrs	16		1,379		1,379	30%	414	
1	03	07	20	04		EOU Arrive at SLAC	15-May-07	30-May-07	C	SL_ME1	Hrs	8		799		799	30%	240	
1	03	07	20	04		Pre-Align EOU at SLAC	31-May-07	28-Jun-07	C	SL_SEE	Hrs	88		9,345		9,345	30%	2,803	
1	03	07	20	04		Pre-Align EOU at SLAC	31-May-07	28-Jun-07	C	SL_MES	Hrs	120		9,635		9,635	30%	2,891	
1	03	07	20	04		Pre-Align EOU at SLAC	31-May-07	28-Jun-07	C	SL_ME1	Hrs	24		2,397		2,397	30%	719	
1	03	07	20	04		Install EOU	2-Nov-07	4-Dec-07	C	SL_SEE	Hrs	104		11,331		11,331	30%	3,399	
1	03	07	20	04		Install EOU	2-Nov-07	4-Dec-07	C	SL_PHS	Hrs	24		1,801		1,801	30%	540	
1	03	07	20	04		Install EOU	2-Nov-07	4-Dec-07	C	SL_MFA	Hrs	120		10,611		10,611	30%	3,183	

Detailed Cost Estimate
LINAC SYSTEM

WBS Level						LCLA DCE Aug-2006 Description	Early Start	Early Finish	Fund Type	Res Code	Units	Work Rem. Bud. Qty		Work Rem. Full Burd and Escltd Cost			Contngcy %	Contingency \$	
1	2	3	4	5	6							Hours	\$	Labor	M&S	Total			
1	03	07	20	04		Install EOU	2-Nov-07	4-Dec-07	C	SL_ME1	Hrs	48		4,918		4,918	30%	1,476	
1	03	07	20	04		Install EOU	2-Nov-07	4-Dec-07	C	SL_CE1	Hrs	40		4,639		4,639	30%	1,392	
1	03	07	20	04		Align EOU	5-Dec-07	11-Dec-07	C	SL_SEE1	Hrs	72		7,844		7,844	30%	2,353	
1	03	07	20	04		Align EOU	5-Dec-07	11-Dec-07	C	SL_MES	Hrs	80		6,590		6,590	30%	1,977	
1	03	07	20	04		Align EOU	5-Dec-07	11-Dec-07	C	SL_ME1	Hrs	32		3,279		3,279	30%	984	
1	03	07	20	04		Validate EOU	12-Dec-07	21-Dec-07	C	SL_SEE1	Hrs	56		6,101		6,101	30%	1,830	
1	03	07	20	04		Validate EOU	12-Dec-07	21-Dec-07	C	SL_PHS	Hrs	16		1,201		1,201	30%	360	
1	03	07	20	04		Validate EOU	12-Dec-07	21-Dec-07	C	SL_ME1	Hrs	24		2,459		2,459	30%	738	
1	03	07	20	04		Validate EOU	12-Dec-07	21-Dec-07	C	SL_CE1	Hrs	16		1,856		1,856	30%	557	
1	03	07	20	04		Integrate EOU	2-Jan-08	15-Jan-08	C	SL_SEE1	Hrs	96		10,459		10,459	30%	3,138	
1	03	07	20	04		Integrate EOU	2-Jan-08	15-Jan-08	C	SL_PHS	Hrs	16		1,201		1,201	30%	360	
1	03	07	20	04		Integrate EOU	2-Jan-08	15-Jan-08	C	SL_ME1	Hrs	24		2,459		2,459	30%	738	
1	03	07	20	04		Integrate EOU	2-Jan-08	15-Jan-08	C	SL_CT1	Hrs	120		7,619		7,619	30%	2,286	
1	03	07	20	04		Integrate EOU	2-Jan-08	15-Jan-08	C	SL_CE1	Hrs	136		15,772		15,772	30%	4,732	
1	03	07	20	04		Test EOU	16-Jan-08	29-Jan-08	C	SL_SEE1	Hrs	96		10,459		10,459	30%	3,138	
1	03	07	20	04		Test EOU	16-Jan-08	29-Jan-08	C	SL_PHS	Hrs	16		1,201		1,201	30%	360	
1	03	07	20	04		Test EOU	16-Jan-08	29-Jan-08	C	SL_ME1	Hrs	24		2,459		2,459	30%	738	
1	03	07	20	04		Test EOU	16-Jan-08	29-Jan-08	C	SL_CT1	Hrs	80		5,079		5,079	30%	1,524	
1	03	07	20	04		Test EOU	16-Jan-08	29-Jan-08	C	SL_CE1	Hrs	160		18,555		18,555	30%	5,567	
2	03					LINAC SYSTEM (OPC)						29,380	298,882	2,994,924	329,367	3,324,291		-	
2	03	01				Linac System Mgmt & Integration						8,244	50,000	854,088	56,403	910,491		-	
2	03	01	01			Linac System Mgmt & Integration						8,244	50,000	854,088	56,403	910,491		-	
2	03	01	01			Linac System Pre-Operations	9-Jun-08	30-Mar-09	X	SL_PHS	Hrs	4,158		364,529		364,529			
2	03	01	01			Linac System Pre-Operations	9-Jun-08	30-Mar-09	X	SL_ME1	Hrs	693		82,960		82,960			
2	03	01	01			Linac System Pre-Operations	9-Jun-08	30-Mar-09	X	SL_EE1	Hrs	693		77,437		77,437			
2	03	01	01			Linac System Management Effort - OPC	2-Jun-08	30-Mar-09	X	SL_TSM	Hrs	800		101,792		101,792			
2	03	01	01			Cost Account Managers - OPC	2-Jun-08	30-Mar-09	X	SL_ME1	Hrs	100		11,967		11,967			
2	03	01	01			Component Repair Coordination	2-Jun-08	30-Mar-09	X	SL_ME1	Hrs	200		23,934		23,934			
2	03	01	01			Materials & Supplies - OPC	2-Jun-08	30-Mar-09	X	SL_MSE	\$\$		50,000		56,403		56,403		
2	03	01	01			Linac System Area Management - OPC	2-Jun-08	30-Mar-09	X	SL_ME1	Hrs	800		95,735		95,735			
2	03	01	01			Linac System Safety Coordination - OPC	2-Jun-08	30-Mar-09	X	SL_ME1	Hrs	800		95,735		95,735			
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						14,738	73,110	1,515,991	79,151	1,595,143		-	
2	03	02	01			Personnel Protection System (PPS)						720	-	72,868	-	72,868		-	
2	03	02	02			Beam Containment System (BCS)						268	-	32,323	-	32,323		-	
2	03	02	03			Machine Protection System (MPS)						1,600	-	184,483	-	184,483		-	
2	03	02	04			Power Conversion						174	73,110	14,516	79,151	93,667		-	
2	03	02	04	01		Spare Power Supply (Dipole Type)						80	21,480	6,508	23,255	29,763		-	
2	03	02	04	02		Spare Power Supply (Quad Type)						82	21,480	6,683	23,255	29,938		-	
2	03	02	04	03		Spare Power Supply (Trim Type)						12	30,150	1,325	32,641	33,967		-	
2	03	02	04	04		Controls & Power Supply - Spare Misc Hdwr													
2	03	02	05			Controls - LLRF						3,280	-	329,647	-	329,647		-	
2	03	02	06			Controls - E-Beam Diagnostic						4,656	-	472,206	-	472,206		-	
2	03	02	06	01		Controls - Wire Scanners						680	-	69,646	-	69,646		-	
2	03	02	06	02		Controls - BPMs						2,880	-	291,541	-	291,541		-	
2	03	02	06	03		Controls - Toroids						120	-	12,278	-	12,278		-	
2	03	02	06	04		Controls - Stoppers Commissioning						48	-	4,911	-	4,911		-	
2	03	02	06	05		Controls - Profile Monitors						200	-	20,429	-	20,429		-	
2	03	02	06	07		Controls - BLM						80	-	8,151	-	8,151		-	
2	03	02	06	09		Controls - Single Beam Dump						48	-	4,911	-	4,911		-	

Detailed Cost Estimate
LINAC SYSTEM

WBS Level						LCLA DCE Aug-2006 Description	Early Start	Early Finish	Fund Type	Res Code	Units	Work Rem. Bud. Qty		Work Rem. Full Burd and Escltd Cost			Contngcy %	Contingency \$
1	2	3	4	5	6							Hours	\$	Labor	M&S	Total		
2	03	02	06	10		Controls - E-Beam Dump						120	-	11,853	-	11,853	-	
2	03	02	06	12		Controls - Collimators						480	-	48,485	-	48,485	-	
2	03	02	07			Controls - Laser												
2	03	02	08			Controls - Timing						1,000	-	107,807	-	107,807	-	
2	03	02	09			Controls - Vacuum						3,040	-	302,142	-	302,142	-	
2	03	02	10			Software & Controls Infrastructure												
2	03	03				Linac Magnets & Supports												
2	03	03	01			Bend Magnet (BX1_BC1)												
2	03	03	02			Bend Magnet (BX3_LTU)												
2	03	03	03			Bend Magnet (BX2_BC2)												
2	03	03	04			Bend Magnet (BY_LTU)												
2	03	03	05			Quad Magnet (Quad_LTU)												
2	03	03	07			Quad Magnet (QE)												
2	03	03	08			Corrector Magnet (Type 4)												
2	03	03	09			Bend Magnet (BYD_LTU)												
2	03	03	10			Quad Magnet (QA)												
2	03	03	11			Bend Magnet (BYPM_LTU)												
2	03	03	12			Bend Magnet (BYKIK_LTU)												
2	03	03	13			Bend Magnet (BYW_LTU)												
2	03	04				Linac Vacuum Subsystem												
2	03	04	01			Linac Vacuum Subsystem Operations Equip												
2	03	04	02			Linac Beamline Vacuum System												
2	03	04	03			BC1 Vacuum System												
2	03	04	04			BC2 Vacuum System												
2	03	04	05			Linac to Undulator (LTU) Vacuum System												
2	03	04	06			Dumpline Vacuum System												
2	03	04	07			Vacuum Undulator Interface												
2	03	04	07	01		Entrance Assembly Section												
2	03	04	07	02		Exit Assembly Section												
2	03	05				Linac Electron Diagnostics												
2	03	05	01			Wire Scanners												
2	03	05	02			Beam Position Monitors												
2	03	05	03			Toroids Beam Charge												
2	03	05	04			Stoppers Tune Up Dump												
2	03	05	05			Profile Monitors												
2	03	05	06			E/O Bunch Length Monitors												
2	03	05	07			Bunch Length Monitors												
2	03	05	08			Beam Loss Monitors												
2	03	05	09			Single Beam Dump												
2	03	05	10			Electron Safety Beam Dump												
2	03	05	11			Protection Collimators												
2	03	05	12			Movable Collimators												
2	03	05	13			Safety Dump												
2	03	05	14			Charge Monitor (Entrance/Exit Assebmly)												
2	03	06				Linac RF Subsystem												
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												
2	03	06	06			X-Band Structures												
2	03	06	07			RF Distribution System												
2	03	06	07	01		Modulator												

Detailed Cost Estimate
LINAC SYSTEM

WBS Level						LCLA DCE Aug-2006 Description	Early Start	Early Finish	Fund Type	Res Code	Units	Work Rem. Bud. Qty		Work Rem. Full Burd and Escltd Cost			Contngcy %	Contingency \$
1	2	3	4	5	6							Hours	\$	Labor	M&S	Total		
2	03	06	07	02		Solid State Sub Booster												
2	03	06	07	05		Bunch Length Electronics												
2	03	06	07	07		RF Distribution L2 & L3												
2	03	06	07	08		RF Fiber Optics Electronics												
2	03	07				Linac System Commissioning						6,398	175,772	624,844	193,813	818,657	-	
2	03	07	01			Linac L01 System Commissioning												
2	03	07	02			Linac BC1 System Commissioning												
2	03	07	03			Linac L02 System Commissioning												
2	03	07	04			Linac BC2 System Commissioning												
2	03	07	05			Linac L03 System Commissioning												
2	03	07	06			Linac LTU System Commissioning												
2	03	07	07			Linac E-Dump System Commissioning												
2	03	07	08			Linac Undulator Interface												
2	03	07	10			Linac System Commissioning						6,398	175,772	624,844	193,813	818,657	-	
2	03	07	10			Linac Commissioning (L1,BC1)	2-Jan-07	30-Aug-07	X	SL_TSM	Hrs	149		18,195		18,195		
2	03	07	10			Linac Commissioning (L1,BC1)	2-Jan-07	30-Aug-07	X	SL_PHS	Hrs	336		28,261		28,261		
2	03	07	10			Linac Commissioning (L1,BC1)	2-Jan-07	30-Aug-07	X	SL_PHPI	Hrs	348		28,142		28,142		
2	03	07	10			Linac Commissioning (L1,BC1)	2-Jan-07	30-Aug-07	X	SL_PCT1	Hrs	30		2,135		2,135		
2	03	07	10			Linac Commissioning (L1,BC1)	2-Jan-07	30-Aug-07	X	SL_PCE1	Hrs	45		5,849		5,849		
2	03	07	10			Linac Commissioning (L1,BC1)	2-Jan-07	30-Aug-07	X	SL_PCC1	Hrs	45		3,407		3,407		
2	03	07	10			Linac Commissioning (L1,BC1)	2-Jan-07	30-Aug-07	X	SL_MVE	Hrs	24		2,931		2,931		
2	03	07	10			Linac Commissioning (L1,BC1)	2-Jan-07	30-Aug-07	X	SL_MSE1	\$\$		49,123		53,182	53,182		
2	03	07	10			Linac Commissioning (L1,BC1)	2-Jan-07	30-Aug-07	X	SL_MSC	\$\$		1,728		1,871	1,871		
2	03	07	10			Linac Commissioning (L1,BC1)	2-Jan-07	30-Aug-07	X	SL_MFA	Hrs	48		4,757		4,757		
2	03	07	10			Linac Commissioning (L1,BC1)	2-Jan-07	30-Aug-07	X	SL_MES	Hrs	48		4,432		4,432		
2	03	07	10			Linac Commissioning (L1,BC1)	2-Jan-07	30-Aug-07	X	SL_ME1	Hrs	314		36,063		36,063		
2	03	07	10			Linac Commissioning (L1,BC1)	2-Jan-07	30-Aug-07	X	SL_MDD	Hrs	77		7,415		7,415		
2	03	07	10			Linac Commissioning (L1,BC1)	2-Jan-07	30-Aug-07	X	SL_KT1	Hrs	72		5,124		5,124		
2	03	07	10			Linac Commissioning (L1,BC1)	2-Jan-07	30-Aug-07	X	SL_KE1	Hrs	72		9,359		9,359		
2	03	07	10			Linac Commissioning (L1,BC1)	2-Jan-07	30-Aug-07	X	SL_KCA	Hrs	36		2,725		2,725		
2	03	07	10			Linac Commissioning (L1,BC1)	2-Jan-07	30-Aug-07	X	SL_CT1	Hrs	6		427		427		
2	03	07	10			Linac Commissioning (L1,BC1)	2-Jan-07	30-Aug-07	X	SL_CE1	Hrs	60		7,799		7,799		
2	03	07	10			Linac Commissioning (L1,BC1)	2-Jan-07	30-Aug-07	X	SL_CCA	Hrs	114		8,630		8,630		
2	03	07	10			Linac Commissioning (L2,BC2,L3)	3-Dec-07	1-Feb-08	X	SL_TSM	Hrs	249		31,198		31,198		
2	03	07	10			Linac Commissioning (L2,BC2,L3)	3-Dec-07	1-Feb-08	X	SL_PHS	Hrs	504		43,493		43,493		
2	03	07	10			Linac Commissioning (L2,BC2,L3)	3-Dec-07	1-Feb-08	X	SL_PHPI	Hrs	516		42,812		42,812		
2	03	07	10			Linac Commissioning (L2,BC2,L3)	3-Dec-07	1-Feb-08	X	SL_PCT1	Hrs	45		3,286		3,286		
2	03	07	10			Linac Commissioning (L2,BC2,L3)	3-Dec-07	1-Feb-08	X	SL_PCE1	Hrs	90		12,003		12,003		
2	03	07	10			Linac Commissioning (L2,BC2,L3)	3-Dec-07	1-Feb-08	X	SL_PCC1	Hrs	45		3,495		3,495		
2	03	07	10			Linac Commissioning (L2,BC2,L3)	3-Dec-07	1-Feb-08	X	SL_MVE	Hrs	72		9,021		9,021		
2	03	07	10			Linac Commissioning (L2,BC2,L3)	3-Dec-07	1-Feb-08	X	SL_MSE1	\$\$		69,502		77,202	77,202		
2	03	07	10			Linac Commissioning (L2,BC2,L3)	3-Dec-07	1-Feb-08	X	SL_MSC	\$\$		2,881		3,200	3,200		
2	03	07	10			Linac Commissioning (L2,BC2,L3)	3-Dec-07	1-Feb-08	X	SL_MFA	Hrs	36		3,661		3,661		
2	03	07	10			Linac Commissioning (L2,BC2,L3)	3-Dec-07	1-Feb-08	X	SL_MES	Hrs	72		6,821		6,821		
2	03	07	10			Linac Commissioning (L2,BC2,L3)	3-Dec-07	1-Feb-08	X	SL_ME1	Hrs	524		61,746		61,746		
2	03	07	10			Linac Commissioning (L2,BC2,L3)	3-Dec-07	1-Feb-08	X	SL_MDD	Hrs	129		12,745		12,745		
2	03	07	10			Linac Commissioning (L2,BC2,L3)	3-Dec-07	1-Feb-08	X	SL_KT1	Hrs	18		1,314		1,314		
2	03	07	10			Linac Commissioning (L2,BC2,L3)	3-Dec-07	1-Feb-08	X	SL_KE1	Hrs	24		3,201		3,201		
2	03	07	10			Linac Commissioning (L2,BC2,L3)	3-Dec-07	1-Feb-08	X	SL_KCA	Hrs	18		1,398		1,398		
2	03	07	10			Linac Commissioning (L2,BC2,L3)	3-Dec-07	1-Feb-08	X	SL_CT1	Hrs	6		438		438		
2	03	07	10			Linac Commissioning (L2,BC2,L3)	3-Dec-07	1-Feb-08	X	SL_CE1	Hrs	60		8,002		8,002		
2	03	07	10			Linac Commissioning (L2,BC2,L3)	3-Dec-07	1-Feb-08	X	SL_CCA	Hrs	114		8,854		8,854		

Detailed Cost Estimate
LINAC SYSTEM

WBS Level						LCLA DCE Aug-2006 Description	Early Start	Early Finish	Fund Type	Res Code	Units	Work Rem. Bud. Qty		Work Rem. Full Burd and Escltd Cost			Contngcy %	Contingency \$
1	2	3	4	5	6							Hours	\$	Labor	M&S	Total		
2	03	07	10			Linac Commissioning (LTU,EDump,UN Interface)	27-Feb-08	30-Sep-08	X	SL_TSM	Hrs	100		12,529		12,529		
2	03	07	10			Linac Commissioning (LTU,EDump,UN Interface)	27-Feb-08	30-Sep-08	X	SL_SEE	Hrs	89		11,151		11,151		
2	03	07	10			Linac Commissioning (LTU,EDump,UN Interface)	27-Feb-08	30-Sep-08	X	SL_PHS	Hrs	562		48,498		48,498		
2	03	07	10			Linac Commissioning (LTU,EDump,UN Interface)	27-Feb-08	30-Sep-08	X	SL_PHP	Hrs	516		42,812		42,812		
2	03	07	10			Linac Commissioning (LTU,EDump,UN Interface)	27-Feb-08	30-Sep-08	X	SL_PCT	Hrs	30		2,190		2,190		
2	03	07	10			Linac Commissioning (LTU,EDump,UN Interface)	27-Feb-08	30-Sep-08	X	SL_PCE	Hrs	60		8,002		8,002		
2	03	07	10			Linac Commissioning (LTU,EDump,UN Interface)	27-Feb-08	30-Sep-08	X	SL_PCC	Hrs	30		2,330		2,330		
2	03	07	10			Linac Commissioning (LTU,EDump,UN Interface)	27-Feb-08	30-Sep-08	X	SL_MVE	Hrs	36		4,510		4,510		
2	03	07	10			Linac Commissioning (LTU,EDump,UN Interface)	27-Feb-08	30-Sep-08	X	SL_MSE	\$\$		51,386		57,079		57,079	
2	03	07	10			Linac Commissioning (LTU,EDump,UN Interface)	27-Feb-08	30-Sep-08	X	SL_MSC	\$\$		1,152		1,280		1,280	
2	03	07	10			Linac Commissioning (LTU,EDump,UN Interface)	27-Feb-08	30-Sep-08	X	SL_MFA	Hrs	50		5,084		5,084		
2	03	07	10			Linac Commissioning (LTU,EDump,UN Interface)	27-Feb-08	30-Sep-08	X	SL_MES	Hrs	48		4,547		4,547		
2	03	07	10			Linac Commissioning (LTU,EDump,UN Interface)	27-Feb-08	30-Sep-08	X	SL_ME1	Hrs	209		24,628		24,628		
2	03	07	10			Linac Commissioning (LTU,EDump,UN Interface)	27-Feb-08	30-Sep-08	X	SL_MDD	Hrs	52		5,137		5,137		
2	03	07	10			Linac Commissioning (LTU,EDump,UN Interface)	27-Feb-08	30-Sep-08	X	SL_CT1	Hrs	6		438		438		
2	03	07	10			Linac Commissioning (LTU,EDump,UN Interface)	27-Feb-08	30-Sep-08	X	SL_CE1	Hrs	60		8,002		8,002		
2	03	07	10			Linac Commissioning (LTU,EDump,UN Interface)	27-Feb-08	30-Sep-08	X	SL_CCA	Hrs	204		15,845		15,845		