# LCLS TPC Detailed Cost Estimate (FY05FY09)

| WBS Level | | | | | | LCLA DCE March-2005 | Early | Early | OBS | Fund | Res | Units | Budgeted Quantity | | Fully Burdened and Escalated Cost | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Run Time: 4/2205 8:43am | | | | | | Description | Start | Finish | | Type | Code | | Hours | $$ | Labor | M&S | Total (No Conting) |
| 1 | 2 | 3 | 4 | 5 | 6 | | | | | | | | | | | | |
| | | | | | | **LINAC COHERENT LIGHT SOURCE (TPC)** | | | | | | | **1,035,456** | **161,806,992** | **104,994,847** | **177,561,971** | **282,556,819** |
| **1** | **01** | **03** | **05** | | | **Global Controls NRE** | | | | | | | **64,370** | **798,675** | **6,129,817** | **903,375** | **7,033,192** |
| **1** | **01** | **03** | **05** | **01** | | **EPICS Controls Modules** | | | | | | | | | | | |
| **1** | **01** | **03** | **05** | **02** | | **LLRF Controls** | | | | | | | **8,956** | **-** | **941,617** | **-** | **941,617** |
| 1 | 01 | 03 | 05 | 02 | | Design LLRF - Combined | 1-Feb-05 | 29-Jul-05 | | P | SL_PHS | Hrs | 13 | | 947 | | 947 |
| 1 | 01 | 03 | 05 | 02 | | Design LLRF - Combined | 1-Feb-05 | 29-Jul-05 | | P | SL_PCEF | Hrs | 127 | | 7,826 | | 7,826 |
| 1 | 01 | 03 | 05 | 02 | | Design LLRF - Combined | 1-Feb-05 | 29-Jul-05 | | P | SL_CP | Hrs | 1,019 | | 92,698 | | 92,698 |
| 1 | 01 | 03 | 05 | 02 | | Design LLRF - Combined | 1-Feb-05 | 29-Jul-05 | | P | SL_CE | Hrs | 1,733 | | 194,980 | | 194,980 |
| 1 | 01 | 03 | 05 | 02 | | Design LLRF - Combined | 1-Feb-05 | 29-Jul-05 | | P | SL_CCA | Hrs | 64 | | 4,194 | | 4,194 |
| 1 | 01 | 03 | 05 | 02 | | Build RF Boards - Rev .B.C.D | 8-Aug-05 | 8-May-06 | S | L | SL_CE | Hrs | 3,960 | | 455,311 | | 455,311 |
| 1 | 01 | 03 | 05 | 02 | | Write First Article RF S/W Documentation | 8-Aug-05 | 6-Jun-06 | | L | SL_CP | Hrs | 1,880 | | 174,883 | | 174,883 |
| 1 | 01 | 03 | 05 | 02 | | Build First Article Hardware | 9-May-06 | 3-Aug-06 | | C | SL_CCA | Hrs | 160 | | 10,778 | | 10,778 |
| **1** | **01** | **03** | **05** | **03** | | **E-Beam Diagnostics & Controls** | | | | | | | **12,807** | **35,000** | **1,227,016** | **38,914** | **1,265,930** |
| **1** | **01** | **03** | **05** | **03** | **01** | **Controls - Wire Scanners** | | | | | | | **1,186** | **-** | **120,166** | **-** | **120,166** |
| 1 | 01 | 03 | 05 | 03 | 01 | Design Linac Wire Scanners | 1-Jul-05 | 13-Oct-05 | | P | SL_CP | Hrs | 456 | | 41,626 | | 41,626 |
| 1 | 01 | 03 | 05 | 03 | 01 | Design Linac Wire Scanners | 1-Jul-05 | 13-Oct-05 | | P | SL_CE | Hrs | 530 | | 59,836 | | 59,836 |
| 1 | 01 | 03 | 05 | 03 | 01 | Write First Article SW | 14-Oct-05 | 10-Nov-05 | | P | SL_CP | Hrs | 200 | | 18,704 | | 18,704 |
| **1** | **01** | **03** | **05** | **03** | **02** | **Controls - Toroids** | | | | | | | **1,570** | **-** | **152,520** | **-** | **152,520** |
| 1 | 01 | 03 | 05 | 03 | 02 | Design Toroid Controls | 2-May-05 | 18-Aug-05 | | P | SL_CP | Hrs | 540 | | 49,124 | | 49,124 |
| 1 | 01 | 03 | 05 | 03 | 02 | Design Toroid Controls | 2-May-05 | 18-Aug-05 | | P | SL_CE | Hrs | 502 | | 56,480 | | 56,480 |
| 1 | 01 | 03 | 05 | 03 | 02 | Design Toroid Controls | 2-May-05 | 18-Aug-05 | | P | SL_CCA | Hrs | 88 | | 5,767 | | 5,767 |
| 1 | 01 | 03 | 05 | 03 | 02 | Write First Article SW - Toroid | 3-Oct-05 | 8-Dec-05 | | C | SL_CP | Hrs | 440 | | 41,149 | | 41,149 |
| **1** | **01** | **03** | **05** | **03** | **03** | **Controls - Faraday Cups** | | | | | | | **1,162** | **-** | **114,543** | **-** | **114,543** |
| 1 | 01 | 03 | 05 | 03 | 03 | Design Faraday Cup Controls | 1-Jul-05 | 22-Sep-05 | | P | SL_CP | Hrs | 360 | | 32,749 | | 32,749 |
| 1 | 01 | 03 | 05 | 03 | 03 | Design Faraday Cup Controls | 1-Jul-05 | 22-Sep-05 | | P | SL_CE | Hrs | 362 | | 40,729 | | 40,729 |
| 1 | 01 | 03 | 05 | 03 | 03 | Write First Article SW - Faraday Cups | 23-Sep-05 | 1-Feb-06 | | L | SL_CP | Hrs | 440 | | 41,065 | | 41,065 |
| **1** | **01** | **03** | **05** | **03** | **04** | **Controls - Tune-up Dump** | | | | | | | **112** | **-** | **11,395** | **-** | **11,395** |
| 1 | 01 | 03 | 05 | 03 | 04 | Design Tune-up Dump Controls | 1-Apr-05 | 17-Jun-05 | | P | SL_CP | Hrs | 56 | | 5,094 | | 5,094 |
| 1 | 01 | 03 | 05 | 03 | 04 | Design Tune-up Dump Controls | 1-Apr-05 | 17-Jun-05 | | P | SL_CE | Hrs | 56 | | 6,301 | | 6,301 |
| **1** | **01** | **03** | **05** | **03** | **05** | **Controls - Profile Monitors** | | | | | | | **1,450** | **-** | **133,607** | **-** | **133,607** |
| 1 | 01 | 03 | 05 | 03 | 05 | Design Profile Monitors | 1-Jul-05 | 22-Sep-05 | | P | SL_CP | Hrs | 360 | | 32,749 | | 32,749 |
| 1 | 01 | 03 | 05 | 03 | 05 | Design Profile Monitors | 1-Jul-05 | 22-Sep-05 | | P | SL_CE | Hrs | 362 | | 40,729 | | 40,729 |
| 1 | 01 | 03 | 05 | 03 | 05 | Design Profile Monitors | 1-Jul-05 | 22-Sep-05 | | P | SL_CCA | Hrs | 288 | | 18,873 | | 18,873 |
| 1 | 01 | 03 | 05 | 03 | 05 | Write First Article S/W for Profile Monitors | 31-Jan-06 | 26-Oct-06 | | C | SL_CP | Hrs | 440 | | 41,256 | | 41,256 |
| **1** | **01** | **03** | **05** | **03** | **06** | **Controls - E/O Beam Diagnostics** | | | | | | | **2,977** | **5,000** | **282,394** | **5,600** | **287,994** |
| 1 | 01 | 03 | 05 | 03 | 06 | Design EO Disgnostics | 2-May-05 | 30-Sep-05 | | P | SL_CP | Hrs | 747 | | 67,955 | | 67,955 |
| 1 | 01 | 03 | 05 | 03 | 06 | Design EO Disgnostics | 2-May-05 | 30-Sep-05 | | P | SL_CE | Hrs | 413 | | 46,467 | | 46,467 |
| 1 | 01 | 03 | 05 | 03 | 06 | Design EO Disgnostics | 2-May-05 | 30-Sep-05 | | P | SL_CCA | Hrs | 355 | | 23,263 | | 23,263 |
| 1 | 01 | 03 | 05 | 03 | 06 | Design EO Diagnostics - CON | 3-Oct-05 | 10-Feb-06 | | C | SL_CP | Hrs | 468 | | 43,767 | | 43,767 |
| 1 | 01 | 03 | 05 | 03 | 06 | Design EO Diagnostics - CON | 3-Oct-05 | 10-Feb-06 | | C | SL_CE | Hrs | 422 | | 48,809 | | 48,809 |
| 1 | 01 | 03 | 05 | 03 | 06 | Design EO Diagnostics - CON | 3-Oct-05 | 10-Feb-06 | | C | SL_CCA | Hrs | 52 | | 3,503 | | 3,503 |
| 1 | 01 | 03 | 05 | 03 | 06 | Write First Article for E/O Diagnostics | 14-Feb-06 | 15-Sep-06 | | C | SL_CP | Hrs | 520 | | 48,630 | | 48,630 |
| 1 | 01 | 03 | 05 | 03 | 06 | Procure 1 Set E/O Diagnostic Cntrls H/W & Cables | 14-Feb-06 | 14-Mar-06 | S | C | SL_MSEG | $$ | | 5,000 | | 5,600 | 5,600 |
| **1** | **01** | **03** | **05** | **03** | **07** | **Controls - BPM** | | | | | | | **3,247** | **30,000** | **308,358** | **33,314** | **341,672** |
| 1 | 01 | 03 | 05 | 03 | 07 | Design BPMs | 1-Feb-05 | 31-Aug-05 | | P | SL_KE | Hrs | 158 | | 17,777 | | 17,777 |
| 1 | 01 | 03 | 05 | 03 | 07 | Design BPMs | 1-Feb-05 | 31-Aug-05 | | P | SL_CP | Hrs | 249 | | 22,652 | | 22,652 |
| 1 | 01 | 03 | 05 | 03 | 07 | Design BPMs | 1-Feb-05 | 31-Aug-05 | | P | SL_CE | Hrs | 1,432 | | 161,114 | | 161,114 |
| 1 | 01 | 03 | 05 | 03 | 07 | Design BPMs | 1-Feb-05 | 31-Aug-05 | | P | SL_CCA | Hrs | 888 | | 58,191 | | 58,191 |
| 1 | 01 | 03 | 05 | 03 | 07 | Write First Article S/W for BPMs | 30-Sep-05 | 17-Aug-06 | | L | SL_CP | Hrs | 520 | | 48,624 | | 48,624 |
| 1 | 01 | 03 | 05 | 03 | 07 | Procure Prototype Board & Parts | 2-Sep-05 | 2-Dec-05 | S | L | SL_MSEG | $$ | | 30,000 | | 33,314 | 33,314 |
| **1** | **01** | **03** | **05** | **03** | **08** | **Controls - Stoppers** | | | | | | | **369** | **-** | **34,548** | **-** | **34,548** |
| 1 | 01 | 03 | 05 | 03 | 08 | Design Linac Stoppers | 4-Oct-05 | 6-Jan-06 | | P | SL_CP | Hrs | 88 | | 8,230 | | 8,230 |
| 1 | 01 | 03 | 05 | 03 | 08 | Design Linac Stoppers | 4-Oct-05 | 6-Jan-06 | | P | SL_CE | Hrs | 153 | | 17,696 | | 17,696 |
| 1 | 01 | 03 | 05 | 03 | 08 | Design Linac Stoppers | 4-Oct-05 | 6-Jan-06 | | P | SL_CCA | Hrs | 128 | | 8,622 | | 8,622 |
| **1** | **01** | **03** | **05** | **03** | **09** | **Controls - Bunch Length Monitors** | | | | | | | **497** | **-** | **46,518** | **-** | **46,518** |
| 1 | 01 | 03 | 05 | 03 | 09 | Design Bunch Length Monitors | 3-Oct-05 | 12-Jan-06 | | P | SL_CP | Hrs | 216 | | 20,200 | | 20,200 |
| 1 | 01 | 03 | 05 | 03 | 09 | Design Bunch Length Monitors | 3-Oct-05 | 12-Jan-06 | | P | SL_CE | Hrs | 153 | | 17,696 | | 17,696 |
| 1 | 01 | 03 | 05 | 03 | 09 | Design Bunch Length Monitors | 3-Oct-05 | 12-Jan-06 | | P | SL_CCA | Hrs | 128 | | 8,622 | | 8,622 |
| **1** | **01** | **03** | **05** | **03** | **10** | **Controls - Beam Loss Monitors** | | | | | | | **237** | **-** | **22,967** | **-** | **22,967** |
| 1 | 01 | 03 | 05 | 03 | 10 | Design Beam Loss Monitors | 4-Oct-05 | 15-Dec-05 | | P | SL_CP | Hrs | 96 | | 8,978 | | 8,978 |
| 1 | 01 | 03 | 05 | 03 | 10 | Design Beam Loss Monitors | 4-Oct-05 | 15-Dec-05 | | P | SL_CE | Hrs | 93 | | 10,756 | | 10,756 |
| 1 | 01 | 03 | 05 | 03 | 10 | Design Beam Loss Monitors | 4-Oct-05 | 15-Dec-05 | | P | SL_CCA | Hrs | 48 | | 3,233 | | 3,233 |
| **1** | **01** | **03** | **05** | **04** | | **Laser Controls Design** | | | | | | | **1,281** | **-** | **136,478** | **-** | **136,478** |
| 1 | 01 | 03 | 05 | 04 | | Design Gun Laser Controls | 2-May-05 | 3-Aug-05 | | P | SL_CP | Hrs | 355 | | 32,294 | | 32,294 |

| WBS Level | | | | | | LCLA DCE March-2005 | Early | Early | OBS | Fund | Res | Units | Budgeted Quantity | | Fully Burdened and Escalated Cost | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Run Time: 4/2205 8:43am | | | | | | Description | Start | Finish | | Type | Code | | Hours | $$ | Labor | M&S | Total (No Conting) |
| 1 | 2 | 3 | 4 | 5 | 6 | | | | | | | | | | | | |
| 1 | 01 | 03 | 05 | 04 | | Design Gun Laser Controls | 2-May-05 | 3-Aug-05 | | P | SL_CE | Hrs | 926 | | 104,184 | | 104,184 |
| **1** | **01** | **03** | **05** | **05** | | **Laser Heater Controls Design** | | | | | | | **738** | **-** | **77,165** | **-** | **77,165** |
| 1 | 01 | 03 | 05 | 05 | | Design Laser Heater Controls | 12-Apr-06 | 29-Sep-06 | | C | SL_CP | Hrs | 370 | | 34,602 | | 34,602 |
| 1 | 01 | 03 | 05 | 05 | | Design Laser Heater Controls | 12-Apr-06 | 29-Sep-06 | | C | SL_CE | Hrs | 368 | | 42,563 | | 42,563 |
| **1** | **01** | **03** | **05** | **06** | | **Timing Controls** | | | | | | | **200** | **-** | **22,502** | **-** | **22,502** |
| 1 | 01 | 03 | 05 | 06 | | Linac Timing Subsystem Design | 1-Jun-05 | 10-Aug-05 | | P | SL_CE | Hrs | 200 | | 22,502 | | 22,502 |
| **1** | **01** | **03** | **05** | **07** | | **Vacuum Controls Infrastructure** | | | | | | | **2,554** | **-** | **252,389** | **-** | **252,389** |
| 1 | 01 | 03 | 05 | 07 | | Design Vacuum Controls | 1-Feb-05 | 25-Aug-05 | | L | SL_CP | Hrs | 728 | | 66,226 | | 66,226 |
| 1 | 01 | 03 | 05 | 07 | | Design Vacuum Controls | 1-Feb-05 | 25-Aug-05 | | L | SL_CE | Hrs | 826 | | 92,933 | | 92,933 |
| 1 | 01 | 03 | 05 | 07 | | First Article Vacuum Software | 26-Aug-05 | 25-Jul-06 | S | L | SL_CP | Hrs | 1,000 | | 93,230 | | 93,230 |
| **1** | **01** | **03** | **05** | **08** | | **S/W & Controls Infrastructure** | | | | | | | | | | | |
| **1** | **01** | **03** | **05** | **09** | | **Power Supply Control** | | | | | | | **5,098** | **-** | **522,565** | **-** | **522,565** |
| 1 | 01 | 03 | 05 | 09 | | Design Power Supply - NEW | 1-Feb-05 | 7-Nov-05 | | L | SL_PCE | Hrs | 2,940 | | 332,008 | | 332,008 |
| 1 | 01 | 03 | 05 | 09 | | Design Power Supply - NEW | 1-Feb-05 | 7-Nov-05 | | L | SL_PCCA | Hrs | 650 | | 42,752 | | 42,752 |
| 1 | 01 | 03 | 05 | 09 | | Design Power Supply - NEW | 1-Feb-05 | 7-Nov-05 | | L | SL_CP | Hrs | 355 | | 32,414 | | 32,414 |
| 1 | 01 | 03 | 05 | 09 | | Design Power Supply - NEW | 1-Feb-05 | 7-Nov-05 | | L | SL_CE | Hrs | 399 | | 45,058 | | 45,058 |
| 1 | 01 | 03 | 05 | 09 | | Write First Article S/W for Power Supplies | 8-Nov-05 | 17-Apr-06 | | L | SL_CP | Hrs | 540 | | 50,501 | | 50,501 |
| 1 | 01 | 03 | 05 | 09 | | Write First Article S/W for Power Supplies | 8-Nov-05 | 17-Apr-06 | | L | SL_CCA | Hrs | 94 | | 6,332 | | 6,332 |
| 1 | 01 | 03 | 05 | 09 | | Define Power Conv Spec Requirements | 1-Feb-05 | 7-Feb-05 | | L | SL_PCE | Hrs | 40 | | 4,500 | | 4,500 |
| 1 | 01 | 03 | 05 | 09 | | Prep Bid Pak - Power Supplies - (Dipole Type) | 8-Feb-05 | 14-Feb-05 | S | L | SL_PCE | Hrs | 40 | | 4,500 | | 4,500 |
| 1 | 01 | 03 | 05 | 09 | | Prep Bid Pak - Power Supplies - (Trim Type) | 8-Feb-05 | 14-Feb-05 | S | L | SL_PCE | Hrs | 40 | | 4,500 | | 4,500 |
| **1** | **01** | **03** | **05** | **10** | | **MPS/PPS/BCS Controls** | | | | | | | **4,867** | **-** | **411,724** | **-** | **411,724** |
| 1 | 01 | 03 | 05 | 10 | | PPS/MPS Design New | 2-May-05 | 11-Jan-06 | | L | SL_PCEF | Hrs | 224 | | 13,941 | | 13,941 |
| 1 | 01 | 03 | 05 | 10 | | PPS/MPS Design New | 2-May-05 | 11-Jan-06 | | L | SL_MFAT | Hrs | 157 | | 12,983 | | 12,983 |
| 1 | 01 | 03 | 05 | 10 | | PPS/MPS Design New | 2-May-05 | 11-Jan-06 | | L | SL_ME | Hrs | 39 | | 4,164 | | 4,164 |
| 1 | 01 | 03 | 05 | 10 | | PPS/MPS Design New | 2-May-05 | 11-Jan-06 | | L | SL_MDD | Hrs | 39 | | 2,471 | | 2,471 |
| 1 | 01 | 03 | 05 | 10 | | PPS/MPS Design New | 2-May-05 | 11-Jan-06 | | L | SL_CT | Hrs | 899 | | 55,952 | | 55,952 |
| 1 | 01 | 03 | 05 | 10 | | PPS/MPS Design New | 2-May-05 | 11-Jan-06 | | L | SL_CP | Hrs | 1,462 | | 134,338 | | 134,338 |
| 1 | 01 | 03 | 05 | 10 | | PPS/MPS Design New | 2-May-05 | 11-Jan-06 | | L | SL_CE | Hrs | 1,104 | | 125,460 | | 125,460 |
| 1 | 01 | 03 | 05 | 10 | | PPS/MPS Design New | 2-May-05 | 11-Jan-06 | | L | SL_CCA | Hrs | 943 | | 62,415 | | 62,415 |
| **1** | **01** | **03** | **05** | **11** | | **Global Controls Commissioning** | | | | | | | | | | | |
| **1** | **01** | **03** | **05** | **12** | | **Global Controls NRE** | | | | | | | **26,074** | **763,675** | **2,375,070** | **864,461** | **3,239,531** |
| 1 | 01 | 03 | 05 | 12 | | Global Controls Management - PED | 1-Oct-04 | 29-Sep-05 | | P | SL_MSPS | $$ | | 136,529 | | 148,817 | 148,817 |
| 1 | 01 | 03 | 05 | 12 | | Global Controls Management - PED | 1-Oct-04 | 29-Sep-05 | | P | SL_CE | Hrs | 1,701 | | 191,380 | | 191,380 |
| 1 | 01 | 03 | 05 | 12 | | Global Controls Management - CONST | 3-Oct-05 | 30-Mar-09 | S | C | SL_MSPS | $$ | | 284,764 | | 329,875 | 329,875 |
| 1 | 01 | 03 | 05 | 12 | | Global Controls Management - CONST | 3-Oct-05 | 30-Mar-09 | S | C | SL_CE | Hrs | 5,915 | | 707,236 | | 707,236 |
| 1 | 01 | 03 | 05 | 12 | | Global Controls System Administrator - PED | 1-Feb-05 | 28-Oct-05 | S | P | SL_CRA | Hrs | 602 | | 28,214 | | 28,214 |
| 1 | 01 | 03 | 05 | 12 | | Global Controls System Administrator - CONST | 31-Oct-05 | 2-Dec-08 | S | C | SL_CRA | Hrs | 5,250 | | 259,770 | | 259,770 |
| 1 | 01 | 03 | 05 | 12 | | Write low level application SW Rqrmnts - PED | 18-Oct-04 | 14-Oct-05 | S | P | SL_CP | Hrs | 1,330 | | 121,130 | | 121,130 |
| 1 | 01 | 03 | 05 | 12 | | Write low level application SW Rqrmnts - CONST | 3-Jan-06 | 1-Dec-06 | | C | SL_CP | Hrs | 1,624 | | 152,608 | | 152,608 |
| 1 | 01 | 03 | 05 | 12 | | Write Low Level application SW Rqrmnts - Const | 17-Jan-07 | 26-Nov-07 | | C | SL_CP | Hrs | 1,526 | | 147,102 | | 147,102 |
| 1 | 01 | 03 | 05 | 12 | | High Level Application Programming - 1st Phase | 3-Jan-05 | 30-Jun-05 | | P | SL_CP | Hrs | 504 | | 45,849 | | 45,849 |
| 1 | 01 | 03 | 05 | 12 | | High Level Application Programming - PED | 1-Aug-05 | 28-Oct-05 | S | P | SL_CP | Hrs | 720 | | 66,072 | | 66,072 |
| 1 | 01 | 03 | 05 | 12 | | High Level Application Programming - CONST | 31-Oct-05 | 27-Oct-06 | S | C | SL_CP | Hrs | 3,388 | | 317,526 | | 317,526 |
| 1 | 01 | 03 | 05 | 12 | | High Level Application Programming - CONST | 30-Oct-06 | 8-Nov-07 | | C | SL_CP | Hrs | 3,514 | | 338,183 | | 338,183 |
| 1 | 01 | 03 | 05 | 12 | | LCLS Beam Instrumentatn Cntls & Test Equip FY05 | 1-Feb-05 | 28-Oct-05 | S | P | SL_MSEG | $$ | | 97,333 | | 106,400 | 106,400 |
| 1 | 01 | 03 | 05 | 12 | | LCLS Beam Instrumentatn Cntls & Test Equip FY06 | 31-Oct-05 | 27-Oct-06 | | C | SL_MSEG | $$ | | 97,333 | | 109,246 | 109,246 |
| 1 | 01 | 03 | 05 | 12 | | LCLS Beam Instrumentatn Cntls & Test Equip FY07 | 30-Oct-06 | 26-Oct-07 | | C | SL_MSEG | $$ | | 89,716 | | 103,388 | 103,388 |
| 1 | 01 | 03 | 05 | 12 | | SLAC MCC Controls Upgrade | 3-Oct-06 | 5-Oct-07 | S | C | SL_MSEG | $$ | | 58,000 | | 66,735 | 66,735 |
| **1** | **01** | **03** | **05** | **13** | | **SLC Aware IOC - PED** | | | | | | | **1,795** | **-** | **163,291** | **-** | **163,291** |
| 1 | 01 | 03 | 05 | 13 | | SLC Aware IOC - PED | 28-Feb-05 | 22-Aug-05 | | P | SL_CP | Hrs | 1,795 | | 163,291 | | 163,291 |
| **1** | **02** | **02** | | | | **Injector Controls Subsystem** | | | | | | | **11,500** | **1,561,248** | **927,938** | **1,747,118** | **2,675,056** |
| **1** | **02** | **02** | **01** | | | **Personnel Protection Subsystem (PPS)** | | | | | | | **-** | **79,293** | **-** | **88,311** | **88,311** |
| 1 | 02 | 02 | 01 | | | Procure PPS Hardware | 13-Jan-06 | 5-Jul-06 | | L | SL_MSEG | $$ | | 62,717 | | 70,243 | 70,243 |
| 1 | 02 | 02 | 01 | | | Procure Entryway Hardware | 1-Jun-05 | 22-Sep-05 | | L | SL_MSEG | $$ | | 16,576 | | 18,068 | 18,068 |
| **1** | **02** | **02** | **02** | | | **Beam Containment Subsystem (BCS)** | | | | | | | **180** | **-** | **16,796** | **-** | **16,796** |
| 1 | 02 | 02 | 02 | | | Write S/W Docmtn for Power Supply Controls | 23-Jun-05 | 28-Jul-05 | | L | SL_CP | Hrs | 40 | | 3,639 | | 3,639 |
| 1 | 02 | 02 | 02 | | | Integrate and Test Power Supply Controls | 10-Feb-06 | 22-Nov-06 | | C | SL_CP | Hrs | 140 | | 13,157 | | 13,157 |
| **1** | **02** | **02** | **03** | | | **Machine Protection Subsystem (MPS)** | | | | | | | **-** | **44,477** | **-** | **51,149** | **51,149** |
| 1 | 02 | 02 | 03 | | | Procure MPS Hardware | 2-Oct-06 | 9-Mar-07 | | L | SL_MSEG | $$ | | 44,477 | | 51,149 | 51,149 |
| **1** | **02** | **02** | **04** | | | **Injector Power Conversion** | | | | | | | **2,021** | **482,250** | **161,840** | **531,671** | **693,511** |
| **1** | **02** | **02** | **04** | **01** | | **Beamline Pwr Supplies - (Dipole Type)** | | | | | | | **312** | **68,599** | **26,915** | **74,776** | **101,691** |
| **1** | **02** | **02** | **04** | **01** | **01** | **10kw Power Supply - (Solenoid 1)** | | | | | | | **64** | **12,234** | **5,563** | **13,338** | **18,901** |
| 1 | 02 | 02 | 04 | 01 | 01 | 10kw Power Supply - (Selenoid 1) | 3-May-05 | 3-Oct-05 | | L | SL_MSEG | $$ | | 12,234 | | 13,338 | 13,338 |

| WBS Level | | | | | | LCLA DCE March-2005 | Early | Early | OBS | Fund | Res | Units | Budgeted Quantity | | Fully Burdened and Escalated Cost | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Run Time: 4/2205 8:43am | | | | | | Description | Start | Finish | | Type | Code | | Hours | $$ | Labor | M&S | Total (No Conting) |
| 1 | 2 | 3 | 4 | 5 | 6 | | | | | | | | | | | | |
| 1 | 02 | 02 | 04 | 01 | 01 | Conduct Design Review | 2-May-05 | 2-May-05 | S | L | SL_PCE | Hrs | 8 | | 900 | | 900 |
| 1 | 02 | 02 | 04 | 01 | 01 | Perform Solenoid 1 PS 10KW Pre-Install Qual Test | 3-Oct-06 | 30-Oct-06 | S | C | SL_PCE | Hrs | 16 | | 1,899 | | 1,899 |
| 1 | 02 | 02 | 04 | 01 | 01 | Perform Solenoid 1 PS 10KW Pre-Install Qual Test | 3-Oct-06 | 30-Oct-06 | S | C | SL_PCCA | Hrs | 40 | | 2,764 | | 2,764 |
| **1** | **02** | **02** | **04** | **01** | **02** | **30kw Power Supply - (Solenoid 2)** | | | | | | | **64** | **15,197** | **5,563** | **16,565** | **22,128** |
| 1 | 02 | 02 | 04 | 01 | 02 | 30kw Power Supply - (Solenoid 2) | 2-Jun-05 | 9-Sep-05 | | L | SL_MSEG | $$ | | 15,197 | | 16,565 | 16,565 |
| 1 | 02 | 02 | 04 | 01 | 02 | Conduct Design Review | 1-Jun-05 | 1-Jun-05 | S | L | SL_PCE | Hrs | 8 | | 900 | | 900 |
| 1 | 02 | 02 | 04 | 01 | 02 | Perform Solenoid 2 PS 15KW Pre-Install Qual Test | 2-Oct-06 | 27-Oct-06 | S | C | SL_PCE | Hrs | 16 | | 1,899 | | 1,899 |
| 1 | 02 | 02 | 04 | 01 | 02 | Perform Solenoid 2 PS 15KW Pre-Install Qual Test | 2-Oct-06 | 27-Oct-06 | S | C | SL_PCCA | Hrs | 40 | | 2,764 | | 2,764 |
| **1** | **02** | **02** | **04** | **01** | **03** | **2kw Power Supply - (B0.5 Spect)** | | | | | | | | | | | |
| **1** | **02** | **02** | **04** | **01** | **04** | **15kw Power Supply - (B1-2)** | | | | | | | **64** | **14,467** | **5,563** | **15,769** | **21,332** |
| 1 | 02 | 02 | 04 | 01 | 04 | 15kw Power Supply - (B1-2) | 2-Jun-05 | 9-Sep-05 | | L | SL_MSEG | $$ | | 14,467 | | 15,769 | 15,769 |
| 1 | 02 | 02 | 04 | 01 | 04 | Conduct Design Review | 1-Jun-05 | 1-Jun-05 | S | L | SL_PCE | Hrs | 8 | | 900 | | 900 |
| 1 | 02 | 02 | 04 | 01 | 04 | Perform BX011-BX02 PS 15KW Pre-Install Qual Test | 2-Oct-06 | 27-Oct-06 | S | C | SL_PCE | Hrs | 16 | | 1,899 | | 1,899 |
| 1 | 02 | 02 | 04 | 01 | 04 | Perform BX011-BX02 PS 15KW Pre-Install Qual Test | 2-Oct-06 | 27-Oct-06 | S | C | SL_PCCA | Hrs | 40 | | 2,764 | | 2,764 |
| **1** | **02** | **02** | **04** | **01** | **05** | **15kw Power Supply - (B3 Spect)** | | | | | | | **64** | **14,467** | **5,563** | **15,769** | **21,332** |
| 1 | 02 | 02 | 04 | 01 | 05 | 15kw Power Supply (B3-Spect) | 2-Jun-05 | 9-Sep-05 | | L | SL_MSEG | $$ | | 14,467 | | 15,769 | 15,769 |
| 1 | 02 | 02 | 04 | 01 | 05 | Conduct Design Review | 1-Jun-05 | 1-Jun-05 | S | L | SL_PCE | Hrs | 8 | | 900 | | 900 |
| 1 | 02 | 02 | 04 | 01 | 05 | Perform BXS Spect PS 15KW Pre-Install Qual Test | 2-Oct-06 | 27-Oct-06 | S | C | SL_PCE | Hrs | 16 | | 1,899 | | 1,899 |
| 1 | 02 | 02 | 04 | 01 | 05 | Perform BXS Spect PS 15KW Pre-Install Qual Test | 2-Oct-06 | 27-Oct-06 | S | C | SL_PCCA | Hrs | 40 | | 2,764 | | 2,764 |
| **1** | **02** | **02** | **04** | **01** | **06** | **10kw Power Supply - (New)** | | | | | | | **56** | **12,234** | **4,663** | **13,335** | **17,998** |
| 1 | 02 | 02 | 04 | 01 | 06 | 10kw Power Supply - (New) | 21-Jun-05 | 28-Sep-05 | | L | SL_MSEG | $$ | | 12,234 | | 13,335 | 13,335 |
| 1 | 02 | 02 | 04 | 01 | 06 | Perform Wiggler PS 10KW Pre-Install Qual | 2-Oct-06 | 27-Oct-06 | S | C | SL_PCE | Hrs | 16 | | 1,899 | | 1,899 |
| 1 | 02 | 02 | 04 | 01 | 06 | Perform Wiggler PS 10KW Pre-Install Qual | 2-Oct-06 | 27-Oct-06 | S | C | SL_PCCA | Hrs | 40 | | 2,764 | | 2,764 |
| **1** | **02** | **02** | **04** | **02** | | **Power Supply Controls** | | | | | | | **60** | **-** | **5,220** | **-** | **5,220** |
| 1 | 02 | 02 | 04 | 02 | | Integrate software & hardware | 2-Oct-06 | 6-Oct-06 | S | L | SL_CP | Hrs | 40 | | 3,838 | | 3,838 |
| 1 | 02 | 02 | 04 | 02 | | Integrate software & hardware | 2-Oct-06 | 6-Oct-06 | S | L | SL_CCA | Hrs | 20 | | 1,382 | | 1,382 |
| **1** | **02** | **02** | **04** | **03** | | **Beamline Pwr Supplies - (Trim Type)** | | | | | | | **256** | **157,016** | **22,326** | **175,334** | **197,660** |
| **1** | **02** | **02** | **04** | **03** | **01** | **12Amp Power Supply - (MCOR_1)** | | | | | | | **64** | **45,894** | **5,588** | **51,401** | **56,989** |
| 1 | 02 | 02 | 04 | 03 | 01 | RCV:12 Amp Power Supply (MCOR 1) (16 ps) | 0-Jan-00 | 22-May-06 | S | L | SL_MSEG | $$ | | - | | - | - |
| 1 | 02 | 02 | 04 | 03 | 01 | 12 Amp Power Supply (MCOR 1) (16 ps) | 8-Dec-05 | 22-May-06 | | L | SL_MSEG | $$ | | 45,894 | | 51,401 | 51,401 |
| 1 | 02 | 02 | 04 | 03 | 01 | Conduct Design Review | 7-Dec-05 | 7-Dec-05 | S | L | SL_PCE | Hrs | 8 | | 925 | | 925 |
| 1 | 02 | 02 | 04 | 03 | 01 | Perform MCOR_1 Pre-Install Qual Test | 2-Oct-06 | 27-Oct-06 | S | C | SL_PCE | Hrs | 16 | | 1,899 | | 1,899 |
| 1 | 02 | 02 | 04 | 03 | 01 | Perform MCOR_1 Pre-Install Qual Test | 2-Oct-06 | 27-Oct-06 | S | C | SL_PCCA | Hrs | 40 | | 2,764 | | 2,764 |
| **1** | **02** | **02** | **04** | **03** | **02** | **30Amp Power Supply - (MCOR_2)** | | | | | | | **64** | **46,834** | **5,612** | **53,859** | **59,471** |
| 1 | 02 | 02 | 04 | 03 | 02 | Conduct Design Panel | 2-Oct-06 | 2-Oct-06 | S | L | SL_PCE | Hrs | 8 | | 949 | | 949 |
| 1 | 02 | 02 | 04 | 03 | 02 | 30 Amp Power Supply - (MCOR_2) | 3-Oct-06 | 19-Mar-07 | | L | SL_MSEG | $$ | | 46,834 | | 53,859 | 53,859 |
| 1 | 02 | 02 | 04 | 03 | 02 | Perform MCOR_2 Pre-Install Qual Test | 2-Oct-06 | 27-Oct-06 | S | C | SL_PCE | Hrs | 16 | | 1,899 | | 1,899 |
| 1 | 02 | 02 | 04 | 03 | 02 | Perform MCOR_2 Pre-Install Qual Test | 2-Oct-06 | 27-Oct-06 | S | C | SL_PCCA | Hrs | 40 | | 2,764 | | 2,764 |
| **1** | **02** | **02** | **04** | **03** | **03** | **30Amp Power Supply - (MCOR_3)** | | | | | | | **64** | **27,769** | **5,563** | **30,268** | **35,831** |
| 1 | 02 | 02 | 04 | 03 | 03 | 30Amp Power Supply - (MCOR_3) | 3-May-05 | 29-Sep-05 | | L | SL_MSEG | $$ | | 27,769 | | 30,268 | 30,268 |
| 1 | 02 | 02 | 04 | 03 | 03 | Conduct Design Review | 2-May-05 | 2-May-05 | S | L | SL_PCE | Hrs | 8 | | 900 | | 900 |
| 1 | 02 | 02 | 04 | 03 | 03 | Perform MCOR_3 Pre-Install Qual Test | 2-Oct-06 | 27-Oct-06 | S | C | SL_PCE | Hrs | 16 | | 1,899 | | 1,899 |
| 1 | 02 | 02 | 04 | 03 | 03 | Perform MCOR_3 Pre-Install Qual Test | 2-Oct-06 | 27-Oct-06 | S | C | SL_PCCA | Hrs | 40 | | 2,764 | | 2,764 |
| **1** | **02** | **02** | **04** | **03** | **04** | **30Amp Power Supply - (MCOR_4)** | | | | | | | **64** | **36,519** | **5,563** | **39,806** | **45,369** |
| 1 | 02 | 02 | 04 | 03 | 04 | 30 Amp Power Supply (MCOR_4) | 3-May-05 | 29-Sep-05 | | L | SL_MSEG | $$ | | 36,519 | | 39,806 | 39,806 |
| 1 | 02 | 02 | 04 | 03 | 04 | Conduct Design Review | 2-May-05 | 2-May-05 | S | L | SL_PCE | Hrs | 8 | | 900 | | 900 |
| 1 | 02 | 02 | 04 | 03 | 04 | Perform MCOR_4 Pre-Install Qual Test | 2-Oct-06 | 27-Oct-06 | S | C | SL_PCE | Hrs | 16 | | 1,899 | | 1,899 |
| 1 | 02 | 02 | 04 | 03 | 04 | Perform MCOR_4 Pre-Install Qual Test | 2-Oct-06 | 27-Oct-06 | S | C | SL_PCCA | Hrs | 40 | | 2,764 | | 2,764 |
| **1** | **02** | **02** | **04** | **04** | | **Beamline Pwr Supply - Misc Hdwr** | | | | | | | **1,393** | **256,635** | **107,379** | **281,561** | **388,940** |
| 1 | 02 | 02 | 04 | 04 | | Design Cableplant and Racks | 2-May-05 | 21-Sep-05 | | P | SL_PCE | Hrs | 256 | | 28,803 | | 28,803 |
| 1 | 02 | 02 | 04 | 04 | | Design Cableplant and Racks | 2-May-05 | 21-Sep-05 | | P | SL_PCCA | Hrs | 360 | | 23,591 | | 23,591 |
| 1 | 02 | 02 | 04 | 04 | | Captar Documents | 16-May-05 | 27-May-05 | S | L | SL_PCCA | Hrs | 80 | | 5,242 | | 5,242 |
| 1 | 02 | 02 | 04 | 04 | | Cableplant and Rack Hardware | 21-Jun-05 | 9-Dec-05 | | L | SL_MSEG | $$ | | 68,935 | | 75,966 | 75,966 |
| 1 | 02 | 02 | 04 | 04 | | Prep Bid Pak - Single Bay Racks (DC/I&C) | 31-May-05 | 20-Jun-05 | S | L | SL_PCE | Hrs | 8 | | 900 | | 900 |
| 1 | 02 | 02 | 04 | 04 | | Evaluate Proposals - Single Bay Racks (DC/ | 20-Jul-05 | 9-Aug-05 | S | L | SL_PCE | Hrs | 8 | | 900 | | 900 |
| 1 | 02 | 02 | 04 | 04 | | Vendor Fab/Assy - Single Bay Racks | 11-Aug-05 | 15-Feb-06 | S | L | SA_MSSC | $$ | | 25,200 | | 27,997 | 27,997 |
| 1 | 02 | 02 | 04 | 04 | | Prep Bid Pak - Double Bay Racks | 31-May-05 | 20-Jun-05 | S | L | SL_PCE | Hrs | 8 | | 900 | | 900 |
| 1 | 02 | 02 | 04 | 04 | | Evaluate Proposals - Double Bay Racks | 20-Jul-05 | 9-Aug-05 | S | L | SL_PCE | Hrs | 8 | | 900 | | 900 |
| 1 | 02 | 02 | 04 | 04 | | Vendor Fab/Assy - Double Bay Racks | 11-Aug-05 | 15-Feb-06 | S | L | SA_MSSC | $$ | | 22,500 | | 24,998 | 24,998 |
| 1 | 02 | 02 | 04 | 04 | | Prep Bid Pak - Cableplant Install(DC.I&C)-S20 | 31-May-05 | 20-Jun-05 | S | L | SL_PCE | Hrs | 48 | | 5,400 | | 5,400 |
| 1 | 02 | 02 | 04 | 04 | | Evaluate Prop-Cableplant Install(DC.I&C)-S20 | 20-Jul-05 | 2-Aug-05 | S | L | SL_PCE | Hrs | 24 | | 2,700 | | 2,700 |
| 1 | 02 | 02 | 04 | 04 | | Vendor - Cableplant Install (DC. I&C)-S20 | 4-Aug-05 | 4-Aug-05 | | L | SA_MSSC | $$ | | 140,000 | | 152,600 | 152,600 |
| 1 | 02 | 02 | 04 | 04 | | Integ Rack Rack HW & Internal AC Wiring - S20 | 16-Feb-06 | 6-Mar-06 | S | C | SL_PCEF | Hrs | 135 | | 8,551 | | 8,551 |
| 1 | 02 | 02 | 04 | 04 | | Integ Rack Mount Pwr Supplies&Intra Cables - S20 | 23-May-06 | 16-Aug-06 | S | C | SL_PCEF | Hrs | 68 | | 4,307 | | 4,307 |

| WBS Level | | | | | | LCLA DCE March-2005 | Early | Early | OBS | Fund | Res | Units | Budgeted Quantity | | Fully Burdened and Escalated Cost | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Run Time: 4/2205 8:43am | | | | | | Description | Start | Finish | | Type | Code | | Hours | $$ | Labor | M&S | Total (No Conting) |
| 1 | 2 | 3 | 4 | 5 | 6 | | | | | | | | | | | | |
| 1 | 02 | 02 | 04 | 04 | | Integ Rack/Crate Mount Cntrls&Intra-Cables - S20 | 23-May-06 | 5-Jul-06 | S | C | SL_PCEF | Hrs | 270 | | 17,102 | | 17,102 |
| 1 | 02 | 02 | 04 | 04 | | Perform Pre-Install Testing Controls - S20 | 6-Jul-06 | 26-Jul-06 | S | C | SL_CCA | Hrs | 120 | | 8,083 | | 8,083 |
| **1** | **02** | **02** | **04** | **05** | | **Magnet Interlock Protection System** | | | | | | | | | | | |
| **1** | **02** | **02** | **05** | | | **LLRF Controls** | | | | | | | **4,220** | **241,196** | **342,193** | **265,662** | **607,855** |
| **1** | **02** | **02** | **05** | **01** | | **Readback & Controls - RF Gun LLRF & Temperature** | | | | | | | **1,250** | **40,044** | **100,913** | **44,106** | **145,019** |
| 1 | 02 | 02 | 05 | 01 | | Procure controls H/W (incl digitizer) and cables | 8-Aug-05 | 3-Nov-05 | S | L | SL_MSEG | $$ | | 40,044 | | 44,106 | 44,106 |
| 1 | 02 | 02 | 05 | 01 | | Write RF Software and Documentation - PED | 8-Aug-05 | 9-Nov-05 | | L | SL_CP | Hrs | 20 | | 1,841 | | 1,841 |
| 1 | 02 | 02 | 05 | 01 | | Build RF Hardware & Write Documentation | 9-May-06 | 3-Aug-06 | | C | SL_CCA | Hrs | 60 | | 4,042 | | 4,042 |
| 1 | 02 | 02 | 05 | 01 | | Write RF Software and Documentation - CONST | 10-Nov-05 | 6-Jun-06 | | C | SL_CP | Hrs | 60 | | 5,611 | | 5,611 |
| 1 | 02 | 02 | 05 | 01 | | Integrate & Test RF Control | 7-Jun-06 | 18-Sep-06 | | C | SL_CP | Hrs | 560 | | 52,371 | | 52,371 |
| 1 | 02 | 02 | 05 | 01 | | Integrate & Test RF Control | 7-Jun-06 | 18-Sep-06 | | C | SL_CCA | Hrs | 550 | | 37,048 | | 37,048 |
| **1** | **02** | **02** | **05** | **02** | | **Readback & Controls - L0 LLRF** | | | | | | | **1,195** | **80,554** | **97,160** | **88,725** | **185,885** |
| 1 | 02 | 02 | 05 | 02 | | Procure Controls H/W (incl Digitizer) and Cables | 8-Aug-05 | 3-Nov-05 | S | L | SL_MSEG | $$ | | 40,044 | | 44,106 | 44,106 |
| 1 | 02 | 02 | 05 | 02 | | Build RF Control H/W and Write Docmntn - PED | 20-Sep-05 | 2-Mar-06 | | L | SL_CCA | Hrs | 31 | | 2,083 | | 2,083 |
| 1 | 02 | 02 | 05 | 02 | | Build RF Control H/W and Write Docmntn - CONST | 9-May-06 | 26-Mar-07 | | C | SL_CCA | Hrs | 64 | | 4,370 | | 4,370 |
| 1 | 02 | 02 | 05 | 02 | | Write RF Control S/W and Docmntn | 8-Aug-05 | 16-Nov-06 | | L | SL_CP | Hrs | 60 | | 5,608 | | 5,608 |
| 1 | 02 | 02 | 05 | 02 | | Integrate and Test LLRF L0-1 | 27-Mar-07 | 27-Apr-07 | | C | SL_CP | Hrs | 240 | | 23,028 | | 23,028 |
| 1 | 02 | 02 | 05 | 02 | | Integrate and Test LLRF L0-1 | 27-Mar-07 | 27-Apr-07 | | C | SL_CCA | Hrs | 220 | | 15,204 | | 15,204 |
| 1 | 02 | 02 | 05 | 02 | | Procure Controls H/W (incl Digitizer) and Cables | 8-Aug-05 | 3-Nov-05 | S | L | SL_MSEG | $$ | | 40,510 | | 44,619 | 44,619 |
| 1 | 02 | 02 | 05 | 02 | | Build RF Hardware and Write Documentation | 14-Nov-05 | 16-Feb-06 | | L | SL_CCA | Hrs | 60 | | 4,042 | | 4,042 |
| 1 | 02 | 02 | 05 | 02 | | Write RF Software Documentation | 8-Aug-05 | 8-Feb-06 | | L | SL_CP | Hrs | 60 | | 5,561 | | 5,561 |
| 1 | 02 | 02 | 05 | 02 | | Integrate and Test LLRF L0-2 | 17-Feb-06 | 23-Mar-06 | | L | SL_CP | Hrs | 240 | | 22,445 | | 22,445 |
| 1 | 02 | 02 | 05 | 02 | | Integrate and Test LLRF L0-2 | 17-Feb-06 | 23-Mar-06 | | L | SL_CCA | Hrs | 220 | | 14,819 | | 14,819 |
| **1** | **02** | **02** | **05** | **03** | | **Readback & Controls - Transverse Cavity LLRF** | | | | | | | **615** | **40,510** | **50,489** | **44,619** | **95,108** |
| 1 | 02 | 02 | 05 | 03 | | Procure Contros H/W (incl Digitizer) and Cables | 8-Aug-05 | 3-Nov-05 | S | L | SL_MSEG | $$ | | 40,510 | | 44,619 | 44,619 |
| 1 | 02 | 02 | 05 | 03 | | Build RF Hardware and Write Documentation | 14-Nov-05 | 14-Nov-05 | | C | SL_CCA | Hrs | 45 | | 3,031 | | 3,031 |
| 1 | 02 | 02 | 05 | 03 | | Write RF Sortware and Documentation | 8-Aug-05 | 8-Feb-06 | | L | SL_CP | Hrs | 110 | | 10,194 | | 10,194 |
| 1 | 02 | 02 | 05 | 03 | | Integrate and Test RF Control | 15-Nov-05 | 16-Feb-06 | | C | SL_CP | Hrs | 240 | | 22,445 | | 22,445 |
| 1 | 02 | 02 | 05 | 03 | | Integrate and Test RF Control | 15-Nov-05 | 16-Feb-06 | | C | SL_CCA | Hrs | 220 | | 14,819 | | 14,819 |
| **1** | **02** | **02** | **05** | **04** | | **S-Band Cavity Controls** | | | | | | | **1,160** | **80,088** | **93,631** | **88,212** | **181,843** |
| 1 | 02 | 02 | 05 | 04 | | Procure Controls H/W (incl Digitizer) and Cables | 8-Aug-05 | 3-Nov-05 | S | L | SL_MSEG | $$ | | 40,044 | | 44,106 | 44,106 |
| 1 | 02 | 02 | 05 | 04 | | Build RF Hardware and Write Documentation | 4-Nov-05 | 8-Feb-06 | | L | SL_CCA | Hrs | 60 | | 4,042 | | 4,042 |
| 1 | 02 | 02 | 05 | 04 | | Write RF Software and Documentation | 8-Aug-05 | 8-Aug-05 | | L | SL_CP | Hrs | 60 | | 5,458 | | 5,458 |
| 1 | 02 | 02 | 05 | 04 | | Integrate and Test RF Control | 9-Feb-06 | 16-Mar-06 | | L | SL_CP | Hrs | 240 | | 22,445 | | 22,445 |
| 1 | 02 | 02 | 05 | 04 | | Integrate and Test RF Control | 9-Feb-06 | 16-Mar-06 | | L | SL_CCA | Hrs | 220 | | 14,819 | | 14,819 |
| 1 | 02 | 02 | 05 | 04 | | Procure Controls H/W (incl Digitizer) and Cables | 8-Aug-05 | 3-Nov-05 | S | L | SL_MSEG | $$ | | 40,044 | | 44,106 | 44,106 |
| 1 | 02 | 02 | 05 | 04 | | Build RF Hardware and Write Documentation | 4-Nov-05 | 8-Feb-06 | | L | SL_CCA | Hrs | 60 | | 4,042 | | 4,042 |
| 1 | 02 | 02 | 05 | 04 | | Write RF Software and Documentation | 8-Aug-05 | 8-Feb-06 | | L | SL_CP | Hrs | 60 | | 5,561 | | 5,561 |
| 1 | 02 | 02 | 05 | 04 | | Integrate and Test RF Control | 9-Feb-06 | 16-Mar-06 | | L | SL_CP | Hrs | 240 | | 22,445 | | 22,445 |
| 1 | 02 | 02 | 05 | 04 | | Integrate and Test RF Control | 9-Feb-06 | 16-Mar-06 | | L | SL_CCA | Hrs | 220 | | 14,819 | | 14,819 |
| **1** | **02** | **02** | **05** | **05** | | **EO Phase Controls** | | | | | | | | | | | |
| **1** | **02** | **02** | **06** | | | **E-Beam Diagnostics Controls** | | | | | | | **3,583** | **250,686** | **286,420** | **281,340** | **567,760** |
| **1** | **02** | **02** | **06** | **01** | | **Controls - Wire Scanners** | | | | | | | | | | | |
| **1** | **02** | **02** | **06** | **02** | | **Controls - BPM** | | | | | | | **406** | **100,340** | **32,970** | **111,277** | **144,247** |
| 1 | 02 | 02 | 06 | 02 | | Proc 21 sets BPM Controls H/W and Cables | 2-Sep-05 | 29-Nov-05 | S | L | SL_MSEG | $$ | | 95,340 | | 105,827 | 105,827 |
| 1 | 02 | 02 | 06 | 02 | | Build H/W and Write Docmntn BPMs (21) | 5-Dec-05 | 2-Oct-06 | | L | SL_CP | Hrs | 48 | | 4,490 | | 4,490 |
| 1 | 02 | 02 | 06 | 02 | | Build H/W and Write Docmntn BPMs (21) | 5-Dec-05 | 2-Oct-06 | | L | SL_CCA | Hrs | 88 | | 5,928 | | 5,928 |
| 1 | 02 | 02 | 06 | 02 | | Integrate and Test BPM Controls | 3-Oct-06 | 23-Jul-07 | | C | SL_CP | Hrs | 145 | | 13,913 | | 13,913 |
| 1 | 02 | 02 | 06 | 02 | | Integrate and Test BPM Controls | 3-Oct-06 | 23-Jul-07 | | C | SL_CCA | Hrs | 125 | | 8,639 | | 8,639 |
| 1 | 02 | 02 | 06 | 02 | | Procure BLM Controls Hdwr/Eq | 2-Sep-05 | 30-Sep-05 | S | L | SL_MSEG | $$ | | 5,000 | | 5,450 | 5,450 |
| **1** | **02** | **02** | **06** | **03** | | **Controls - Toroids** | | | | | | | **616** | **26,191** | **49,550** | **30,120** | **79,670** |
| 1 | 02 | 02 | 06 | 03 | | Procure 5 Sets Toroid Contrls H/W and Cables | 2-Oct-06 | 30-Nov-06 | S | L | SL_MSEG | $$ | | 26,191 | | 30,120 | 30,120 |
| 1 | 02 | 02 | 06 | 03 | | Build Toroid Hardware and Write Documentatin | 14-Mar-07 | 17-May-07 | | C | SL_CCA | Hrs | 56 | | 3,870 | | 3,870 |
| 1 | 02 | 02 | 06 | 03 | | Write Toroid Software and Documentation | 25-Oct-06 | 17-Jan-07 | | L | SL_CP | Hrs | 80 | | 7,676 | | 7,676 |
| 1 | 02 | 02 | 06 | 03 | | Integrate Software and Hardware | 18-May-07 | 12-Jul-07 | | C | SL_CP | Hrs | 180 | | 17,271 | | 17,271 |
| 1 | 02 | 02 | 06 | 03 | | Integrate Software and Hardware | 18-May-07 | 12-Jul-07 | | C | SL_CCA | Hrs | 300 | | 20,733 | | 20,733 |
| **1** | **02** | **02** | **06** | **05** | | **Controls - Profile Monitors** | | | | | | | **1,344** | **82,686** | **106,195** | **92,254** | **198,449** |
| 1 | 02 | 02 | 06 | 05 | | Proc 11 sets Profile Mntr Cntrls H/W & Cables | 23-Sep-05 | 21-Nov-05 | S | L | SL_MSEG | $$ | | 82,686 | | 92,254 | 92,254 |
| 1 | 02 | 02 | 06 | 05 | | Build H/W and Write Docmntn Profile Monitor (11) | 22-Nov-05 | 11-Aug-06 | | C | SL_CCA | Hrs | 504 | | 33,949 | | 33,949 |
| 1 | 02 | 02 | 06 | 05 | | Write S/W and Docmntn Profile Monitors (11) | 23-Sep-05 | 11-Aug-06 | | L | SL_CP | Hrs | 120 | | 11,214 | | 11,214 |
| 1 | 02 | 02 | 06 | 05 | | Integrate and Test Profile Monitors | 2-Oct-06 | 20-Apr-07 | | C | SL_CP | Hrs | 420 | | 40,299 | | 40,299 |
| 1 | 02 | 02 | 06 | 05 | | Integrate and Test Profile Monitors | 2-Oct-06 | 20-Apr-07 | | C | SL_CCA | Hrs | 300 | | 20,733 | | 20,733 |
| **1** | **02** | **02** | **06** | **06** | | **Controls - E/O Diagnostics** | | | | | | | **421** | **-** | **32,280** | **-** | **32,280** |
| 1 | 02 | 02 | 06 | 06 | | Build H/W and Write Docmntn for E/O Diagnostics | 18-Jul-06 | 7-Dec-06 | | C | SL_CCA | Hrs | 97 | | 6,614 | | 6,614 |

| WBS Level | | | | | | LCLA DCE March-2005 | Early | Early | OBS | Fund | Res | Units | Budgeted Quantity | | Fully Burdened and Escalated Cost | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Run Time: 4/2205 8:43am | | | | | | Description | Start | Finish | | Type | Code | | Hours | $$ | Labor | M&S | Total (No Conting) |
| 1 | 2 | 3 | 4 | 5 | 6 | | | | | | | | | | | | |
| 1 | 02 | 02 | 06 | 06 | | Write S/W and Docmtn E/O Diagnostics | 2-Oct-06 | 9-Mar-07 | | C | SL_CP | Hrs | 40 | | 3,838 | | 3,838 |
| 1 | 02 | 02 | 06 | 06 | | Integrate and Test E/O Diagnostics Controls H/W | 8-Dec-06 | 20-Jun-07 | | C | SL_CP | Hrs | 82 | | 7,868 | | 7,868 |
| 1 | 02 | 02 | 06 | 06 | | Integrate and Test E/O Diagnostics Controls H/W | 8-Dec-06 | 20-Jun-07 | | C | SL_CCA | Hrs | 202 | | 13,960 | | 13,960 |
| **1** | **02** | **02** | **06** | **14** | | **Controls - Faraday Cups** | | | | | | | **700** | **38,169** | **57,105** | **43,894** | **100,999** |
| 1 | 02 | 02 | 06 | 14 | | Procure 4 Sets Faraday Cup Controls H/W & Cables | 2-Oct-06 | 30-Nov-06 | S | L | SL_MSEG | $$ | | 38,169 | | 43,894 | 43,894 |
| 1 | 02 | 02 | 06 | 14 | | Build H/W and Write Docmtn Faraday Cup Cntrl (4) | 1-Dec-06 | 1-Dec-06 | | C | SL_CCA | Hrs | 80 | | 5,529 | | 5,529 |
| 1 | 02 | 02 | 06 | 14 | | Write S/W and Docmtn Faraday Cup Control (4) | 23-Sep-05 | 23-Sep-05 | | L | SL_CP | Hrs | 80 | | 7,278 | | 7,278 |
| 1 | 02 | 02 | 06 | 14 | | Integrate and Test Faraday Cup Control (4) | 4-Dec-06 | 23-Jan-07 | | C | SL_CP | Hrs | 260 | | 24,947 | | 24,947 |
| 1 | 02 | 02 | 06 | 14 | | Integrate and Test Faraday Cup Control (4) | 4-Dec-06 | 23-Jan-07 | | C | SL_CCA | Hrs | 280 | | 19,351 | | 19,351 |
| **1** | **02** | **02** | **06** | **15** | | **Controls - Tune-Up Dump** | | | | | | | **96** | **3,300** | **8,320** | **3,795** | **12,115** |
| 1 | 02 | 02 | 06 | 15 | | Procure 1 set Tune-up Dump Controls H/W | 2-Oct-06 | 30-Nov-06 | S | L | SL_MSEG | $$ | | 3,300 | | 3,795 | 3,795 |
| 1 | 02 | 02 | 06 | 15 | | Write S/W - Tune-Up Dump Controls | 2-Oct-06 | 9-Mar-07 | S | L | SL_CP | Hrs | 40 | | 3,838 | | 3,838 |
| 1 | 02 | 02 | 06 | 15 | | Write Docs - Tune-Up Dump Controls | 2-Oct-06 | 9-Mar-07 | S | L | SL_CP | Hrs | 8 | | 768 | | 768 |
| 1 | 02 | 02 | 06 | 15 | | Write Docs - Tune-Up Dump Controls | 2-Oct-06 | 9-Mar-07 | S | L | SL_CCA | Hrs | 8 | | 553 | | 553 |
| 1 | 02 | 02 | 06 | 15 | | Assemble Tune-up Dump Controls | 1-Dec-06 | 14-Feb-07 | S | L | SL_PCEF | Hrs | 8 | | 520 | | 520 |
| 1 | 02 | 02 | 06 | 15 | | Integrate and Test Tune Up Dump | 12-Mar-07 | 18-Apr-07 | | C | SL_CP | Hrs | 16 | | 1,535 | | 1,535 |
| 1 | 02 | 02 | 06 | 15 | | Integrate and Test Tune Up Dump | 12-Mar-07 | 18-Apr-07 | | C | SL_CCA | Hrs | 16 | | 1,106 | | 1,106 |
| **1** | **02** | **02** | **06** | **16** | | **Diagnostics Controls Integration** | | | | | | | | | | | |
| **1** | **02** | **02** | **08** | | | **Timing Controls** | | | | | | | **-** | **59,100** | **-** | **67,965** | **67,965** |
| 1 | 02 | 02 | 08 | | | Procure Master & Distributed Timing Controls H/W | 2-Oct-06 | 16-Jan-07 | S | L | SL_MSEG | $$ | | 59,100 | | 67,965 | 67,965 |
| **1** | **02** | **02** | **09** | | | **Vacuum Controls** | | | | | | | **310** | **128,770** | **26,255** | **148,086** | **174,341** |
| 1 | 02 | 02 | 09 | | | Procure Vacuum Controls Hardware and Cables | 2-Oct-06 | 16-Jan-07 | S | L | SL_MSEG | $$ | | 128,770 | | 148,086 | 148,086 |
| 1 | 02 | 02 | 09 | | | Build Vacuum H/W and Write Docmntn | 17-Jan-07 | 5-Feb-07 | | C | SL_CCA | Hrs | 10 | | 691 | | 691 |
| 1 | 02 | 02 | 09 | | | Write Vacuum Documentation | 2-Oct-06 | 9-Mar-07 | S | L | SL_CP | Hrs | 40 | | 3,838 | | 3,838 |
| 1 | 02 | 02 | 09 | | | Integration and Test Vacuum Controls | 6-Feb-07 | 15-Aug-07 | | C | SL_CP | Hrs | 140 | | 13,433 | | 13,433 |
| 1 | 02 | 02 | 09 | | | Integration and Test Vacuum Controls | 6-Feb-07 | 15-Aug-07 | | C | SL_CCA | Hrs | 120 | | 8,293 | | 8,293 |
| **1** | **02** | **02** | **10** | | | **Software & Controls Infrastructure** | | | | | | | **248** | **184,250** | **16,763** | **211,888** | **228,651** |
| **1** | **02** | **02** | **10** | **01** | | **Low Level Application Software** | | | | | | | | | | | |
| **1** | **02** | **02** | **10** | **02** | | **High Level Application Software** | | | | | | | | | | | |
| **1** | **02** | **02** | **10** | **03** | | **Data Communications** | | | | | | | **248** | **30,850** | **16,763** | **35,478** | **52,241** |
| 1 | 02 | 02 | 10 | 03 | | Supervision of installation | 2-May-05 | 13-Jun-05 | S | L | SL_CCA | Hrs | 90 | | 5,898 | | 5,898 |
| 1 | 02 | 02 | 10 | 03 | | SEM Installtn (wall barrd & two 20 A circuits) | 2-May-05 | 21-Sep-05 | | L | SL_TMUE | Hrs | 16 | | 1,541 | | 1,541 |
| 1 | 02 | 02 | 10 | 03 | | SEM Installtn (wall barrd & two 20 A circuits) | 2-May-05 | 21-Sep-05 | | L | SL_TMUC | Hrs | 2 | | 150 | | 150 |
| 1 | 02 | 02 | 10 | 03 | | SEM Installtn (wall barrd & two 20 A circuits) | 2-May-05 | 21-Sep-05 | | L | SL_CCA | Hrs | 140 | | 9,174 | | 9,174 |
| 1 | 02 | 02 | 10 | 03 | | Procure singlemode fiber | 2-Oct-06 | 16-Jan-07 | S | L | SL_MSEG | $$ | | 11,250 | | 12,938 | 12,938 |
| 1 | 02 | 02 | 10 | 03 | | Fiber termination | 17-Jan-07 | 16-Apr-07 | S | L | SL_MSPS | $$ | | 3,600 | | 4,140 | 4,140 |
| 1 | 02 | 02 | 10 | 03 | | Procure Cisco 3550-24 hubs (4) | 2-Oct-06 | 30-Oct-06 | S | C | SL_MSEG | $$ | | 16,000 | | 18,400 | 18,400 |
| **1** | **02** | **02** | **10** | **04** | | **Computers & Crates** | | | | | | | **-** | **153,400** | **-** | **176,410** | **176,410** |
| 1 | 02 | 02 | 10 | 04 | | Procure Infrastructure Comp, Crates H/W & Cable | 2-Oct-06 | 16-Jan-07 | S | L | SL_MSEG | $$ | | 153,400 | | 176,410 | 176,410 |
| **1** | **02** | **02** | **11** | | | **EPICS VXI Control Modules (Moved to R&D)** | | | | | | | | | | | |
| **1** | **02** | **02** | **12** | | | **Laser Controls** | | | | | | | **454** | **78,026** | **36,784** | **85,866** | **122,650** |
| **1** | **02** | **02** | **12** | **01** | | **Controls - Alignment Laser** | | | | | | | | | | | |
| **1** | **02** | **02** | **12** | **02** | | **Controls - Gun Laser** | | | | | | | **454** | **78,026** | **36,784** | **85,866** | **122,650** |
| 1 | 02 | 02 | 12 | 02 | | Procure 1 set Gun Laser Controls H/W | 4-Aug-05 | 1-Nov-05 | S | L | SL_MSEG | $$ | | 78,026 | | 85,866 | 85,866 |
| 1 | 02 | 02 | 12 | 02 | | Integrate and Test Gun Laser Controls | 2-Nov-05 | 11-Apr-06 | | C | SL_PCEF | Hrs | 84 | | 5,321 | | 5,321 |
| 1 | 02 | 02 | 12 | 02 | | Integrate and Test Gun Laser Controls | 2-Nov-05 | 11-Apr-06 | | C | SL_CP | Hrs | 250 | | 23,380 | | 23,380 |
| 1 | 02 | 02 | 12 | 02 | | Integrate and Test Gun Laser Controls | 2-Nov-05 | 11-Apr-06 | | C | SL_CCA | Hrs | 120 | | 8,083 | | 8,083 |
| **1** | **02** | **02** | **13** | | | **Laser Heater Controls** | | | | | | | **484** | **13,200** | **40,887** | **15,180** | **56,067** |
| 1 | 02 | 02 | 13 | | | Procure 1 set Laser Heater Controls H/W | 2-Oct-06 | 16-Jan-07 | S | C | SL_MSEG | $$ | | 13,200 | | 15,180 | 15,180 |
| 1 | 02 | 02 | 13 | | | Integrate and Test Laser Heater Controls | 17-Jan-07 | 7-Jun-07 | | C | SL_PCEF | Hrs | 84 | | 5,459 | | 5,459 |
| 1 | 02 | 02 | 13 | | | Integrate and Test Laser Heater Controls | 17-Jan-07 | 7-Jun-07 | | C | SL_CP | Hrs | 290 | | 27,826 | | 27,826 |
| 1 | 02 | 02 | 13 | | | Integrate and Test Laser Heater Controls | 17-Jan-07 | 7-Jun-07 | | C | SL_CCA | Hrs | 110 | | 7,602 | | 7,602 |
| **1** | **03** | **02** | | | | **Linac Controls & Power Conversion Subsystem** | | | | | | | **26,208** | **3,102,237** | **2,265,426** | **3,500,345** | **5,765,771** |
| **1** | **03** | **02** | **01** | | | **Personnel Protection System (PPS)** | | | | | | | **1,816** | **228,720** | **180,718** | **260,663** | **441,381** |
| 1 | 03 | 02 | 01 | | | Procure PPS BSOIC Mounting Hardware/Material | 23-May-06 | 6-Jun-06 | S | C | SL_MSEG | $$ | | 800 | | 896 | 896 |
| 1 | 03 | 02 | 01 | | | Prep Bid Pak - BSOIC Rad Monitor ADM-600 Series | 23-May-06 | 6-Jun-06 | S | C | SL_CE | Hrs | 8 | | 925 | | 925 |
| 1 | 03 | 02 | 01 | | | Evaluate Proposals - BSOIC Rad Monitor ADM-600 S | 28-Jun-06 | 12-Jul-06 | S | C | SL_CE | Hrs | 20 | | 2,313 | | 2,313 |
| 1 | 03 | 02 | 01 | | | Vendor Fab/Assy - BSOIC Rad Monitor ADM-600 Seri | 2-Oct-06 | 2-Jul-07 | S | C | SA_MSEG | $$ | | 140,000 | | 161,000 | 161,000 |
| 1 | 03 | 02 | 01 | | | Fab/Assy - BSOIC Mounting Hardware (15) | 2-Oct-06 | 26-Sep-07 | S | C | SL_MFMS | Hrs | 1,200 | | 127,056 | | 127,056 |
| 1 | 03 | 02 | 01 | | | Fab and Pre Assemble Components (as required) | 27-Sep-07 | 24-Oct-07 | S | C | SL_CT | Hrs | 12 | | 798 | | 798 |
| 1 | 03 | 02 | 01 | | | Perform PPS BSOIC Pre-Installation Qual Test | 25-Oct-07 | 21-Nov-07 | S | C | SL_CT | Hrs | 40 | | 2,667 | | 2,667 |
| 1 | 03 | 02 | 01 | | | Prep Bid Pak - PLC Access Cntrl Sys Electronics | 13-Jan-06 | 20-Jan-06 | S | C | SL_CE | Hrs | 8 | | 925 | | 925 |
| 1 | 03 | 02 | 01 | | | Evaluate Proposals - PLC Access Cntrl Sys Electr | 21-Feb-06 | 27-Feb-06 | S | C | SL_CE | Hrs | 8 | | 925 | | 925 |
| 1 | 03 | 02 | 01 | | | Vendor Fab/Assy - PLC Access Cntrl Sys Electroni | 1-Mar-06 | 13-Oct-06 | S | C | SA_MSEG | $$ | | 50,000 | | 56,094 | 56,094 |

| WBS Level | | | | | | LCLA DCE March-2005 | Early | Early | OBS | Fund | Res | Units | Budgeted Quantity | | Fully Burdened and Escalated Cost | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Run Time: 4/2205 8:43am | | | | | | Description | Start | Finish | | Type | Code | | Hours | $$ | Labor | M&S | Total (No Conting) |
| 1 | 2 | 3 | 4 | 5 | 6 | | | | | | | | | | | | |
| 1 | 03 | 02 | 01 | | | Fab, Pre Assemble and Qual Test PPS Component | 16-Oct-06 | 12-Dec-06 | | C | SL_CT | Hrs | 120 | | 7,799 | | 7,799 |
| 1 | 03 | 02 | 01 | | | Fab, Pre Assemble and Qual Test PPS Component | 16-Oct-06 | 12-Dec-06 | | C | SL_CCA | Hrs | 40 | | 2,764 | | 2,764 |
| 1 | 03 | 02 | 01 | | | Procure PPS Maze/Gate Hdwr/Matl/Switch/Latch/Sol | 10-Apr-06 | 5-May-06 | S | C | SL_MSEG | $$ | | 920 | | 1,030 | 1,030 |
| 1 | 03 | 02 | 01 | | | Fab/PreAssy PPS Maze/Gate Hdwr/Matl/Switch/Latch | 8-May-06 | 1-Aug-06 | S | C | SL_CT | Hrs | 40 | | 2,534 | | 2,534 |
| 1 | 03 | 02 | 01 | | | Procure Cable PPS Maze/Gate Cableplant | 3-Oct-06 | 11-Jan-07 | S | C | SL_MSEG | $$ | | 2,000 | | 2,300 | 2,300 |
| 1 | 03 | 02 | 01 | | | Evaluate Proposals - Mazes/Gates Access Control | 7-Mar-06 | 20-Mar-06 | S | C | SL_CE | Hrs | 40 | | 4,626 | | 4,626 |
| 1 | 03 | 02 | 01 | | | Vendor Fab/Assy - Mazes/Gates Access Cntrl Gates | 11-Apr-06 | 26-Oct-06 | S | C | SA_MSEG | $$ | | 35,000 | | 39,343 | 39,343 |
| 1 | 03 | 02 | 01 | | | Write Software & Documentation to Integrate PPS | 13-Jan-06 | 13-Mar-06 | S | C | SL_CP | Hrs | 160 | | 14,963 | | 14,963 |
| 1 | 03 | 02 | 01 | | | Integrate and Test PPS | 12-Jan-07 | 26-Jan-07 | S | C | SL_CP | Hrs | 80 | | 7,676 | | 7,676 |
| 1 | 03 | 02 | 01 | | | Integrate and Test PPS | 12-Jan-07 | 26-Jan-07 | S | C | SL_CE | Hrs | 40 | | 4,747 | | 4,747 |
| **1** | **03** | **02** | **02** | | | **Beam Containment System (BCS)** | | | | | | | **307** | **11,300** | **29,086** | **12,996** | **42,082** |
| 1 | 03 | 02 | 02 | | | Procure BCS PLIC/LION System HV Power Supply Cha | 3-Oct-06 | 23-Oct-06 | S | C | SL_MSEG | $$ | | 800 | | 920 | 920 |
| 1 | 03 | 02 | 02 | | | Procure Gas System - BCS PLIC/LION Regulators/Fi | 3-Oct-06 | 23-Oct-06 | S | C | SL_MSEG | $$ | | 250 | | 288 | 288 |
| 1 | 03 | 02 | 02 | | | Procure BCS PLIC/LION Gas Bottle(s) & Bottle(s | 3-Oct-06 | 31-Oct-06 | S | C | SL_MSEG | $$ | | 250 | | 288 | 288 |
| 1 | 03 | 02 | 02 | | | Procure BCS PLIC/LION Cableplant Heliax, Andre | 3-Oct-06 | 31-Oct-06 | S | C | SA_MSEG | $$ | | 10,000 | | 11,500 | 11,500 |
| 1 | 03 | 02 | 02 | | | Prep Bid Pak - BCS PLIC/LION Cableplant | 3-Oct-06 | 9-Oct-06 | S | C | SL_CE | Hrs | 2 | | 237 | | 237 |
| 1 | 03 | 02 | 02 | | | Evaluate Proposals - BCS PLIC/LION Cableplant | 17-Oct-06 | 23-Oct-06 | S | C | SL_CE | Hrs | 1 | | 119 | | 119 |
| 1 | 03 | 02 | 02 | | | Perform Pre-Installation Qual Test on BCS LTU | 1-Nov-06 | 30-Nov-06 | S | C | SL_CCA | Hrs | 24 | | 1,659 | | 1,659 |
| 1 | 03 | 02 | 02 | | | Write S/W and Documentation to Integrate BCS | 3-Oct-05 | 11-Nov-05 | S | C | SL_CP | Hrs | 160 | | 14,963 | | 14,963 |
| 1 | 03 | 02 | 02 | | | Integrate and Test BCS | 14-Nov-05 | 29-Nov-05 | S | C | SL_CP | Hrs | 80 | | 7,482 | | 7,482 |
| 1 | 03 | 02 | 02 | | | Integrate and Test BCS | 14-Nov-05 | 29-Nov-05 | S | C | SL_CE | Hrs | 40 | | 4,626 | | 4,626 |
| **1** | **03** | **02** | **03** | | | **Machine Protection System (MPS)** | | | | | | | **469** | **38,840** | **44,161** | **43,500** | **87,661** |
| 1 | 03 | 02 | 03 | | | Prep Bid Pak - PIC Modules | 3-Oct-05 | 21-Oct-05 | S | C | SL_CE | Hrs | 8 | | 925 | | 925 |
| 1 | 03 | 02 | 03 | | | Prep Assy Pak - TC Reference Planes Modules | 24-Oct-05 | 11-Nov-05 | S | C | SL_CE | Hrs | 8 | | 925 | | 925 |
| 1 | 03 | 02 | 03 | | | Evaluate Proposals - PIC Modules | 14-Dec-05 | 11-Jan-06 | S | C | SL_CE | Hrs | 40 | | 4,626 | | 4,626 |
| 1 | 03 | 02 | 03 | | | Vendor Fab/Assy - PIC Modules | 13-Jan-06 | 5-Jul-06 | S | C | SA_MSEG | $$ | | 12,000 | | 13,440 | 13,440 |
| 1 | 03 | 02 | 03 | | | Procure TC Reference Plane material (as required | 3-Oct-05 | 28-Oct-05 | S | C | SL_MSEG | $$ | | 920 | | 1,030 | 1,030 |
| 1 | 03 | 02 | 03 | | | Fab and Pre Assemble TC Ref. Planes (as required | 31-Oct-05 | 29-Nov-05 | S | C | SL_PCEF | Hrs | 40 | | 2,534 | | 2,534 |
| 1 | 03 | 02 | 03 | | | Procure Cable TC Reference Plane material | 3-Oct-05 | 28-Oct-05 | S | C | SL_MSEG | $$ | | 920 | | 1,030 | 1,030 |
| 1 | 03 | 02 | 03 | | | Fab Cable, Coax, PIC Module to PIC Detector (6) | 31-Oct-05 | 29-Nov-05 | S | C | SL_PCEF | Hrs | 6 | | 380 | | 380 |
| 1 | 03 | 02 | 03 | | | Fab Cable, Coax, HV P.S. to PIC Detector (6) | 31-Oct-05 | 29-Nov-05 | S | C | SL_PCEF | Hrs | 6 | | 380 | | 380 |
| 1 | 03 | 02 | 03 | | | Fab Cable,1553, PIC Module Chain to VME A.P. Cra | 31-Oct-05 | 29-Nov-05 | S | C | SL_PCEF | Hrs | 3 | | 190 | | 190 |
| 1 | 03 | 02 | 03 | | | Fab Cable,8/C, HV P.S. to X-connects (P.S. Statu | 31-Oct-05 | 29-Nov-05 | S | C | SL_PCEF | Hrs | 2 | | 127 | | 127 |
| 1 | 03 | 02 | 03 | | | Fab Cable,4/C, HV P.S. to X-connects (HV Enable) | 31-Oct-05 | 29-Nov-05 | S | C | SL_PCEF | Hrs | 2 | | 127 | | 127 |
| 1 | 03 | 02 | 03 | | | Fab and Pre Assemble PIC Components (as reqd) | 30-Nov-05 | 11-Jan-06 | S | C | SL_PCEF | Hrs | 10 | | 633 | | 633 |
| 1 | 03 | 02 | 03 | | | Perform Pre-Installation Qual Test on Linac MPS | 6-Jul-06 | 2-Aug-06 | S | C | SL_CCA | Hrs | 24 | | 1,617 | | 1,617 |
| 1 | 03 | 02 | 03 | | | Evaluate Proposals - BSOIC | 21-Nov-05 | 6-Dec-05 | S | C | SL_CE | Hrs | 40 | | 4,626 | | 4,626 |
| 1 | 03 | 02 | 03 | | | Vendor Fab/Assy - BSOIC | 8-Dec-05 | 15-May-06 | S | C | SA_MSEG | $$ | | 25,000 | | 28,000 | 28,000 |
| 1 | 03 | 02 | 03 | | | Write Software and Doc. to Integrate MPS | 16-May-06 | 12-Jul-06 | S | C | SL_CP | Hrs | 160 | | 14,963 | | 14,963 |
| 1 | 03 | 02 | 03 | | | Integrate and Test MPS Hardware and Software | 13-Jul-06 | 9-Aug-06 | S | C | SL_CP | Hrs | 80 | | 7,482 | | 7,482 |
| 1 | 03 | 02 | 03 | | | Integrate and Test MPS Hardware and Software | 13-Jul-06 | 9-Aug-06 | S | C | SL_CE | Hrs | 40 | | 4,626 | | 4,626 |
| **1** | **03** | **02** | **04** | | | **Linac Power Conversion Subsystem** | | | | | | | **10,893** | **1,061,789** | **875,686** | **1,212,960** | **2,088,646** |
| **1** | **03** | **02** | **04** | **00** | | **Linac Power Conversion Infrastructure** | | | | | | | | | | | |
| **1** | **03** | **02** | **04** | **01** | | **Beamline Power Supplies - (Dipole Type)** | | | | | | | **2,474** | **136,581** | **254,601** | **156,619** | **411,220** |
| 1 | 03 | 02 | 04 | 01 | | Finalize Power Conv Reqmts Definition (Dipole) | 11-Jul-05 | 15-Jul-05 | | P | SL_PCE | Hrs | 40 | | 4,500 | | 4,500 |
| 1 | 03 | 02 | 04 | 01 | | Dev Engr (43 instaces - 18 types) PED | 18-Jul-05 | 16-Dec-05 | | P | SL_PCE | Hrs | 409 | | 46,655 | | 46,655 |
| 1 | 03 | 02 | 04 | 01 | | Dev Engr (43 instaces - 18 types) CONST | 3-Jan-06 | 5-Jun-07 | | L | SL_PCE | Hrs | 1,337 | | 156,489 | | 156,489 |
| 1 | 03 | 02 | 04 | 01 | | Create System Drawings | 3-Jan-06 | 25-Jul-07 | | L | SL_PCCA | Hrs | 688 | | 46,957 | | 46,957 |
| **1** | **03** | **02** | **04** | **01** | **01** | **30KW PS - (B11-14)** | | | | | | | **-** | **14,937** | **-** | **16,729** | **16,729** |
| 1 | 03 | 02 | 04 | 01 | 01 | Procure 30kw Pwr Supply (B11-14) - Hardware | 3-Oct-05 | 10-Mar-06 | S | C | SL_MSEG | $$ | | 14,937 | | 16,729 | 16,729 |
| **1** | **03** | **02** | **04** | **01** | **02** | **B21-26** | | | | | | | **-** | **23,394** | **-** | **26,903** | **26,903** |
| 1 | 03 | 02 | 04 | 01 | 02 | Procure 78kw Pwr Supply (B21-26) - Hardware | 3-Oct-06 | 12-Mar-07 | S | C | SL_MSEG | $$ | | 23,394 | | 26,903 | 26,903 |
| **1** | **03** | **02** | **04** | **01** | **03** | **78KW PS - (B31-34)** | | | | | | | **-** | **23,394** | **-** | **26,903** | **26,903** |
| 1 | 03 | 02 | 04 | 01 | 03 | Procure 78kw Pwr Supply 9B31-34) - Hardware | 3-Oct-06 | 12-Mar-07 | S | C | SL_MSEG | $$ | | 23,394 | | 26,903 | 26,903 |
| **1** | **03** | **02** | **04** | **01** | **04** | **X-Band Modulator PS** | | | | | | | | | | | |
| **1** | **03** | **02** | **04** | **01** | **05** | **BY1** | | | | | | | **-** | **10,482** | **-** | **12,054** | **12,054** |
| 1 | 03 | 02 | 04 | 01 | 05 | Procure Power Supply (BY1) - Hardware | 3-Oct-06 | 12-Mar-07 | S | C | SL_MSEG | $$ | | 10,482 | | 12,054 | 12,054 |
| **1** | **03** | **02** | **04** | **01** | **06** | **Kicker (BYBKIK)** | | | | | | | **-** | **40,980** | **-** | **47,127** | **47,127** |
| 1 | 03 | 02 | 04 | 01 | 06 | Prep Bid Package - Pwr Supply - Dipole Type | 10-Apr-07 | 16-Apr-07 | | C | SL_PCCA | Hrs | - | | - | | - |
| 1 | 03 | 02 | 04 | 01 | 06 | Evaluate Vendors Prep Proposals | 24-Apr-07 | 30-Apr-07 | | C | SL_PCCA | Hrs | - | | - | | - |
| 1 | 03 | 02 | 04 | 01 | 06 | Fab & Assy- Power Supply - (Dipole Type) | 2-May-07 | 21-Sep-07 | S | C | SA_MSEG | $$ | | 40,980 | | 47,127 | 47,127 |
| **1** | **03** | **02** | **04** | **01** | **07** | **30kw Pwr Supply - (BYW)** | | | | | | | | | | | |
| **1** | **03** | **02** | **04** | **01** | **08** | **78kw Pwr Supply - (Dump Bend)** | | | | | | | **-** | **23,394** | **-** | **26,903** | **26,903** |
| 1 | 03 | 02 | 04 | 01 | 08 | Procure 78kw Pwr Supply - (Dump Bend) | 3-Oct-06 | 12-Mar-07 | S | C | SL_MSEG | $$ | | 23,394 | | 26,903 | 26,903 |

| WBS Level | | | | | | LCLA DCE March-2005 | Early | Early | OBS | Fund | Res | Units | Budgeted Quantity | | Fully Burdened and Escalated Cost | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Run Time: 4/2205 8:43am | | | | | | Description | Start | Finish | | Type | Code | | Hours | $$ | Labor | M&S | Total (No Conting) |
| 1 | 2 | 3 | 4 | 5 | 6 | | | | | | | | | | | | |
| **1** | **03** | **02** | **04** | **01** | **09** | **100kw Pwr Supply - (Wiggler)** | | | | | | | | | | | |
| **1** | **03** | **02** | **04** | **02** | | **Beamline Power Supplies - (Quad Type)** | | | | | | | **52** | **351,141** | **5,721** | **403,101** | **408,822** |
| 1 | 03 | 02 | 04 | 02 | | Finalize Power Conv Reqmts Definition (Quad) | 11-Jul-05 | 15-Jul-05 | | P | SL_PCE | Hrs | 24 | | 2,700 | | 2,700 |
| 1 | 03 | 02 | 04 | 02 | | Conduct ES&H Review - (Quad Type) | 18-Jul-05 | 19-Jul-05 | | P | SL_PCE | Hrs | 24 | | 2,700 | | 2,700 |
| **1** | **03** | **02** | **04** | **02** | **01** | **2KW PS - (SEC-23)** | | | | | | | **-** | **11,537** | **-** | **13,268** | **13,268** |
| 1 | 03 | 02 | 04 | 02 | 01 | Procure 2kw Pwr Supply - (Sec 23) | 3-Oct-06 | 12-Mar-07 | S | C | SL_MSEG | $$ | | 11,537 | | 13,268 | 13,268 |
| **1** | **03** | **02** | **04** | **02** | **02** | **2KW PS - (SEC-24)** | | | | | | | **-** | **11,537** | **-** | **13,268** | **13,268** |
| 1 | 03 | 02 | 04 | 02 | 02 | Procure 2kw Pwr Supply - (Sec 24) | 3-Oct-06 | 12-Mar-07 | S | C | SL_MSEG | $$ | | 11,537 | | 13,268 | 13,268 |
| **1** | **03** | **02** | **04** | **02** | **03** | **2KW PS - (SEC-25)** | | | | | | | **-** | **11,537** | **-** | **13,268** | **13,268** |
| 1 | 03 | 02 | 04 | 02 | 03 | Procure 2kw Pwr Supply - (Sec 25) | 3-Oct-06 | 12-Mar-07 | S | C | SL_MSEG | $$ | | 11,537 | | 13,268 | 13,268 |
| **1** | **03** | **02** | **04** | **02** | **04** | **2KW PS - (SEC-26)** | | | | | | | **-** | **11,537** | **-** | **13,268** | **13,268** |
| 1 | 03 | 02 | 04 | 02 | 04 | Procure2kw Pwr Supply - (Sec 26) | 3-Oct-06 | 12-Mar-07 | S | C | SL_MSEG | $$ | | 11,537 | | 13,268 | 13,268 |
| **1** | **03** | **02** | **04** | **02** | **05** | **2KW PS - (SEC-27)** | | | | | | | **-** | **11,537** | **-** | **13,268** | **13,268** |
| 1 | 03 | 02 | 04 | 02 | 05 | Procure 2kw Pwr Supply - (Sec 27) | 3-Oct-06 | 12-Mar-07 | S | C | SL_MSEG | $$ | | 11,537 | | 13,268 | 13,268 |
| **1** | **03** | **02** | **04** | **02** | **06** | **2KW PS - (SEC-28)** | | | | | | | **-** | **11,537** | **-** | **13,268** | **13,268** |
| 1 | 03 | 02 | 04 | 02 | 06 | Procure 2kw Pwr Supply - (Sec 28) | 3-Oct-06 | 12-Mar-07 | S | C | SL_MSEG | $$ | | 11,537 | | 13,268 | 13,268 |
| **1** | **03** | **02** | **04** | **02** | **07** | **2KW PS - (SEC-29)** | | | | | | | **-** | **11,537** | **-** | **13,268** | **13,268** |
| 1 | 03 | 02 | 04 | 02 | 07 | Procure 2kw Pwr Supply - (Sec 29) | 3-Oct-06 | 12-Mar-07 | S | C | SL_MSEG | $$ | | 11,537 | | 13,268 | 13,268 |
| **1** | **03** | **02** | **04** | **02** | **08** | **10KW PS - (Q24701)** | | | | | | | **-** | **10,482** | **-** | **12,054** | **12,054** |
| 1 | 03 | 02 | 04 | 02 | 08 | Procure 10kw Pwr Supply - (Q24701) | 3-Oct-06 | 12-Mar-07 | S | C | SL_MSEG | $$ | | 10,482 | | 12,054 | 12,054 |
| **1** | **03** | **02** | **04** | **02** | **09** | **10KW PS - (QM21)** | | | | | | | **-** | **12,704** | **-** | **14,228** | **14,228** |
| 1 | 03 | 02 | 04 | 02 | 09 | Procure 10kw Pwr Supply (QM21) | 3-Oct-05 | 10-Mar-06 | S | C | SL_MSEG | $$ | | 12,704 | | 14,228 | 14,228 |
| **1** | **03** | **02** | **04** | **02** | **10** | **10KW PS - (QM22)** | | | | | | | | | | | |
| **1** | **03** | **02** | **04** | **02** | **11** | **10KW PS - (Q24901)** | | | | | | | **-** | **11,204** | **-** | **12,885** | **12,885** |
| 1 | 03 | 02 | 04 | 02 | 11 | Procure 10kw Pwr Supply (Q24901) | 3-Oct-06 | 12-Mar-07 | S | C | SL_MSEG | $$ | | 11,204 | | 12,885 | 12,885 |
| **1** | **03** | **02** | **04** | **02** | **12** | **10KW PS - (QM22)** | | | | | | | **-** | **11,204** | **-** | **12,548** | **12,548** |
| 1 | 03 | 02 | 04 | 02 | 12 | Procure 10kw Pwr Supply (QM22) | 3-Oct-05 | 10-Mar-06 | S | C | SL_MSEG | $$ | | 11,204 | | 12,548 | 12,548 |
| **1** | **03** | **02** | **04** | **02** | **13** | **QVM1** | | | | | | | **-** | **10,482** | **-** | **12,054** | **12,054** |
| 1 | 03 | 02 | 04 | 02 | 13 | Procure QVM1 Pwr Supply 10kw | 3-Oct-06 | 12-Mar-07 | S | C | SL_MSEG | $$ | | 10,482 | | 12,054 | 12,054 |
| **1** | **03** | **02** | **04** | **02** | **14** | **QVM2** | | | | | | | **-** | **10,482** | **-** | **12,054** | **12,054** |
| 1 | 03 | 02 | 04 | 02 | 14 | Procure QVM2 Pwr Supply 10kw | 3-Oct-06 | 12-Mar-07 | S | C | SL_MSEG | $$ | | 10,482 | | 12,054 | 12,054 |
| **1** | **03** | **02** | **04** | **02** | **15** | **QVM3** | | | | | | | **-** | **10,482** | **-** | **12,054** | **12,054** |
| 1 | 03 | 02 | 04 | 02 | 15 | Procure QVM3 Pwr Supply 10kw | 3-Oct-06 | 12-Mar-07 | S | C | SL_MSEG | $$ | | 10,482 | | 12,054 | 12,054 |
| **1** | **03** | **02** | **04** | **02** | **16** | **QVM4** | | | | | | | **-** | **10,482** | **-** | **12,054** | **12,054** |
| 1 | 03 | 02 | 04 | 02 | 16 | Procure QVM4 Pwr Supply 10kw | 3-Oct-06 | 12-Mar-07 | S | C | SL_MSEG | $$ | | 10,482 | | 12,054 | 12,054 |
| **1** | **03** | **02** | **04** | **02** | **17** | **QVB1** | | | | | | | **-** | **10,482** | **-** | **12,054** | **12,054** |
| 1 | 03 | 02 | 04 | 02 | 17 | Procure QVB1 Pwr Supply 10kw | 3-Oct-06 | 12-Mar-07 | S | C | SL_MSEG | $$ | | 10,482 | | 12,054 | 12,054 |
| **1** | **03** | **02** | **04** | **02** | **18** | **QDL1** | | | | | | | **-** | **10,482** | **-** | **12,054** | **12,054** |
| 1 | 03 | 02 | 04 | 02 | 18 | Procure QDL1 Pwr Supply 10kw | 3-Oct-06 | 12-Mar-07 | S | C | SL_MSEG | $$ | | 10,482 | | 12,054 | 12,054 |
| **1** | **03** | **02** | **04** | **02** | **19** | **QE31** | | | | | | | **-** | **9,245** | **-** | **10,632** | **10,632** |
| 1 | 03 | 02 | 04 | 02 | 19 | Procure Power Supply - (QE31) | 3-Oct-06 | 12-Mar-07 | S | C | SL_MSEG | $$ | | 9,245 | | 10,632 | 10,632 |
| **1** | **03** | **02** | **04** | **02** | **20** | **QEM1** | | | | | | | **-** | **12,704** | **-** | **14,610** | **14,610** |
| 1 | 03 | 02 | 04 | 02 | 20 | Procure Power Supply - (QEM1) | 3-Oct-06 | 12-Mar-07 | S | C | SL_MSEG | $$ | | 12,704 | | 14,610 | 14,610 |
| **1** | **03** | **02** | **04** | **02** | **21** | **QEM2** | | | | | | | **-** | **12,704** | **-** | **14,610** | **14,610** |
| 1 | 03 | 02 | 04 | 02 | 21 | Procure Power Supply - (QEM2) | 3-Oct-06 | 12-Mar-07 | S | C | SL_MSEG | $$ | | 12,704 | | 14,610 | 14,610 |
| **1** | **03** | **02** | **04** | **02** | **22** | **QEM3** | | | | | | | **-** | **12,704** | **-** | **14,610** | **14,610** |
| 1 | 03 | 02 | 04 | 02 | 22 | Procure Power Supply - (QEM3) | 3-Oct-06 | 12-Mar-07 | S | C | SL_MSEG | $$ | | 12,704 | | 14,610 | 14,610 |
| **1** | **03** | **02** | **04** | **02** | **23** | **QEM4** | | | | | | | **4** | **12,704** | **321** | **14,610** | **14,931** |
| 1 | 03 | 02 | 04 | 02 | 23 | Procure Power Supply - (QEM4) - 10kw | 3-Oct-06 | 12-Mar-07 | S | C | SL_MSEG | $$ | | 12,704 | | 14,610 | 14,610 |
| 1 | 03 | 02 | 04 | 02 | 23 | Integrate Magnet Interlock | 13-Mar-07 | 13-Mar-07 | S | C | SL_TMUI | Hrs | 4 | | 321 | | 321 |
| **1** | **03** | **02** | **04** | **02** | **24** | **QTm1** | | | | | | | **-** | **12,704** | **-** | **14,610** | **14,610** |
| 1 | 03 | 02 | 04 | 02 | 24 | Procure Power Supply - (QTm1) - 10kw | 3-Oct-06 | 12-Mar-07 | S | C | SL_MSEG | $$ | | 12,704 | | 14,610 | 14,610 |
| **1** | **03** | **02** | **04** | **02** | **25** | **QTm2** | | | | | | | **-** | **12,704** | **-** | **14,610** | **14,610** |
| 1 | 03 | 02 | 04 | 02 | 25 | Procure Power Supply - (QTm2) - 10kw | 3-Oct-06 | 12-Mar-07 | S | C | SL_MSEG | $$ | | 12,704 | | 14,610 | 14,610 |
| **1** | **03** | **02** | **04** | **02** | **26** | **QUM1** | | | | | | | **-** | **12,704** | **-** | **14,610** | **14,610** |
| 1 | 03 | 02 | 04 | 02 | 26 | Procure Power Supply - (QUM1) - 10kw | 3-Oct-06 | 12-Mar-07 | S | C | SL_MSEG | $$ | | 12,704 | | 14,610 | 14,610 |
| **1** | **03** | **02** | **04** | **02** | **27** | **QUM2** | | | | | | | **-** | **12,704** | **-** | **14,610** | **14,610** |
| 1 | 03 | 02 | 04 | 02 | 27 | Procure Power Supply - (QUM2) - 10kw | 3-Oct-06 | 12-Mar-07 | S | C | SL_MSEG | $$ | | 12,704 | | 14,610 | 14,610 |
| **1** | **03** | **02** | **04** | **02** | **28** | **QUM3** | | | | | | | **-** | **12,704** | **-** | **14,610** | **14,610** |
| 1 | 03 | 02 | 04 | 02 | 28 | Procure Power Supply - (QUM3) - 10kw | 3-Oct-06 | 12-Mar-07 | S | C | SL_MSEG | $$ | | 12,704 | | 14,610 | 14,610 |
| **1** | **03** | **02** | **04** | **02** | **29** | **QUM4** | | | | | | | **-** | **12,704** | **-** | **14,610** | **14,610** |
| 1 | 03 | 02 | 04 | 02 | 29 | Procure Power Supply - (QUM4) - 10kw | 3-Oct-06 | 12-Mar-07 | S | C | SL_MSEG | $$ | | 12,704 | | 14,610 | 14,610 |
| **1** | **03** | **02** | **04** | **02** | **30** | **Power Supply - (QDMP)** | | | | | | | **-** | **8,537** | **-** | **9,818** | **9,818** |
| 1 | 03 | 02 | 04 | 02 | 30 | Procure Power Supply - (QDMP) | 3-Oct-06 | 12-Mar-07 | S | C | SL_MSEG | $$ | | 8,537 | | 9,818 | 9,818 |

| WBS Level | | | | | | LCLA DCE March-2005 | Early | Early | OBS | Fund | Res | Units | Budgeted Quantity | | Fully Burdened and Escalated Cost | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Run Time: 4/2205 8:43am | | | | | | Description | Start | Finish | | Type | Code | | Hours | $$ | Labor | M&S | Total (No Conting) |
| 1 | 2 | 3 | 4 | 5 | 6 | | | | | | | | | | | | |
| **1** | **03** | **02** | **04** | **02** | **31** | **Power Supply - (QUE1)** | | | | | | | **-** | **8,537** | **-** | **9,818** | **9,818** |
| 1 | 03 | 02 | 04 | 02 | 31 | Procure Power Supply - (QUE1) - 10kw | 3-Oct-06 | 12-Mar-07 | S | C | SL_MSEG | $$ | | 8,537 | | 9,818 | 9,818 |
| **1** | **03** | **02** | **04** | **02** | **32** | **Power Supply - (QUE2)** | | | | | | | **-** | **8,537** | **-** | **9,818** | **9,818** |
| 1 | 03 | 02 | 04 | 02 | 32 | Procure Power Supply - (QUE2) - 10kw | 3-Oct-06 | 12-Mar-07 | S | C | SL_MSEG | $$ | | 8,537 | | 9,818 | 9,818 |
| **1** | **03** | **02** | **04** | **03** | | **Beamline Power Supplies - (Trim Type)** | | | | | | | **256** | **325,980** | **23,893** | **371,616** | **395,509** |
| 1 | 03 | 02 | 04 | 03 | | Finalize Power Conv Reqmts Definition (Trim) | 11-Jul-05 | 15-Jul-05 | | P | SL_PCE | Hrs | 40 | | 4,500 | | 4,500 |
| **1** | **03** | **02** | **04** | **03** | **01** | **MCOR_1 (12Amp)** | | | | | | | **12** | **36,390** | **1,188** | **40,757** | **41,945** |
| 1 | 03 | 02 | 04 | 03 | 01 | Procure 12Amp Pwr Supply-(MCOR_1)(7-12Amp modul | 3-Oct-05 | 10-Mar-06 | S | C | SL_MSEG | $$ | | 36,390 | | 40,757 | 40,757 |
| 1 | 03 | 02 | 04 | 03 | 01 | Integrate Cables | 13-Mar-06 | 14-Mar-06 | | C | SL_TMUE | Hrs | 12 | | 1,188 | | 1,188 |
| **1** | **03** | **02** | **04** | **03** | **02** | **MCOR_2 (30Amp)** | | | | | | | **12** | **36,230** | **1,188** | **40,578** | **41,766** |
| 1 | 03 | 02 | 04 | 03 | 02 | Procure 30Amp Pwr Supply-(MCOR_2)(7-30Amp modul | 3-Oct-05 | 10-Mar-06 | S | C | SL_MSEG | $$ | | 36,230 | | 40,578 | 40,578 |
| 1 | 03 | 02 | 04 | 03 | 02 | Integrate Cables | 13-Mar-06 | 14-Mar-06 | | C | SL_TMUE | Hrs | 12 | | 1,188 | | 1,188 |
| **1** | **03** | **02** | **04** | **03** | **03** | **MCOR_3 (30Amp)** | | | | | | | **12** | **36,230** | **1,219** | **41,665** | **42,884** |
| 1 | 03 | 02 | 04 | 03 | 03 | Procure 30Amp Pwr Supply-(MCOR_3)(7-30Amp modul | 3-Oct-06 | 12-Mar-07 | S | C | SL_MSEG | $$ | | 36,230 | | 41,665 | 41,665 |
| 1 | 03 | 02 | 04 | 03 | 03 | Integrate Cables | 13-Mar-07 | 14-Mar-07 | | C | SL_TMUE | Hrs | 12 | | 1,219 | | 1,219 |
| **1** | **03** | **02** | **04** | **03** | **04** | **MCOR_4 (30Amp)** | | | | | | | **12** | **36,230** | **1,188** | **40,578** | **41,766** |
| 1 | 03 | 02 | 04 | 03 | 04 | Procure 30Amp Pwr Supply-(MCOR_4)(7-30Amp modul | 3-Oct-05 | 10-Mar-06 | S | C | SL_MSEG | $$ | | 36,230 | | 40,578 | 40,578 |
| 1 | 03 | 02 | 04 | 03 | 04 | Integrate Cables | 13-Mar-06 | 14-Mar-06 | | C | SL_TMUE | Hrs | 12 | | 1,188 | | 1,188 |
| **1** | **03** | **02** | **04** | **03** | **05** | **MCOR_5 (12Amp)** | | | | | | | | | | | |
| **1** | **03** | **02** | **04** | **03** | **06** | **MCOR_6 (12Amp)** | | | | | | | | | | | |
| **1** | **03** | **02** | **04** | **03** | **07** | **MCOR_7 (12Amp)** | | | | | | | | | | | |
| **1** | **03** | **02** | **04** | **03** | **08** | **MCOR_8 (12Amp)** | | | | | | | | | | | |
| **1** | **03** | **02** | **04** | **03** | **09** | **MCOR_9 (12Amp)** | | | | | | | | | | | |
| **1** | **03** | **02** | **04** | **03** | **10** | **MCOR_LTU1** | | | | | | | **12** | **30,150** | **1,219** | **34,673** | **35,892** |
| 1 | 03 | 02 | 04 | 03 | 10 | Procure Power Supply-(MCOR_LTU1)(5-12Amp module | 3-Oct-06 | 12-Mar-07 | S | C | SL_MSEG | $$ | | 30,150 | | 34,673 | 34,673 |
| 1 | 03 | 02 | 04 | 03 | 10 | Integrate Cables | 13-Mar-07 | 14-Mar-07 | | C | SL_TMUE | Hrs | 12 | | 1,219 | | 1,219 |
| **1** | **03** | **02** | **04** | **03** | **11** | **MCOR_LTU2** | | | | | | | **12** | **30,150** | **1,219** | **34,673** | **35,892** |
| 1 | 03 | 02 | 04 | 03 | 11 | Procure Power Supply-(MCOR_LTU2) | 3-Oct-06 | 12-Mar-07 | S | C | SL_MSEG | $$ | | 30,150 | | 34,673 | 34,673 |
| 1 | 03 | 02 | 04 | 03 | 11 | Integrate Cables | 13-Mar-07 | 14-Mar-07 | | C | SL_TMUE | Hrs | 12 | | 1,219 | | 1,219 |
| **1** | **03** | **02** | **04** | **03** | **12** | **MCOR_LTU3** | | | | | | | **12** | **30,150** | **1,219** | **34,673** | **35,892** |
| 1 | 03 | 02 | 04 | 03 | 12 | Procure Power Supply-(MCOR_LTU3) | 3-Oct-06 | 12-Mar-07 | S | C | SL_MSEG | $$ | | 30,150 | | 34,673 | 34,673 |
| 1 | 03 | 02 | 04 | 03 | 12 | Integrate Cables | 13-Mar-07 | 14-Mar-07 | | C | SL_TMUE | Hrs | 12 | | 1,219 | | 1,219 |
| **1** | **03** | **02** | **04** | **03** | **13** | **MCOR_LTU4** | | | | | | | **108** | **30,150** | **8,515** | **34,673** | **43,188** |
| 1 | 03 | 02 | 04 | 03 | 13 | Procure Power Supply-(MCOR_LTU4) | 3-Oct-06 | 12-Mar-07 | S | C | SL_MSEG | $$ | | 30,150 | | 34,673 | 34,673 |
| 1 | 03 | 02 | 04 | 03 | 13 | Assemble Pwr Supply, Transductor & Control | 13-Mar-07 | 20-Mar-07 | S | C | SL_PCT | Hrs | 32 | | 2,080 | | 2,080 |
| 1 | 03 | 02 | 04 | 03 | 13 | Assemble Pwr Supply, Transductor & Control | 13-Mar-07 | 20-Mar-07 | S | C | SL_PCE | Hrs | 16 | | 1,899 | | 1,899 |
| 1 | 03 | 02 | 04 | 03 | 13 | Assemble Pwr Supply, Transductor & Control | 13-Mar-07 | 20-Mar-07 | S | C | SL_PCCA | Hrs | 48 | | 3,317 | | 3,317 |
| 1 | 03 | 02 | 04 | 03 | 13 | Integrate Cables | 21-Mar-07 | 22-Mar-07 | | C | SL_TMUE | Hrs | 12 | | 1,219 | | 1,219 |
| **1** | **03** | **02** | **04** | **03** | **14** | **MCOR_LTU5** | | | | | | | **12** | **30,150** | **1,219** | **34,673** | **35,892** |
| 1 | 03 | 02 | 04 | 03 | 14 | Procure Power Supply-(MCOR_LTU5) | 3-Oct-06 | 12-Mar-07 | S | C | SL_MSEG | $$ | | 30,150 | | 34,673 | 34,673 |
| 1 | 03 | 02 | 04 | 03 | 14 | Integrate Cables | 13-Mar-07 | 14-Mar-07 | | C | SL_TMUE | Hrs | 12 | | 1,219 | | 1,219 |
| **1** | **03** | **02** | **04** | **03** | **15** | **MCOR_LTU6** | | | | | | | **12** | **30,150** | **1,219** | **34,673** | **35,892** |
| 1 | 03 | 02 | 04 | 03 | 15 | Procure Power Supply-(MCOR_LTU6) | 3-Oct-06 | 12-Mar-07 | S | C | SL_MSEG | $$ | | 30,150 | | 34,673 | 34,673 |
| 1 | 03 | 02 | 04 | 03 | 15 | Integrate Cables | 13-Mar-07 | 14-Mar-07 | | C | SL_TMUE | Hrs | 12 | | 1,219 | | 1,219 |
| **1** | **03** | **02** | **04** | **04** | | **Beamline Power Supplies - Misc Hdwr** | | | | | | | **8,111** | **248,087** | **591,471** | **281,624** | **873,095** |
| 1 | 03 | 02 | 04 | 04 | | Engineering (Layouts/Raceways/Supports) | 2-May-05 | 27-May-05 | | P | SL_ME | Hrs | 20 | | 2,114 | | 2,114 |
| 1 | 03 | 02 | 04 | 04 | | Engineering (Layouts/Raceways/Supports) | 2-May-05 | 27-May-05 | | P | SL_CE | Hrs | 240 | | 27,002 | | 27,002 |
| 1 | 03 | 02 | 04 | 04 | | Engineering (Layouts/Raceways/Supports) | 2-May-05 | 27-May-05 | | P | SL_CCA | Hrs | 480 | | 31,454 | | 31,454 |
| 1 | 03 | 02 | 04 | 04 | | Cableplant/Rack System Drafting (Bid Doc's) | 16-May-05 | 13-Jun-05 | | P | SL_CCA | Hrs | 720 | | 47,182 | | 47,182 |
| 1 | 03 | 02 | 04 | 04 | | Captar Liason, Documents & Data Entry (Bid Doc's | 14-Jun-05 | 27-Jun-05 | | P | SL_CT | Hrs | 120 | | 7,394 | | 7,394 |
| 1 | 03 | 02 | 04 | 04 | | Captar Liason, Documents & Data Entry (Bid Doc's | 14-Jun-05 | 27-Jun-05 | | P | SL_CCA | Hrs | 120 | | 7,864 | | 7,864 |
| 1 | 03 | 02 | 04 | 04 | | Conduct SLAC Citizen Committee Reviews | 28-Jun-05 | 12-Jul-05 | | L | SL_CE | Hrs | 24 | | 2,700 | | 2,700 |
| 1 | 03 | 02 | 04 | 04 | | Conduct Design Review - Linac and Hall Racks/Tra | 13-Jul-05 | 13-Jul-05 | | L | SL_CE | Hrs | 8 | | 900 | | 900 |
| 1 | 03 | 02 | 04 | 04 | | Write Software to Integrate | 3-Oct-05 | 11-Jan-06 | | C | SL_CP | Hrs | 984 | | 92,024 | | 92,024 |
| 1 | 03 | 02 | 04 | 04 | | Write Documentation | 12-Jan-06 | 26-Jan-06 | | P | SL_CP | Hrs | 40 | | 3,741 | | 3,741 |
| 1 | 03 | 02 | 04 | 04 | | Perform Point to Point Checkout | 27-Jan-06 | 21-Apr-06 | | C | SL_CP | Hrs | 394 | | 36,847 | | 36,847 |
| 1 | 03 | 02 | 04 | 04 | | Integrate Hardware and Software | 24-Apr-06 | 5-May-06 | | C | SL_CP | Hrs | 46 | | 4,302 | | 4,302 |
| 1 | 03 | 02 | 04 | 04 | | Integrate Hardware and Software | 24-Apr-06 | 5-May-06 | | C | SL_CE | Hrs | 40 | | 4,626 | | 4,626 |
| 1 | 03 | 02 | 04 | 04 | | Procure AC Breakers (108) | 3-Oct-05 | 11-Jan-06 | | C | SL_MSEG | $$ | | 9,600 | | 10,752 | 10,752 |
| 1 | 03 | 02 | 04 | 04 | | Procure PS Hubble Plug (80) | 3-Oct-05 | 11-Jan-06 | | C | SL_MSEG | $$ | | 5,175 | | 5,796 | 5,796 |
| 1 | 03 | 02 | 04 | 04 | | Procure 3 Phase Dist Bus (27) | 3-Oct-05 | 11-Jan-06 | | C | SL_MSEG | $$ | | 8,235 | | 9,223 | 9,223 |
| 1 | 03 | 02 | 04 | 04 | | Procure Circuit Breaker Panels (27) | 3-Oct-05 | 11-Jan-06 | | C | SL_MSEG | $$ | | 1,161 | | 1,300 | 1,300 |
| 1 | 03 | 02 | 04 | 04 | | Procure Neutral/Ground Pnl. (27) | 3-Oct-05 | 11-Jan-06 | | C | SL_MSEG | $$ | | 9,990 | | 11,189 | 11,189 |
| 1 | 03 | 02 | 04 | 04 | | Procure Blank Panels (27) | 3-Oct-05 | 11-Jan-06 | | C | SL_MSEG | $$ | | 2,100 | | 2,352 | 2,352 |

| WBS Level | | | | | | LCLA DCE March-2005 | Early | Early | OBS | Fund | Res | Units | Budgeted Quantity | | Fully Burdened and Escalated Cost | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Run Time: 4/2205 8:43am | | | | | | Description | Start | Finish | | Type | Code | | Hours | $$ | Labor | M&S | Total (No Conting) |
| 1 | 2 | 3 | 4 | 5 | 6 | | | | | | | | | | | | |
| 1 | 03 | 02 | 04 | 04 | | Procure AC Wire | 3-Oct-05 | 11-Jan-06 | | C | SL_MSEG | $$ | | 750 | | 840 | 840 |
| 1 | 03 | 02 | 04 | 04 | | Procure Breaker Lock-outs | 3-Oct-05 | 11-Jan-06 | | C | SL_MSEG | $$ | | 600 | | 672 | 672 |
| 1 | 03 | 02 | 04 | 04 | | Procure Rack Cooling Fans | 3-Oct-05 | 11-Jan-06 | | C | SL_MSEG | $$ | | 3,600 | | 4,032 | 4,032 |
| 1 | 03 | 02 | 04 | 04 | | Procure Rack Hardware (Single Rack) | 3-Oct-05 | 11-Jan-06 | | C | SL_MSEG | $$ | | 650 | | 728 | 728 |
| 1 | 03 | 02 | 04 | 04 | | Procure Rack Hardware (Double Rack) | 3-Oct-05 | 11-Jan-06 | | C | SL_MSEG | $$ | | 650 | | 728 | 728 |
| 1 | 03 | 02 | 04 | 04 | | Prep Bid Pak - Single Bay Racks (DC/I&C) | 3-Oct-05 | 21-Oct-05 | | C | SL_PCE | Hrs | 8 | | 925 | | 925 |
| 1 | 03 | 02 | 04 | 04 | | Evaluate Proposals - Single Bay Racks (DC/I&C) | 13-Dec-05 | 18-Jan-06 | | C | SL_PCE | Hrs | 8 | | 925 | | 925 |
| 1 | 03 | 02 | 04 | 04 | | Vendor Fab/Assy - Single Bay Racks | 8-Feb-06 | 28-Jul-06 | | C | SA_MSEG | $$ | | 48,000 | | 53,760 | 53,760 |
| 1 | 03 | 02 | 04 | 04 | | Integrate Rack Hardware & Internal AC Wiring-S1 | 6-Apr-06 | 29-Jun-06 | | C | SL_PCEF | Hrs | 146 | | 9,248 | | 9,248 |
| 1 | 03 | 02 | 04 | 04 | | Integrate Rack-Mnted Pwr Supplies & Intra-Cables | 16-Jun-06 | 11-Sep-06 | | C | SL_PCEF | Hrs | 405 | | 25,653 | | 25,653 |
| 1 | 03 | 02 | 04 | 04 | | Integrate Rack/Crate-Mnted Controls & Intra-Cbls | 30-Jun-06 | 25-Aug-06 | | C | SL_PCEF | Hrs | 270 | | 17,102 | | 17,102 |
| 1 | 03 | 02 | 04 | 04 | | Integrate Rack Hardware & Internal AC Wiring-S2 | 2-Jun-06 | 25-Aug-06 | | C | SL_PCEF | Hrs | 90 | | 5,701 | | 5,701 |
| 1 | 03 | 02 | 04 | 04 | | Integrate Rack-Mnted Pwr Supplies & Intra-Cables | 26-Jul-07 | 18-Oct-07 | | C | SL_PCEF | Hrs | 270 | | 17,654 | | 17,654 |
| 1 | 03 | 02 | 04 | 04 | | Integrate Rack/Crate-Mnted Controls & Intra-Cbls | 28-Aug-06 | 20-Nov-06 | | C | SL_PCEF | Hrs | 180 | | 11,579 | | 11,579 |
| 1 | 03 | 02 | 04 | 04 | | Integrate Rack Hardware & Internal AC Wiring-S3 | 31-Jul-06 | 23-Oct-06 | | C | SL_PCEF | Hrs | 81 | | 5,166 | | 5,166 |
| 1 | 03 | 02 | 04 | 04 | | Integrate Rack-Mnted Pwr Supplies & Intra-Cables | 24-Sep-07 | 3-Jan-08 | | C | SL_PCEF | Hrs | 216 | | 14,372 | | 14,372 |
| 1 | 03 | 02 | 04 | 04 | | Integrate Rack/Crate-Mnted Controls & Intra-Cbls | 22-Mar-07 | 14-Jun-07 | | C | SL_PCEF | Hrs | 146 | | 9,489 | | 9,489 |
| 1 | 03 | 02 | 04 | 04 | | Prep Bid Pak - Double Bay Racks | 3-Oct-05 | 21-Oct-05 | | C | SL_PCE | Hrs | 8 | | 925 | | 925 |
| 1 | 03 | 02 | 04 | 04 | | Evaluate Proposals - Double Bay Racks | 13-Dec-05 | 18-Jan-06 | | C | SL_PCE | Hrs | 8 | | 925 | | 925 |
| 1 | 03 | 02 | 04 | 04 | | Vendor Fab/Assy - Double Bay Racks | 8-Feb-06 | 29-Jun-06 | | C | SA_MSEG | $$ | | 32,000 | | 35,840 | 35,840 |
| 1 | 03 | 02 | 04 | 04 | | Integrate Rack Hardware & Internal AC Wiring-S1 | 6-Apr-06 | 29-Jun-06 | | C | SL_PCEF | Hrs | 216 | | 13,681 | | 13,681 |
| 1 | 03 | 02 | 04 | 04 | | Integrate Rack-Mnted Pwr Supplies & Intra-Cables | 4-May-06 | 28-Jul-06 | | C | SL_PCEF | Hrs | 450 | | 28,503 | | 28,503 |
| 1 | 03 | 02 | 04 | 04 | | Perform Pre-install Testing Power Supplies-Set 1 | 16-Jun-06 | 18-Aug-06 | | C | SL_CCA | Hrs | 180 | | 12,125 | | 12,125 |
| 1 | 03 | 02 | 04 | 04 | | Integrate Rack/Crate-Mnted Controls & Intra-Cbls | 31-May-06 | 23-Aug-06 | | C | SL_PCEF | Hrs | 270 | | 17,102 | | 17,102 |
| 1 | 03 | 02 | 04 | 04 | | Perform Pre-install Testing Controls - Set 1 | 18-Jul-06 | 28-Aug-06 | | C | SL_CCA | Hrs | 120 | | 8,083 | | 8,083 |
| 1 | 03 | 02 | 04 | 04 | | Integrate Rack Hardware & Internal AC Wiring-S2 | 18-May-06 | 14-Jul-06 | | C | SL_PCEF | Hrs | 146 | | 9,248 | | 9,248 |
| 1 | 03 | 02 | 04 | 04 | | Integrate Rack-Mnted Pwr Supplies & Intra-Cables | 26-Jul-07 | 2-Jan-08 | | C | SL_PCEF | Hrs | 360 | | 23,725 | | 23,725 |
| 1 | 03 | 02 | 04 | 04 | | Perform Pre-install Testing Power Supplies-Set 2 | 9-Aug-07 | 11-Oct-07 | | C | SL_CCA | Hrs | 120 | | 8,336 | | 8,336 |
| 1 | 03 | 02 | 04 | 04 | | Integrate Rack/Crate-Mnted Controls & Intra-Cbls | 16-Oct-06 | 20-Apr-07 | | C | SL_PCEF | Hrs | 270 | | 17,547 | | 17,547 |
| 1 | 03 | 02 | 04 | 04 | | Perform Pre-install Testing Controls - Set 2 | 23-Apr-07 | 4-Jun-07 | | C | SL_CCA | Hrs | 80 | | 5,529 | | 5,529 |
| 1 | 03 | 02 | 04 | 04 | | Integrate Rack Hardware & Internal AC Wiring-S3 | 30-Jun-06 | 4-Jan-07 | | C | SL_PCEF | Hrs | 59 | | 3,782 | | 3,782 |
| 1 | 03 | 02 | 04 | 04 | | Integrate Rack-Mnted Pwr Supplies & Intra-Cables | 23-Mar-07 | 11-Sep-07 | | C | SL_PCEF | Hrs | 216 | | 14,038 | | 14,038 |
| 1 | 03 | 02 | 04 | 04 | | Perform Pre-install Testing Power Supplies-Set 3 | 6-Apr-07 | 8-Jun-07 | | C | SL_CCA | Hrs | 120 | | 8,293 | | 8,293 |
| 1 | 03 | 02 | 04 | 04 | | Integrate Rack/Crate-Mnted Controls & Intra-Cbls | 4-May-07 | 23-Oct-07 | | C | SL_PCEF | Hrs | 270 | | 17,612 | | 17,612 |
| 1 | 03 | 02 | 04 | 04 | | Perform Pre-install Testing Controls - Set 3 | 24-Oct-07 | 6-Dec-07 | | C | SL_CCA | Hrs | 60 | | 4,255 | | 4,255 |
| 1 | 03 | 02 | 04 | 04 | | Prep Bid Pak - Cable Tray Material- Tray and Div | 3-Oct-05 | 21-Oct-05 | | C | SL_PCE | Hrs | 24 | | 2,776 | | 2,776 |
| 1 | 03 | 02 | 04 | 04 | | Evaluate Proposals - Cable Tray Material- Tray a | 10-Nov-05 | 11-Nov-05 | | C | SL_PCE | Hrs | 6 | | 694 | | 694 |
| 1 | 03 | 02 | 04 | 04 | | Vendor Fab - Cable Tray Material | 23-Oct-06 | 1-Feb-07 | | C | SA_MSEG | $$ | | 82,016 | | 94,318 | 94,318 |
| 1 | 03 | 02 | 04 | 04 | | Procure Cable Tray Fittings (DC&IC) | 3-Oct-06 | 9-Apr-07 | | C | SL_MSEG | $$ | | 9,000 | | 10,350 | 10,350 |
| 1 | 03 | 02 | 04 | 04 | | Procure Trapeze Cable Tray Supports (DC&IC) 300 | 3-Oct-06 | 9-Apr-07 | | C | SL_MSEG | $$ | | 27,000 | | 31,050 | 31,050 |
| 1 | 03 | 02 | 04 | 04 | | Procure Cable Tray Grounding (DC&IC, $1.8/ft) | 3-Oct-06 | 9-Apr-07 | | C | SL_MSEG | $$ | | 5,400 | | 6,210 | 6,210 |
| 1 | 03 | 02 | 04 | 04 | | Procure Gnd Jumpers (DC&IC) | 3-Oct-06 | 9-Apr-07 | | C | SL_MSEG | $$ | | 2,160 | | 2,484 | 2,484 |
| 1 | 03 | 02 | 04 | 04 | | Prep Bid Pak - Linac Cableplant Installation-all | 3-Oct-05 | 21-Oct-05 | | C | SL_PCE | Hrs | 48 | | 5,552 | | 5,552 |
| 1 | 03 | 02 | 04 | 04 | | Evaluate Proposals - Linac Cableplant Instl Cntr | 11-Jan-06 | 25-Jan-06 | | C | SL_PCE | Hrs | 24 | | 2,776 | | 2,776 |
| **1** | **03** | **02** | **05** | | | **Controls - LLRF** | | | | | | | **1,804** | **24,771** | **156,505** | **27,744** | **184,249** |
| 1 | 03 | 02 | 05 | | | Procure Linac LLRF Hardware | 3-Oct-05 | 11-Jan-06 | S | C | SL_MSEG | $$ | | 21,771 | | 24,384 | 24,384 |
| 1 | 03 | 02 | 05 | | | Build LLRF H/W and Write Docmntatn (sec 24/30) | 29-Nov-05 | 11-Jan-06 | | C | SL_PCEF | Hrs | 168 | | 10,641 | | 10,641 |
| 1 | 03 | 02 | 05 | | | Build LLRF H/W and Write Docmntatn (sec 24/30) | 29-Nov-05 | 11-Jan-06 | | C | SL_CP | Hrs | 60 | | 5,611 | | 5,611 |
| 1 | 03 | 02 | 05 | | | Build LLRF H/W and Write Docmntatn (sec 24/30) | 29-Nov-05 | 11-Jan-06 | | C | SL_CE | Hrs | 20 | | 2,313 | | 2,313 |
| 1 | 03 | 02 | 05 | | | Write LLRF S/W Docmntatn (sec 24/30) | 8-Aug-05 | 12-Aug-05 | | L | SL_CP | Hrs | 60 | | 5,458 | | 5,458 |
| 1 | 03 | 02 | 05 | | | Integrate and Test (sec 24/30) | 12-Jan-06 | 20-Mar-06 | | C | SL_CP | Hrs | 320 | | 29,926 | | 29,926 |
| 1 | 03 | 02 | 05 | | | Integrate and Test (sec 24/30) | 12-Jan-06 | 20-Mar-06 | | C | SL_CE | Hrs | 60 | | 6,940 | | 6,940 |
| 1 | 03 | 02 | 05 | | | Integrate and Test (sec 24/30) | 12-Jan-06 | 20-Mar-06 | | C | SL_CCA | Hrs | 200 | | 13,472 | | 13,472 |
| 1 | 03 | 02 | 05 | | | Procure LLRF BL Mon Cntrls hardware | 3-Oct-05 | 11-Jan-06 | S | C | SL_MSEG | $$ | | 3,000 | | 3,360 | 3,360 |
| 1 | 03 | 02 | 05 | | | Integrate and Test (BLM sec 24/30) | 12-Jan-06 | 20-Mar-06 | | C | SL_PCEF | Hrs | 168 | | 10,641 | | 10,641 |
| 1 | 03 | 02 | 05 | | | Integrate and Test (BLM sec 24/30) | 12-Jan-06 | 20-Mar-06 | | C | SL_CP | Hrs | 678 | | 63,407 | | 63,407 |
| 1 | 03 | 02 | 05 | | | Integrate and Test (BLM sec 24/30) | 12-Jan-06 | 20-Mar-06 | | C | SL_CE | Hrs | 70 | | 8,096 | | 8,096 |
| **1** | **03** | **02** | **06** | | | **Controls - E-Beam Diagnostic** | | | | | | | **8,494** | **1,042,832** | **758,775** | **1,165,219** | **1,923,994** |
| **1** | **03** | **02** | **06** | **01** | | **Controls - Wire Scanners** | | | | | | | **1,488** | **189,000** | **120,463** | **211,680** | **332,143** |
| 1 | 03 | 02 | 06 | 01 | | Generate Detailed Procurement Plan | 3-Oct-05 | 3-Oct-05 | S | P | SL_CE | Hrs | 4 | | 463 | | 463 |
| 1 | 03 | 02 | 06 | 01 | | Establish Subordinate Work Orders | 4-Oct-05 | 4-Oct-05 | S | P | SL_CE | Hrs | 4 | | 463 | | 463 |
| 1 | 03 | 02 | 06 | 01 | | Procure Wire Scanner Hardware (5) | 17-Oct-05 | 11-Nov-05 | S | C | SA_MSEG | $$ | | 189,000 | | 211,680 | 211,680 |
| 1 | 03 | 02 | 06 | 01 | | Build Wire Scanner H/W (19) | 14-Nov-05 | 24-Jan-06 | | C | SL_CT | Hrs | 560 | | 35,470 | | 35,470 |
| 1 | 03 | 02 | 06 | 01 | | Build Wire Scanner H/W (19) | 14-Nov-05 | 24-Jan-06 | | C | SL_CE | Hrs | 80 | | 9,253 | | 9,253 |

| WBS Level | | | | | | LCLA DCE March-2005 | Early | Early | OBS | Fund | Res | Units | Budgeted Quantity | | Fully Burdened and Escalated Cost | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Run Time: 4/2205 8:43am | | | | | | Description | Start | Finish | | Type | Code | | Hours | $$ | Labor | M&S | Total (No Conting) |
| 1 | 2 | 3 | 4 | 5 | 6 | | | | | | | | | | | | |
| 1 | 03 | 02 | 06 | 01 | | Write Software - Wire Scanners | 11-Nov-05 | 12-Dec-05 | S | C | SL_CP | Hrs | 160 | | 14,963 | | 14,963 |
| 1 | 03 | 02 | 06 | 01 | | Write Documentation - Wire Scanners | 13-Dec-05 | 3-Jan-06 | S | C | SL_CP | Hrs | 100 | | 9,352 | | 9,352 |
| 1 | 03 | 02 | 06 | 01 | | Write Documentation - Wire Scanners | 13-Dec-05 | 3-Jan-06 | S | C | SL_CE | Hrs | 20 | | 2,313 | | 2,313 |
| 1 | 03 | 02 | 06 | 01 | | Integrate and Test Wire Scanners (19) | 25-Jan-06 | 5-Apr-06 | | C | SL_CP | Hrs | 400 | | 37,408 | | 37,408 |
| 1 | 03 | 02 | 06 | 01 | | Integrate and Test Wire Scanners (19) | 25-Jan-06 | 5-Apr-06 | | C | SL_CCA | Hrs | 160 | | 10,778 | | 10,778 |
| **1** | **03** | **02** | **06** | **02** | | **Controls - BPMs** | | | | | | | **1,626** | **559,675** | **133,484** | **623,796** | **757,280** |
| 1 | 03 | 02 | 06 | 02 | | Generate Detailed Procurement Plan | 1-Mar-05 | 1-Mar-05 | S | P | SL_CE | Hrs | 4 | | 450 | | 450 |
| 1 | 03 | 02 | 06 | 02 | | Establish Subordinate Work Orders | 2-Mar-05 | 2-Mar-05 | S | P | SL_CE | Hrs | 4 | | 450 | | 450 |
| 1 | 03 | 02 | 06 | 02 | | Procure BPMs and Cables (143) | 4-Oct-05 | 31-Oct-05 | S | C | SA_MSEG | $$ | | 500,000 | | 560,000 | 560,000 |
| 1 | 03 | 02 | 06 | 02 | | Procure BPMs and Cables (143) | 4-Oct-05 | 31-Oct-05 | S | C | SA_MSXX | $$ | | 50,675 | | 53,716 | 53,716 |
| 1 | 03 | 02 | 06 | 02 | | Procure 50B1 BPMs | 4-Oct-05 | 31-Oct-05 | S | C | SL_MSEG | $$ | | 9,000 | | 10,080 | 10,080 |
| 1 | 03 | 02 | 06 | 02 | | Build LIU H/W | 1-Nov-05 | 8-Feb-06 | | C | SL_CT | Hrs | 278 | | 17,609 | | 17,609 |
| 1 | 03 | 02 | 06 | 02 | | Write Software - Standard BPMs | 1-Mar-05 | 7-Mar-05 | S | P | SL_CP | Hrs | 40 | | 3,639 | | 3,639 |
| 1 | 03 | 02 | 06 | 02 | | Write Documentation- Standard BPMs | 8-Mar-05 | 14-Mar-05 | S | P | SL_CP | Hrs | 8 | | 728 | | 728 |
| 1 | 03 | 02 | 06 | 02 | | Write Documentation- Standard BPMs | 8-Mar-05 | 14-Mar-05 | S | P | SL_CE | Hrs | 8 | | 900 | | 900 |
| 1 | 03 | 02 | 06 | 02 | | Integrate and Test LIU BPMs | 9-Feb-06 | 21-Mar-06 | S | C | SL_CP | Hrs | 20 | | 1,870 | | 1,870 |
| 1 | 03 | 02 | 06 | 02 | | Integrate and Test LIU BPMs | 9-Feb-06 | 21-Mar-06 | S | C | SL_CE | Hrs | 80 | | 9,253 | | 9,253 |
| 1 | 03 | 02 | 06 | 02 | | Build RF BPM H/W | 3-Oct-05 | 31-Oct-05 | | C | SL_CT | Hrs | 40 | | 2,534 | | 2,534 |
| 1 | 03 | 02 | 06 | 02 | | Write Software - RF BPMs | 1-Nov-05 | 30-Nov-05 | S | C | SL_CP | Hrs | 160 | | 14,963 | | 14,963 |
| 1 | 03 | 02 | 06 | 02 | | Write Documentation- RF BPMs | 1-Dec-05 | 7-Dec-05 | S | C | SL_CP | Hrs | 8 | | 748 | | 748 |
| 1 | 03 | 02 | 06 | 02 | | Write Documentation- RF BPMs | 1-Dec-05 | 7-Dec-05 | S | C | SL_CE | Hrs | 8 | | 925 | | 925 |
| 1 | 03 | 02 | 06 | 02 | | Integrate and Test RF BPMs | 22-Jun-06 | 29-Jun-06 | | C | SL_CP | Hrs | 20 | | 1,870 | | 1,870 |
| 1 | 03 | 02 | 06 | 02 | | Integrate and Test RF BPMs | 22-Jun-06 | 29-Jun-06 | | C | SL_CE | Hrs | 80 | | 9,253 | | 9,253 |
| 1 | 03 | 02 | 06 | 02 | | Build H/W (4) LTU BPMs | 3-Oct-05 | 1-Nov-05 | | C | SL_CT | Hrs | 278 | | 17,609 | | 17,609 |
| 1 | 03 | 02 | 06 | 02 | | Write Software - LTU BPMs | 2-Nov-05 | 8-Nov-05 | S | C | SL_CP | Hrs | 40 | | 3,741 | | 3,741 |
| 1 | 03 | 02 | 06 | 02 | | Write Documentation- LTU BPMs | 9-Nov-05 | 15-Nov-05 | S | C | SL_CP | Hrs | 8 | | 748 | | 748 |
| 1 | 03 | 02 | 06 | 02 | | Write Documentation- LTU BPMs | 9-Nov-05 | 15-Nov-05 | S | C | SL_CE | Hrs | 8 | | 925 | | 925 |
| 1 | 03 | 02 | 06 | 02 | | Integrate and Test LTU BPMs | 16-Nov-05 | 29-Nov-05 | | C | SL_CP | Hrs | 20 | | 1,870 | | 1,870 |
| 1 | 03 | 02 | 06 | 02 | | Integrate and Test LTU BPMs | 16-Nov-05 | 29-Nov-05 | | C | SL_CE | Hrs | 80 | | 9,253 | | 9,253 |
| 1 | 03 | 02 | 06 | 02 | | Build H/W (4) BC1 BPMs | 3-Oct-05 | 1-Nov-05 | | C | SL_CT | Hrs | 278 | | 17,609 | | 17,609 |
| 1 | 03 | 02 | 06 | 02 | | Write Software - BC1 BPMs | 2-Nov-05 | 8-Nov-05 | S | C | SL_CP | Hrs | 40 | | 3,741 | | 3,741 |
| 1 | 03 | 02 | 06 | 02 | | Write Documentation- BC1 BPMs | 9-Nov-05 | 15-Nov-05 | S | C | SL_CP | Hrs | 8 | | 748 | | 748 |
| 1 | 03 | 02 | 06 | 02 | | Write Documentation- BC1 BPMs | 9-Nov-05 | 15-Nov-05 | S | C | SL_CE | Hrs | 8 | | 925 | | 925 |
| 1 | 03 | 02 | 06 | 02 | | Integration and Test BC1 BPMs | 16-Nov-05 | 29-Nov-05 | | C | SL_CP | Hrs | 20 | | 1,870 | | 1,870 |
| 1 | 03 | 02 | 06 | 02 | | Integration and Test BC1 BPMs | 16-Nov-05 | 29-Nov-05 | | C | SL_CE | Hrs | 80 | | 9,253 | | 9,253 |
| **1** | **03** | **02** | **06** | **03** | | **Controls - Toroids** | | | | | | | **216** | **40,520** | **19,267** | **45,382** | **64,649** |
| 1 | 03 | 02 | 06 | 03 | | Procure Torroid Shielding, Preamps, Hardware (6) | 4-Oct-05 | 7-Dec-05 | S | C | SA_MSEG | $$ | | 40,520 | | 45,382 | 45,382 |
| 1 | 03 | 02 | 06 | 03 | | Build Hardware (Toroids) | 8-Dec-05 | 21-Feb-06 | | C | SL_CT | Hrs | 72 | | 4,560 | | 4,560 |
| 1 | 03 | 02 | 06 | 03 | | Build Hardware (Toroids) | 8-Dec-05 | 21-Feb-06 | | C | SL_CE | Hrs | 24 | | 2,776 | | 2,776 |
| 1 | 03 | 02 | 06 | 03 | | Write Software - Toroids | 22-Feb-06 | 28-Feb-06 | S | C | SL_CP | Hrs | 40 | | 3,741 | | 3,741 |
| 1 | 03 | 02 | 06 | 03 | | Write Documentation - Toroids | 1-Mar-06 | 7-Mar-06 | S | C | SL_CP | Hrs | 8 | | 748 | | 748 |
| 1 | 03 | 02 | 06 | 03 | | Write Documentation - Toroids | 1-Mar-06 | 7-Mar-06 | S | C | SL_CE | Hrs | 8 | | 925 | | 925 |
| 1 | 03 | 02 | 06 | 03 | | Integrate and Test Toroids | 8-Mar-06 | 23-Mar-06 | | C | SL_CP | Hrs | 40 | | 3,741 | | 3,741 |
| 1 | 03 | 02 | 06 | 03 | | Integrate and Test Toroids | 8-Mar-06 | 23-Mar-06 | | C | SL_CE | Hrs | 24 | | 2,776 | | 2,776 |
| **1** | **03** | **02** | **06** | **04** | | **Controls - Stoppers** | | | | | | | **288** | **12,800** | **26,764** | **14,336** | **41,100** |
| 1 | 03 | 02 | 06 | 04 | | Procure Stopper Controls Hdwr/Eq | 9-Jan-06 | 6-Feb-06 | S | C | SL_MSEG | $$ | | 12,800 | | 14,336 | 14,336 |
| 1 | 03 | 02 | 06 | 04 | | Build Stopper Controls H/W | 7-Feb-06 | 5-Apr-06 | S | C | SL_CT | Hrs | 32 | | 2,027 | | 2,027 |
| 1 | 03 | 02 | 06 | 04 | | Build Stopper Controls H/W | 7-Feb-06 | 5-Apr-06 | S | C | SL_CE | Hrs | 8 | | 925 | | 925 |
| 1 | 03 | 02 | 06 | 04 | | Write Software - Stoppers | 6-Apr-06 | 3-May-06 | S | C | SL_CP | Hrs | 160 | | 14,963 | | 14,963 |
| 1 | 03 | 02 | 06 | 04 | | Write Documentation - Stoppers | 4-May-06 | 10-May-06 | S | C | SL_CP | Hrs | 20 | | 1,870 | | 1,870 |
| 1 | 03 | 02 | 06 | 04 | | Write Documentation - Stoppers | 4-May-06 | 10-May-06 | S | C | SL_CE | Hrs | 20 | | 2,313 | | 2,313 |
| 1 | 03 | 02 | 06 | 04 | | Integrate and Test Stopper Controls | 11-May-06 | 16-Jun-06 | S | C | SL_CP | Hrs | 40 | | 3,741 | | 3,741 |
| 1 | 03 | 02 | 06 | 04 | | Integrate and Test Stopper Controls | 11-May-06 | 16-Jun-06 | S | C | SL_CE | Hrs | 8 | | 925 | | 925 |
| **1** | **03** | **02** | **06** | **05** | | **Controls - Profile Monitors** | | | | | | | **200** | **177,493** | **16,579** | **198,792** | **215,371** |
| 1 | 03 | 02 | 06 | 05 | | Procure Monitor Hardware (20 Units) | 4-Oct-05 | 31-Oct-05 | S | C | SA_MSEG | $$ | | 173,993 | | 194,872 | 194,872 |
| 1 | 03 | 02 | 06 | 05 | | Procure VME Cable - DAC (1) | 1-Nov-05 | 30-Nov-05 | S | C | SL_CT | Hrs | 40 | | 2,534 | | 2,534 |
| 1 | 03 | 02 | 06 | 05 | | Build Wire Profile Monitor H/W in Lab (4) | 1-Dec-05 | 8-Dec-05 | S | C | SL_CT | Hrs | 48 | | 3,040 | | 3,040 |
| 1 | 03 | 02 | 06 | 05 | | Build Wire Profile Monitor H/W in Lab (4) | 1-Dec-05 | 8-Dec-05 | S | C | SL_CE | Hrs | 8 | | 925 | | 925 |
| 1 | 03 | 02 | 06 | 05 | | Write Software - Profile Monitors | 9-Dec-05 | 15-Dec-05 | S | C | SL_CP | Hrs | 40 | | 3,741 | | 3,741 |
| 1 | 03 | 02 | 06 | 05 | | Write Documentation - Profile Monitors | 16-Dec-05 | 6-Jan-06 | S | C | SL_CP | Hrs | 8 | | 748 | | 748 |
| 1 | 03 | 02 | 06 | 05 | | Write Documentation - Profile Monitors | 16-Dec-05 | 6-Jan-06 | S | C | SL_CE | Hrs | 8 | | 925 | | 925 |
| 1 | 03 | 02 | 06 | 05 | | Procure 50B1 Profile Monitors | 4-Oct-05 | 31-Oct-05 | S | C | SL_MSEG | $$ | | 3,500 | | 3,920 | 3,920 |
| 1 | 03 | 02 | 06 | 05 | | Integrate and Test Profile Monitors | 9-Jan-06 | 14-Feb-06 | S | C | SL_CP | Hrs | 40 | | 3,741 | | 3,741 |
| 1 | 03 | 02 | 06 | 05 | | Integrate and Test Profile Monitors | 9-Jan-06 | 14-Feb-06 | S | C | SL_CE | Hrs | 8 | | 925 | | 925 |

| WBS Level | | | | | | LCLA DCE March-2005 | Early | Early | OBS | Fund | Res | Units | Budgeted Quantity | | Fully Burdened and Escalated Cost | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Run Time: 4/2205 8:43am | | | | | | Description | Start | Finish | | Type | Code | | Hours | $$ | Labor | M&S | Total (No Conting) |
| 1 | 2 | 3 | 4 | 5 | 6 | | | | | | | | | | | | |
| **1** | **03** | **02** | **06** | **06** | | **Controls - E/O Diagnostics** | | | | | | | **304** | **24,987** | **27,778** | **27,985** | **55,763** |
| 1 | 03 | 02 | 06 | 06 | | Procure E/O Electronics | 14-Feb-06 | 14-Mar-06 | S | C | SL_MSEG | $$ | | 24,987 | | 27,985 | 27,985 |
| 1 | 03 | 02 | 06 | 06 | | Build H/W (E/O Diagnostics) | 15-Mar-06 | 19-Apr-06 | | C | SL_CT | Hrs | 48 | | 3,040 | | 3,040 |
| 1 | 03 | 02 | 06 | 06 | | Write Software - E/O Diagnostics | 15-Mar-06 | 11-Apr-06 | S | C | SL_CP | Hrs | 160 | | 14,963 | | 14,963 |
| 1 | 03 | 02 | 06 | 06 | | Write Documentation - E/O Elocronics | 12-Apr-06 | 18-Apr-06 | S | C | SL_CP | Hrs | 20 | | 1,870 | | 1,870 |
| 1 | 03 | 02 | 06 | 06 | | Write Documentation - E/O Elocronics | 12-Apr-06 | 18-Apr-06 | S | C | SL_CE | Hrs | 20 | | 2,313 | | 2,313 |
| 1 | 03 | 02 | 06 | 06 | | Integrate and Test E/O Electronics | 20-Apr-06 | 25-May-06 | | C | SL_CP | Hrs | 40 | | 3,741 | | 3,741 |
| 1 | 03 | 02 | 06 | 06 | | Integrate and Test E/O Electronics | 20-Apr-06 | 25-May-06 | | C | SL_CE | Hrs | 16 | | 1,851 | | 1,851 |
| **1** | **03** | **02** | **06** | **07** | | **Controls - Bunch Length Monitors** | | | | | | | **280** | **7,800** | **25,839** | **8,736** | **34,575** |
| 1 | 03 | 02 | 06 | 07 | | Procure BLM Controls Hdwr/Eq | 13-Jan-06 | 10-Feb-06 | S | C | SL_MSEG | $$ | | 7,800 | | 8,736 | 8,736 |
| 1 | 03 | 02 | 06 | 07 | | Build BLM Hardware | 13-Feb-06 | 21-Mar-06 | | C | SL_CT | Hrs | 32 | | 2,027 | | 2,027 |
| 1 | 03 | 02 | 06 | 07 | | Write Software - BLM Diagnostics | 3-Oct-05 | 28-Oct-05 | S | C | SL_CP | Hrs | 160 | | 14,963 | | 14,963 |
| 1 | 03 | 02 | 06 | 07 | | Write Documentation - BLM Diagnostics | 31-Oct-05 | 4-Nov-05 | S | C | SL_CP | Hrs | 20 | | 1,870 | | 1,870 |
| 1 | 03 | 02 | 06 | 07 | | Write Documentation - BLM Diagnostics | 31-Oct-05 | 4-Nov-05 | S | C | SL_CE | Hrs | 20 | | 2,313 | | 2,313 |
| 1 | 03 | 02 | 06 | 07 | | Integrate and Test BLM | 22-Mar-06 | 26-Apr-06 | | C | SL_CP | Hrs | 40 | | 3,741 | | 3,741 |
| 1 | 03 | 02 | 06 | 07 | | Integrate and Test BLM | 22-Mar-06 | 26-Apr-06 | | C | SL_CE | Hrs | 8 | | 925 | | 925 |
| **1** | **03** | **02** | **06** | **08** | | **Controls - Beam Loss Monitors** | | | | | | | **280** | **1,000** | **25,839** | **1,120** | **26,959** |
| 1 | 03 | 02 | 06 | 08 | | Procure BLM Controls Hdwr/Eq | 16-Dec-05 | 30-Jan-06 | S | C | SL_MSEG | $$ | | 1,000 | | 1,120 | 1,120 |
| 1 | 03 | 02 | 06 | 08 | | Build Beam Loss Monitor | 31-Jan-06 | 9-Mar-06 | | C | SL_CT | Hrs | 32 | | 2,027 | | 2,027 |
| 1 | 03 | 02 | 06 | 08 | | Write Software - Bm Lss Mon Diagnostics | 10-Mar-06 | 6-Apr-06 | S | C | SL_CP | Hrs | 160 | | 14,963 | | 14,963 |
| 1 | 03 | 02 | 06 | 08 | | Write Documentation - Bm Lss Mon Diagnostics | 7-Apr-06 | 13-Apr-06 | S | C | SL_CP | Hrs | 20 | | 1,870 | | 1,870 |
| 1 | 03 | 02 | 06 | 08 | | Write Documentation - Bm Lss Mon Diagnostics | 7-Apr-06 | 13-Apr-06 | S | C | SL_CE | Hrs | 20 | | 2,313 | | 2,313 |
| 1 | 03 | 02 | 06 | 08 | | Integrate & Test | 14-Apr-06 | 19-May-06 | | C | SL_CP | Hrs | 40 | | 3,741 | | 3,741 |
| 1 | 03 | 02 | 06 | 08 | | Integrate & Test | 14-Apr-06 | 19-May-06 | | C | SL_CE | Hrs | 8 | | 925 | | 925 |
| **1** | **03** | **02** | **06** | **09** | | **Controls - Single Beam Dump** | | | | | | | **648** | **9,600** | **63,887** | **11,040** | **74,927** |
| 1 | 03 | 02 | 06 | 09 | | Receive System Requirements | 3-Oct-06 | 9-Oct-06 | | C | SL_CP | Hrs | 8 | | 768 | | 768 |
| 1 | 03 | 02 | 06 | 09 | | Receive System Requirements | 3-Oct-06 | 9-Oct-06 | | C | SL_CE | Hrs | 8 | | 949 | | 949 |
| 1 | 03 | 02 | 06 | 09 | | Design Single Beam Dump | 10-Oct-06 | 13-Dec-06 | | C | SL_CP | Hrs | 208 | | 19,958 | | 19,958 |
| 1 | 03 | 02 | 06 | 09 | | Design Single Beam Dump | 10-Oct-06 | 13-Dec-06 | | C | SL_CE | Hrs | 108 | | 12,816 | | 12,816 |
| 1 | 03 | 02 | 06 | 09 | | Design Single Beam Dump | 10-Oct-06 | 13-Dec-06 | | C | SL_CCA | Hrs | 28 | | 1,935 | | 1,935 |
| 1 | 03 | 02 | 06 | 09 | | Single Beam Dump Hardware | 14-Dec-06 | 26-Jan-07 | | C | SL_MSEG | $$ | | 9,600 | | 11,040 | 11,040 |
| 1 | 03 | 02 | 06 | 09 | | Build Single Beam Dump H/W | 29-Jan-07 | 27-Feb-07 | | C | SL_CT | Hrs | 32 | | 2,080 | | 2,080 |
| 1 | 03 | 02 | 06 | 09 | | Write Software - Single Beam Dump | 29-Jan-07 | 26-Feb-07 | S | C | SL_CP | Hrs | 160 | | 15,352 | | 15,352 |
| 1 | 03 | 02 | 06 | 09 | | Write Documentation - Single Beam Dump | 27-Feb-07 | 5-Mar-07 | S | C | SL_CP | Hrs | 20 | | 1,919 | | 1,919 |
| 1 | 03 | 02 | 06 | 09 | | Write Documentation - Single Beam Dump | 27-Feb-07 | 5-Mar-07 | S | C | SL_CE | Hrs | 20 | | 2,373 | | 2,373 |
| 1 | 03 | 02 | 06 | 09 | | Integrate and Test Single Beam Dump | 6-Mar-07 | 21-Mar-07 | | C | SL_CP | Hrs | 40 | | 3,838 | | 3,838 |
| 1 | 03 | 02 | 06 | 09 | | Integrate and Test Single Beam Dump | 6-Mar-07 | 21-Mar-07 | | C | SL_CE | Hrs | 16 | | 1,899 | | 1,899 |
| **1** | **03** | **02** | **06** | **10** | | **Controls - E Beam Dump** | | | | | | | **777** | **-** | **74,239** | **-** | **74,239** |
| 1 | 03 | 02 | 06 | 10 | | Receive System Requirements | 3-Oct-06 | 9-Oct-06 | | C | SL_CP | Hrs | 8 | | 768 | | 768 |
| 1 | 03 | 02 | 06 | 10 | | Receive System Requirements | 3-Oct-06 | 9-Oct-06 | | C | SL_CE | Hrs | 8 | | 949 | | 949 |
| 1 | 03 | 02 | 06 | 10 | | Design E Beam Dump | 10-Oct-06 | 22-Jan-07 | | C | SL_CP | Hrs | 208 | | 19,958 | | 19,958 |
| 1 | 03 | 02 | 06 | 10 | | Design E Beam Dump | 10-Oct-06 | 22-Jan-07 | | C | SL_CE | Hrs | 145 | | 17,207 | | 17,207 |
| 1 | 03 | 02 | 06 | 10 | | Design E Beam Dump | 10-Oct-06 | 22-Jan-07 | | C | SL_CCA | Hrs | 128 | | 8,846 | | 8,846 |
| 1 | 03 | 02 | 06 | 10 | | Build E Beam Dump H/W | 23-Jan-07 | 21-Feb-07 | | C | SL_CT | Hrs | 32 | | 2,080 | | 2,080 |
| 1 | 03 | 02 | 06 | 10 | | Write Software - E Beam Dump | 22-Feb-07 | 21-Mar-07 | S | C | SL_CP | Hrs | 160 | | 15,352 | | 15,352 |
| 1 | 03 | 02 | 06 | 10 | | Write Documentation - E Beam Dump | 22-Mar-07 | 28-Mar-07 | S | C | SL_CP | Hrs | 20 | | 1,919 | | 1,919 |
| 1 | 03 | 02 | 06 | 10 | | Write Documentation - E Beam Dump | 22-Mar-07 | 28-Mar-07 | S | C | SL_CE | Hrs | 20 | | 2,373 | | 2,373 |
| 1 | 03 | 02 | 06 | 10 | | Integrate and Test | 29-Mar-07 | 3-May-07 | | C | SL_CP | Hrs | 40 | | 3,838 | | 3,838 |
| 1 | 03 | 02 | 06 | 10 | | Integrate and Test | 29-Mar-07 | 3-May-07 | | C | SL_CE | Hrs | 8 | | 949 | | 949 |
| **1** | **03** | **02** | **06** | **11** | | **Controls - Protection Collimator** | | | | | | | **777** | **19,957** | **74,336** | **22,352** | **96,688** |
| 1 | 03 | 02 | 06 | 11 | | Receive System Requirements | 10-Apr-06 | 14-Apr-06 | | C | SL_CP | Hrs | 8 | | 748 | | 748 |
| 1 | 03 | 02 | 06 | 11 | | Receive System Requirements | 10-Apr-06 | 14-Apr-06 | | C | SL_CE | Hrs | 8 | | 925 | | 925 |
| 1 | 03 | 02 | 06 | 11 | | Design Moveable Protection Collimator | 17-Apr-06 | 3-Jul-06 | | C | SL_CP | Hrs | 208 | | 19,452 | | 19,452 |
| 1 | 03 | 02 | 06 | 11 | | Design Moveable Protection Collimator | 17-Apr-06 | 3-Jul-06 | | C | SL_CE | Hrs | 185 | | 21,397 | | 21,397 |
| 1 | 03 | 02 | 06 | 11 | | Design Moveable Protection Collimator | 17-Apr-06 | 3-Jul-06 | | C | SL_CCA | Hrs | 88 | | 5,928 | | 5,928 |
| 1 | 03 | 02 | 06 | 11 | | Movable Collimator Hardware | 5-Jul-06 | 1-Aug-06 | | C | SL_MSEG | $$ | | 19,957 | | 22,352 | 22,352 |
| 1 | 03 | 02 | 06 | 11 | | Build Collimator H/W | 5-Jul-06 | 2-Aug-06 | | C | SL_CT | Hrs | 32 | | 2,027 | | 2,027 |
| 1 | 03 | 02 | 06 | 11 | | Write Software - Prot Collimator | 3-Aug-06 | 30-Aug-06 | S | C | SL_CP | Hrs | 160 | | 14,963 | | 14,963 |
| 1 | 03 | 02 | 06 | 11 | | Write Documentation - Prot Collimator | 31-Aug-06 | 7-Sep-06 | S | C | SL_CP | Hrs | 20 | | 1,870 | | 1,870 |
| 1 | 03 | 02 | 06 | 11 | | Write Documentation - Prot Collimator | 31-Aug-06 | 7-Sep-06 | S | C | SL_CE | Hrs | 20 | | 2,313 | | 2,313 |
| 1 | 03 | 02 | 06 | 11 | | Integrate and Test | 8-Sep-06 | 13-Oct-06 | | C | SL_CP | Hrs | 40 | | 3,778 | | 3,778 |
| 1 | 03 | 02 | 06 | 11 | | Integrate and Test | 8-Sep-06 | 13-Oct-06 | | C | SL_CE | Hrs | 8 | | 935 | | 935 |
| **1** | **03** | **02** | **06** | **12** | | **Controls - Movable Collimator** | | | | | | | **841** | **-** | **78,691** | **-** | **78,691** |
| 1 | 03 | 02 | 06 | 12 | | Receive System Requirements | 1-Jul-05 | 8-Jul-05 | | P | SL_CP | Hrs | 8 | | 728 | | 728 |

| WBS Level | | | | | | LCLA DCE March-2005 | Early | Early | OBS | Fund | Res | Units | Budgeted Quantity | | Fully Burdened and Escalated Cost | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Run Time: 4/2205 8:43am | | | | | | Description | Start | Finish | | Type | Code | | Hours | $$ | Labor | M&S | Total (No Conting) |
| 1 | 2 | 3 | 4 | 5 | 6 | | | | | | | | | | | | |
| 1 | 03 | 02 | 06 | 12 | | Receive System Requirements | 1-Jul-05 | 8-Jul-05 | | P | SL_CE | Hrs | 8 | | 900 | | 900 |
| 1 | 03 | 02 | 06 | 12 | | Design Collimator Controls | 1-Jul-05 | 27-Sep-05 | | P | SL_CP | Hrs | 200 | | 18,194 | | 18,194 |
| 1 | 03 | 02 | 06 | 12 | | Design Collimator Controls | 1-Jul-05 | 27-Sep-05 | | P | SL_CE | Hrs | 145 | | 16,314 | | 16,314 |
| 1 | 03 | 02 | 06 | 12 | | Design Collimator Controls | 1-Jul-05 | 27-Sep-05 | | P | SL_CCA | Hrs | 128 | | 8,388 | | 8,388 |
| 1 | 03 | 02 | 06 | 12 | | Build Collimator H/W | 3-Oct-05 | 31-Oct-05 | | C | SL_CT | Hrs | 32 | | 2,027 | | 2,027 |
| 1 | 03 | 02 | 06 | 12 | | Write Software - Movable Collimator | 1-Nov-05 | 30-Nov-05 | S | C | SL_CP | Hrs | 160 | | 14,963 | | 14,963 |
| 1 | 03 | 02 | 06 | 12 | | Write Documentation - Movable Collimator | 1-Dec-05 | 7-Dec-05 | S | C | SL_CP | Hrs | 20 | | 1,870 | | 1,870 |
| 1 | 03 | 02 | 06 | 12 | | Write Documentation - Movable Collimator | 1-Dec-05 | 7-Dec-05 | S | C | SL_CE | Hrs | 20 | | 2,313 | | 2,313 |
| 1 | 03 | 02 | 06 | 12 | | Integrate and Test | 8-Dec-05 | 30-Jan-06 | | C | SL_CP | Hrs | 40 | | 3,741 | | 3,741 |
| 1 | 03 | 02 | 06 | 12 | | Integrate and Test | 8-Dec-05 | 30-Jan-06 | | C | SL_CE | Hrs | 80 | | 9,253 | | 9,253 |
| **1** | **03** | **02** | **06** | **13** | | **Controls - X-Band Accel Structure** | | | | | | | **769** | **-** | **71,609** | **-** | **71,609** |
| 1 | 03 | 02 | 06 | 13 | | Receive System Requirements | 3-Oct-05 | 7-Oct-05 | | P | SL_CP | Hrs | 8 | | 748 | | 748 |
| 1 | 03 | 02 | 06 | 13 | | Receive System Requirements | 3-Oct-05 | 7-Oct-05 | | P | SL_CE | Hrs | 8 | | 925 | | 925 |
| 1 | 03 | 02 | 06 | 13 | | Design X Band Controls | 10-Oct-05 | 20-Jan-06 | | C | SL_CP | Hrs | 200 | | 18,704 | | 18,704 |
| 1 | 03 | 02 | 06 | 13 | | Design X Band Controls | 10-Oct-05 | 20-Jan-06 | | C | SL_CE | Hrs | 145 | | 16,771 | | 16,771 |
| 1 | 03 | 02 | 06 | 13 | | Design X Band Controls | 10-Oct-05 | 20-Jan-06 | | C | SL_CCA | Hrs | 128 | | 8,622 | | 8,622 |
| 1 | 03 | 02 | 06 | 13 | | Build X-Band H/W | 23-Jan-06 | 17-Feb-06 | | C | SL_CT | Hrs | 32 | | 2,027 | | 2,027 |
| 1 | 03 | 02 | 06 | 13 | | Write Software - X Band Accel Structure | 23-Jan-06 | 17-Feb-06 | S | C | SL_CP | Hrs | 160 | | 14,963 | | 14,963 |
| 1 | 03 | 02 | 06 | 13 | | Write Documentation - X Band Accel Structure | 21-Feb-06 | 27-Feb-06 | S | C | SL_CP | Hrs | 20 | | 1,870 | | 1,870 |
| 1 | 03 | 02 | 06 | 13 | | Write Documentation - X Band Accel Structure | 21-Feb-06 | 27-Feb-06 | S | C | SL_CE | Hrs | 20 | | 2,313 | | 2,313 |
| 1 | 03 | 02 | 06 | 13 | | Integrate and Test | 28-Feb-06 | 4-Apr-06 | | C | SL_CP | Hrs | 40 | | 3,741 | | 3,741 |
| 1 | 03 | 02 | 06 | 13 | | Integrate and Test | 28-Feb-06 | 4-Apr-06 | | C | SL_CE | Hrs | 8 | | 925 | | 925 |
| **1** | **03** | **02** | **07** | | | **Controls - Laser** | | | | | | | | | | | |
| **1** | **03** | **02** | **08** | | | **Controls Timing** | | | | | | | **16** | **72,000** | **1,825** | **80,640** | **82,465** |
| 1 | 03 | 02 | 08 | | | Prep Bid Pak - Linac Timing Modules | 20-Sep-05 | 26-Sep-05 | | P | SL_CE | Hrs | 8 | | 900 | | 900 |
| 1 | 03 | 02 | 08 | | | Evaluate Vendor Proposals | 4-Oct-05 | 10-Oct-05 | | P | SL_CE | Hrs | 8 | | 925 | | 925 |
| 1 | 03 | 02 | 08 | | | Vendor Fab & Assy - Timing modules (SLC to VME) | 12-Oct-05 | 8-Dec-05 | | C | SA_MSEG | $$ | | 72,000 | | 80,640 | 80,640 |
| **1** | **03** | **02** | **09** | | | **Controls - Vacuum** | | | | | | | **861** | **174,110** | **80,206** | **195,003** | **275,209** |
| **1** | **03** | **02** | **09** | **01** | | **Interlocks** | | | | | | | **861** | **54,110** | **80,206** | **60,603** | **140,809** |
| 1 | 03 | 02 | 09 | 01 | | Receive System Requirements | 3-Oct-05 | 7-Oct-05 | | P | SL_CP | Hrs | 8 | | 748 | | 748 |
| 1 | 03 | 02 | 09 | 01 | | Receive System Requirements | 3-Oct-05 | 7-Oct-05 | | P | SL_CE | Hrs | 8 | | 925 | | 925 |
| 1 | 03 | 02 | 09 | 01 | | Design - Vacuum Instrumentation | 10-Oct-05 | 2-Feb-06 | | P | SL_CP | Hrs | 80 | | 7,482 | | 7,482 |
| 1 | 03 | 02 | 09 | 01 | | Design - Vacuum Instrumentation | 10-Oct-05 | 2-Feb-06 | | P | SL_CE | Hrs | 213 | | 24,636 | | 24,636 |
| 1 | 03 | 02 | 09 | 01 | | Design - Vacuum Instrumentation | 10-Oct-05 | 2-Feb-06 | | P | SL_CCA | Hrs | 208 | | 14,011 | | 14,011 |
| 1 | 03 | 02 | 09 | 01 | | Prep Bid Pak - Vac H/W | 3-Feb-06 | 9-Feb-06 | S | C | SL_CE | Hrs | 24 | | 2,776 | | 2,776 |
| 1 | 03 | 02 | 09 | 01 | | Evaluate Vendor Proposals - Vac H/W | 17-Feb-06 | 24-Feb-06 | S | C | SL_CE | Hrs | 24 | | 2,776 | | 2,776 |
| 1 | 03 | 02 | 09 | 01 | | Procure Vacuum Instrumentation & Iterlocks H/W | 3-Feb-06 | 3-Mar-06 | | C | SL_MSEG | $$ | | 54,110 | | 60,603 | 60,603 |
| 1 | 03 | 02 | 09 | 01 | | Build Vacuum Control H/W | 28-Mar-06 | 4-Apr-06 | S | C | SL_CT | Hrs | 48 | | 3,040 | | 3,040 |
| 1 | 03 | 02 | 09 | 01 | | Write Software - Vac Controls | 5-Apr-06 | 11-Apr-06 | S | C | SL_CP | Hrs | 160 | | 14,963 | | 14,963 |
| 1 | 03 | 02 | 09 | 01 | | Write Documentation - Vac Controls | 12-Apr-06 | 18-Apr-06 | S | C | SL_CP | Hrs | 20 | | 1,870 | | 1,870 |
| 1 | 03 | 02 | 09 | 01 | | Write Documentation - Vac Controls | 12-Apr-06 | 18-Apr-06 | S | C | SL_CE | Hrs | 20 | | 2,313 | | 2,313 |
| 1 | 03 | 02 | 09 | 01 | | Integrate & Test | 19-Apr-06 | 30-May-06 | | C | SL_CP | Hrs | 40 | | 3,741 | | 3,741 |
| 1 | 03 | 02 | 09 | 01 | | Integrate & Test | 19-Apr-06 | 30-May-06 | | C | SL_CE | Hrs | 8 | | 925 | | 925 |
| **1** | **03** | **02** | **09** | **02** | | **Vacuum Instrumentation & Controls** | | | | | | | **-** | **120,000** | **-** | **134,400** | **134,400** |
| 1 | 03 | 02 | 09 | 02 | | Vendor Fab & Assy - Vacuum Valve Chassis (4) | 28-Feb-06 | 27-Mar-06 | S | C | SA_MSEG | $$ | | 120,000 | | 134,400 | 134,400 |
| **1** | **03** | **02** | **10** | | | **Software & Controls Infrastructure** | | | | | | | **1,548** | **447,875** | **138,464** | **501,620** | **640,084** |
| **1** | **03** | **02** | **10** | **01** | | **Low Level Application Software** | | | | | | | | | | | |
| **1** | **03** | **02** | **10** | **02** | | **Software Utilities** | | | | | | | | | | | |
| **1** | **03** | **02** | **10** | **03** | | **Device Support** | | | | | | | | | | | |
| **1** | **03** | **02** | **10** | **04** | | **Data Communications** | | | | | | | **372** | **46,275** | **25,534** | **51,828** | **77,362** |
| 1 | 03 | 02 | 10 | 04 | | Supervise Equipment Installation | 11-Jul-05 | 19-Aug-05 | | P | SL_CCA | Hrs | 135 | | 8,847 | | 8,847 |
| 1 | 03 | 02 | 10 | 04 | | SEM Install Wall Board | 23-Aug-05 | 6-Sep-05 | | P | SL_TMUC | Hrs | 3 | | 224 | | 224 |
| 1 | 03 | 02 | 10 | 04 | | SEM Install Two 20 A Circuits | 7-Sep-05 | 4-Oct-05 | | P | SL_TMUE | Hrs | 24 | | 2,318 | | 2,318 |
| 1 | 03 | 02 | 10 | 04 | | Procure Singlemode Fiber | 6-Oct-05 | 16-Dec-05 | | P | SL_MSEG | $$ | | 16,875 | | 18,900 | 18,900 |
| 1 | 03 | 02 | 10 | 04 | | Fiber Cabling Installation | 3-Jan-06 | 31-Jan-06 | | L | SL_CCA | Hrs | 96 | | 6,467 | | 6,467 |
| 1 | 03 | 02 | 10 | 04 | | Fiber Termination | 1-Feb-06 | 26-Apr-06 | | L | SL_MSEG | $$ | | 5,400 | | 6,048 | 6,048 |
| 1 | 03 | 02 | 10 | 04 | | Cabling Installation in Ground & Sub Ground Loc | 28-Apr-06 | 25-May-06 | | C | SL_CCA | Hrs | 48 | | 3,233 | | 3,233 |
| 1 | 03 | 02 | 10 | 04 | | Cable Termination | 26-May-06 | 23-Jun-06 | | C | SL_CCA | Hrs | 48 | | 3,233 | | 3,233 |
| 1 | 03 | 02 | 10 | 04 | | Procure Cisco 3550-24 Hubs (6ea) | 26-Jul-06 | 22-Aug-06 | | C | SL_MSEG | $$ | | 24,000 | | 26,880 | 26,880 |
| 1 | 03 | 02 | 10 | 04 | | Hub Installation & Data Circuit Activiation | 23-Aug-06 | 20-Sep-06 | | C | SL_CCA | Hrs | 18 | | 1,212 | | 1,212 |
| **1** | **03** | **02** | **10** | **05** | | **Computers** | | | | | | | **1,176** | **401,600** | **112,930** | **449,792** | **562,722** |
| 1 | 03 | 02 | 10 | 05 | | Provide Hardware Engineer & Systems Integ Sup | 12-Jul-05 | 15-Dec-06 | | P | SL_CE | Hrs | 712 | | 82,303 | | 82,303 |
| 1 | 03 | 02 | 10 | 05 | | Design VME Crates, Control & Support Modules | 12-Jul-05 | 16-Dec-05 | | P | SL_CCA | Hrs | 120 | | 7,968 | | 7,968 |
| 1 | 03 | 02 | 10 | 05 | | Prep Bid Pak - VME Crates/IOCs/Interface Chassis | 3-Jan-06 | 9-Jan-06 | | P | SL_CCA | Hrs | 16 | | 1,078 | | 1,078 |

| WBS Level | | | | | | LCLA DCE March-2005 | Early | Early | OBS | Fund | Res | Units | Budgeted Quantity | | Fully Burdened and Escalated Cost | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Run Time: 4/2205 8:43am | | | | | | Description | Start | Finish | | Type | Code | | Hours | $$ | Labor | M&S | Total (No Conting) |
| 1 | 2 | 3 | 4 | 5 | 6 | | | | | | | | | | | | |
| 1 | 03 | 02 | 10 | 05 | | Evaluate Vendors Proposals | 18-Jan-06 | 24-Jan-06 | | C | SL_CCA | Hrs | 16 | | 1,078 | | 1,078 |
| 1 | 03 | 02 | 10 | 05 | | Vendor Fab/Assy VME Crates/IOCs/Interface Chssis | 26-Jan-06 | 20-Apr-06 | | C | SA_MSEG | $$ | | 75,000 | | 84,000 | 84,000 |
| 1 | 03 | 02 | 10 | 05 | | Prep Bid Pak - VME Crates for BPMs | 3-Jan-06 | 9-Jan-06 | | P | SL_CCA | Hrs | 16 | | 1,078 | | 1,078 |
| 1 | 03 | 02 | 10 | 05 | | Evaluate Vendors Proposals | 18-Jan-06 | 24-Jan-06 | | C | SL_CCA | Hrs | 16 | | 1,078 | | 1,078 |
| 1 | 03 | 02 | 10 | 05 | | Vendor Fab & Assy - VME Crates for BPMs | 26-Jan-06 | 20-Apr-06 | | C | SA_MSEG | $$ | | 273,000 | | 305,760 | 305,760 |
| 1 | 03 | 02 | 10 | 05 | | Prep Bid Pak -VME Crates/Cntrl/Supt Chassis | 3-Jan-06 | 9-Jan-06 | | P | SL_CCA | Hrs | 16 | | 1,078 | | 1,078 |
| 1 | 03 | 02 | 10 | 05 | | Evaluate Vendors Proposals | 18-Jan-06 | 24-Jan-06 | | C | SL_CCA | Hrs | 16 | | 1,078 | | 1,078 |
| 1 | 03 | 02 | 10 | 05 | | Vendor Fab & Assy -VME Crates/Cntrl/Supt Chassis | 26-Jan-06 | 20-Apr-06 | | C | SA_MSEG | $$ | | 47,900 | | 53,648 | 53,648 |
| 1 | 03 | 02 | 10 | 05 | | Procure Cableplant | 3-Jan-06 | 29-Mar-06 | | C | SL_MSEG | $$ | | 1,200 | | 1,344 | 1,344 |
| 1 | 03 | 02 | 10 | 05 | | Procure VME System I/O Distribution Cableplant | 3-Jan-06 | 29-Mar-06 | | C | SL_MSEG | $$ | | 4,500 | | 5,040 | 5,040 |
| 1 | 03 | 02 | 10 | 05 | | Assemble and Integrate Equipment | 21-Apr-06 | 2-Jun-06 | | C | SL_CCA | Hrs | 120 | | 8,083 | | 8,083 |
| 1 | 03 | 02 | 10 | 05 | | Conduct Pre-Install Testing | 5-Jun-06 | 17-Jul-06 | | C | SL_CT | Hrs | 128 | | 8,108 | | 8,108 |
| **1** | **04** | **02** | | | | **Controls** | | | | | | | **12,016** | **2,314,835** | **1,044,697** | **2,474,567** | **3,519,264** |
| **1** | **04** | **02** | **01** | | | **Controls Management & Integration** | | | | | | | **756** | **-** | **70,399** | **-** | **70,399** |
| **1** | **04** | **02** | **01** | **03** | | **Software Interface with SLAC** | | | | | | | **486** | **-** | **44,595** | **-** | **44,595** |
| 1 | 04 | 02 | 01 | 03 | | Advise on overall controls system integration | 4-Oct-04 | 30-Sep-05 | A | P | AN_CE | Hrs | 486 | | 44,595 | | 44,595 |
| **1** | **04** | **02** | **01** | **04** | | **Undulator Cable & Rack Layout** | | | | | | | **270** | **-** | **25,804** | **-** | **25,804** |
| 1 | 04 | 02 | 01 | 04 | | Generate schematic-controls hardway, rack, tray | 3-Jan-05 | 28-Feb-05 | 2 | P | AN_CE | Hrs | 40 | | 3,670 | | 3,670 |
| 1 | 04 | 02 | 01 | 04 | | Estimate motor cable runs | 1-Mar-05 | 7-Mar-05 | 2 | P | AN_CE | Hrs | 10 | | 918 | | 918 |
| 1 | 04 | 02 | 01 | 04 | | Estimate imaging cable runs | 1-Mar-05 | 7-Mar-05 | 2 | P | AN_CE | Hrs | 10 | | 918 | | 918 |
| 1 | 04 | 02 | 01 | 04 | | Estimate vacuum cable runs | 1-Mar-05 | 7-Mar-05 | 2 | P | AN_MVE | Hrs | 10 | | 861 | | 861 |
| 1 | 04 | 02 | 01 | 04 | | Estimate vacuum cable runs | 1-Mar-05 | 7-Mar-05 | 2 | P | AN_CE | Hrs | 40 | | 3,670 | | 3,670 |
| 1 | 04 | 02 | 01 | 04 | | Estimate BPM cable runs | 1-Jul-05 | 8-Jul-05 | 2 | P | AN_CE | Hrs | 20 | | 1,835 | | 1,835 |
| 1 | 04 | 02 | 01 | 04 | | Estimate WPM and HLS cable runs | 1-Jun-05 | 7-Jun-05 | 2 | P | SL_CE | Hrs | 40 | | 4,500 | | 4,500 |
| 1 | 04 | 02 | 01 | 04 | | Estimate MPS cable runs | 3-Oct-05 | 7-Oct-05 | 2 | P | AN_CE | Hrs | 20 | | 1,886 | | 1,886 |
| 1 | 04 | 02 | 01 | 04 | | Generate UN Hall cable, tray, rack document | 10-Oct-05 | 11-Nov-05 | 2 | P | AN_CE | Hrs | 80 | | 7,546 | | 7,546 |
| **1** | **04** | **02** | **02** | | | **Motion** | | | | | | | **3,872** | **1,101,317** | **332,536** | **1,170,663** | **1,503,199** |
| **1** | **04** | **02** | **02** | **01** | | **Fine Motion** | | | | | | | **1,671** | **840,500** | **146,786** | **894,905** | **1,041,691** |
| **1** | **04** | **02** | **02** | **01** | **01** | **Motor Interface** | | | | | | | **128** | **218,000** | **10,707** | **231,080** | **241,787** |
| 1 | 04 | 02 | 02 | 01 | 01 | Specify prototype motor interface | 17-Jan-06 | 30-Jan-06 | A | C | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 02 | 01 | 01 | Procure prototype motor interfaces | 31-Jan-06 | 31-Jan-06 | A | C | AN_MSEG | $$ | | 3,000 | | 3,180 | 3,180 |
| 1 | 04 | 02 | 02 | 01 | 01 | Procure prototype motor interfaces | 31-Jan-06 | 31-Jan-06 | A | C | AN_CE | Hrs | 4 | | 377 | | 377 |
| 1 | 04 | 02 | 02 | 01 | 01 | Receive prototype motor interfaces | 1-Feb-06 | 1-Mar-06 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 02 | 01 | 01 | Write QA procedure for Motor interface | 2-Mar-06 | 7-Mar-06 | A | C | AN_CE | Hrs | 12 | | 1,132 | | 1,132 |
| 1 | 04 | 02 | 02 | 01 | 01 | Prepare Bid Package for Motor interface | 8-Mar-06 | 13-Mar-06 | A | C | AN_CE | Hrs | 24 | | 2,264 | | 2,264 |
| 1 | 04 | 02 | 02 | 01 | 01 | Evaluate Proposal for Motor interface | 29-Mar-06 | 4-Apr-06 | A | C | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 02 | 01 | 01 | Receive production motor interface | 6-Apr-06 | 1-Jun-06 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 02 | 01 | 01 | Receive production motor interface | 6-Apr-06 | 1-Jun-06 | A | C | AA_MSEG | $$ | | 215,000 | | 227,900 | 227,900 |
| 1 | 04 | 02 | 02 | 01 | 01 | QA Test motor interface | 2-Jun-06 | 15-Jun-06 | A | C | AN_CT | Hrs | 40 | | 2,406 | | 2,406 |
| **1** | **04** | **02** | **02** | **01** | **02** | **Encoder Interface** | | | | | | | **128** | **261,000** | **10,707** | **276,660** | **287,367** |
| 1 | 04 | 02 | 02 | 01 | 02 | Specify prototype encoder interface | 17-Jan-06 | 30-Jan-06 | A | C | AN_CE | Hrs | 20 | | 1,886 | | 1,886 |
| 1 | 04 | 02 | 02 | 01 | 02 | Procure prototype encoder interface | 31-Jan-06 | 31-Jan-06 | A | C | AN_MSEG | $$ | | 3,000 | | 3,180 | 3,180 |
| 1 | 04 | 02 | 02 | 01 | 02 | Receive prototype encoder interface | 1-Feb-06 | 1-Mar-06 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 02 | 01 | 02 | Write QA procedure for Encoder interface | 2-Mar-06 | 7-Mar-06 | A | C | AN_CE | Hrs | 12 | | 1,132 | | 1,132 |
| 1 | 04 | 02 | 02 | 01 | 02 | Prepare Bid Package for Encoder interface | 8-Mar-06 | 13-Mar-06 | A | C | AN_CE | Hrs | 24 | | 2,264 | | 2,264 |
| 1 | 04 | 02 | 02 | 01 | 02 | Evaluate Proposal for Encoder interface | 29-Mar-06 | 4-Apr-06 | A | C | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 02 | 01 | 02 | Receive production encoder interface | 6-Apr-06 | 1-Jun-06 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 02 | 01 | 02 | Receive production encoder interface | 6-Apr-06 | 1-Jun-06 | A | C | AA_MSEG | $$ | | 258,000 | | 273,480 | 273,480 |
| 1 | 04 | 02 | 02 | 01 | 02 | QA Test encoder interface | 2-Jun-06 | 15-Jun-06 | A | C | AN_CT | Hrs | 40 | | 2,406 | | 2,406 |
| **1** | **04** | **02** | **02** | **01** | **03** | **Motor Driver** | | | | | | | **117** | **109,500** | **9,751** | **119,295** | **129,046** |
| 1 | 04 | 02 | 02 | 01 | 03 | Specify prototype motor driver | 17-Jan-06 | 23-Jan-06 | A | C | AN_CE | Hrs | 13 | | 1,226 | | 1,226 |
| 1 | 04 | 02 | 02 | 01 | 03 | Procure prototype motor driver | 24-Jan-06 | 24-Jan-06 | A | C | AN_MSEG | $$ | | 2,000 | | 2,120 | 2,120 |
| 1 | 04 | 02 | 02 | 01 | 03 | Receive prototype motor driver | 25-Jan-06 | 22-Feb-06 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 02 | 01 | 03 | Write QA procedure for motor driver | 23-Feb-06 | 24-Feb-06 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 02 | 01 | 03 | Prepare Bid Package for motor driver | 27-Feb-06 | 2-Mar-06 | A | C | AN_CE | Hrs | 24 | | 2,264 | | 2,264 |
| 1 | 04 | 02 | 02 | 01 | 03 | Evaluate Proposal for motor driver | 20-Mar-06 | 24-Mar-06 | A | C | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 02 | 01 | 03 | Receive production motor driver | 3-Oct-06 | 30-Oct-06 | A | C | AN_CE | Hrs | 8 | | 774 | | 774 |
| 1 | 04 | 02 | 02 | 01 | 03 | Receive production motor driver | 3-Oct-06 | 30-Oct-06 | A | C | AA_MSEG | $$ | | 107,500 | | 117,175 | 117,175 |
| 1 | 04 | 02 | 02 | 01 | 03 | QA Motor Driver | 31-Oct-06 | 13-Nov-06 | A | C | AN_CT | Hrs | 40 | | 2,468 | | 2,468 |
| **1** | **04** | **02** | **02** | **01** | **04** | **Cabling** | | | | | | | **224** | **217,000** | **18,395** | **230,020** | **248,415** |
| 1 | 04 | 02 | 02 | 01 | 04 | Design motor drive cables | 2-Mar-06 | 8-Mar-06 | A | C | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 02 | 01 | 04 | Design encoder signal cables | 2-Mar-06 | 8-Mar-06 | A | C | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 02 | 01 | 04 | Specify cables | 9-Mar-06 | 14-Mar-06 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 02 | 01 | 04 | Specify connectors | 9-Mar-06 | 10-Mar-06 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |

| WBS Level | | | | | | LCLA DCE March-2005 | Early | Early | OBS | Fund | Res | Units | Budgeted Quantity | | Fully Burdened and Escalated Cost | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Run Time: 4/2205 8:43am | | | | | | Description | Start | Finish | | Type | Code | | Hours | $$ | Labor | M&S | Total (No Conting) |
| 1 | 2 | 3 | 4 | 5 | 6 | | | | | | | | | | | | |
| 1 | 04 | 02 | 02 | 01 | 04 | Procure prototype parts | 15-Mar-06 | 15-Mar-06 | A | C | AN_MSEG | $$ | | 2,000 | | 2,120 | 2,120 |
| 1 | 04 | 02 | 02 | 01 | 04 | Receive prototype parts | 16-Mar-06 | 19-Apr-06 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 02 | 01 | 04 | Assemble prototype cables | 20-Apr-06 | 26-Apr-06 | A | C | AN_CT | Hrs | 24 | | 1,443 | | 1,443 |
| 1 | 04 | 02 | 02 | 01 | 04 | Test prototype cables | 27-Apr-06 | 3-May-06 | A | C | AN_CT | Hrs | 16 | | 962 | | 962 |
| 1 | 04 | 02 | 02 | 01 | 04 | Specify production cables | 4-May-06 | 17-May-06 | A | C | AN_CE | Hrs | 32 | | 3,018 | | 3,018 |
| 1 | 04 | 02 | 02 | 01 | 04 | Write QA procedure for production cables | 18-May-06 | 19-May-06 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 02 | 01 | 04 | Prepare Bid Package for production cables | 22-May-06 | 26-May-06 | A | C | AN_CE | Hrs | 24 | | 2,264 | | 2,264 |
| 1 | 04 | 02 | 02 | 01 | 04 | Evaluate Proposal for production cables | 14-Jun-06 | 20-Jun-06 | A | C | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 02 | 01 | 04 | Receive production cables | 22-Jun-06 | 3-Aug-06 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 02 | 01 | 04 | Receive production cables | 22-Jun-06 | 3-Aug-06 | A | C | AA_MSEG | $$ | | 215,000 | | 227,900 | 227,900 |
| 1 | 04 | 02 | 02 | 01 | 04 | QA Test production cables | 4-Aug-06 | 17-Aug-06 | A | C | AN_CT | Hrs | 40 | | 2,406 | | 2,406 |
| **1** | **04** | **02** | **02** | **01** | **05** | **Integrate components** | | | | | | | **1,074** | **35,000** | **97,226** | **37,850** | **135,076** |
| 1 | 04 | 02 | 02 | 01 | 05 | Write control Software Requirements Spec. | 31-Jan-06 | 28-Feb-06 | A | C | AN_CE | Hrs | 40 | | 3,773 | | 3,773 |
| 1 | 04 | 02 | 02 | 01 | 05 | Design control software | 1-Mar-06 | 28-Mar-06 | A | C | AN_CP | Hrs | 40 | | 3,773 | | 3,773 |
| 1 | 04 | 02 | 02 | 01 | 05 | Write testing Software Requirements Spec. | 29-Mar-06 | 25-Apr-06 | A | C | AN_CP | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 02 | 01 | 05 | Procure commercial software | 26-Apr-06 | 26-Apr-06 | A | C | AN_MSEG | $$ | | 5,000 | | 5,300 | 5,300 |
| 1 | 04 | 02 | 02 | 01 | 05 | Write control software | 27-Apr-06 | 24-May-06 | A | C | AN_CP | Hrs | 438 | | 41,312 | | 41,312 |
| 1 | 04 | 02 | 02 | 01 | 05 | Test control software | 25-May-06 | 8-Jun-06 | A | C | AN_CE | Hrs | 40 | | 3,773 | | 3,773 |
| 1 | 04 | 02 | 02 | 01 | 05 | Design prototype test setup | 9-Jun-06 | 22-Jun-06 | A | C | AN_CE | Hrs | 40 | | 3,773 | | 3,773 |
| 1 | 04 | 02 | 02 | 01 | 05 | Prepare for design review | 23-Jun-06 | 29-Jun-06 | A | C | AN_CE | Hrs | 24 | | 2,264 | | 2,264 |
| 1 | 04 | 02 | 02 | 01 | 05 | Conduct design review | 30-Jun-06 | 14-Jul-06 | A | C | AN_CP | Hrs | 80 | | 7,546 | | 7,546 |
| 1 | 04 | 02 | 02 | 01 | 05 | Procure integration components for prototype | 17-Jul-06 | 18-Jul-06 | A | C | AN_MSEG | $$ | | 5,000 | | 5,300 | 5,300 |
| 1 | 04 | 02 | 02 | 01 | 05 | Receive integration components for prototype | 19-Jul-06 | 29-Aug-06 | A | C | AN_CT | Hrs | 8 | | 481 | | 481 |
| 1 | 04 | 02 | 02 | 01 | 05 | Assemble prototype | 30-Aug-06 | 13-Sep-06 | A | C | AN_CT | Hrs | 40 | | 2,406 | | 2,406 |
| 1 | 04 | 02 | 02 | 01 | 05 | Write integrated test procedure | 14-Sep-06 | 20-Sep-06 | A | C | AN_CE | Hrs | 12 | | 1,132 | | 1,132 |
| 1 | 04 | 02 | 02 | 01 | 05 | Assemble test setup | 21-Sep-06 | 27-Sep-06 | A | C | AN_CT | Hrs | 16 | | 962 | | 962 |
| 1 | 04 | 02 | 02 | 01 | 05 | Perform prototype testing | 28-Sep-06 | 4-Oct-06 | A | C | AN_CT | Hrs | 16 | | 977 | | 977 |
| 1 | 04 | 02 | 02 | 01 | 05 | Perform prototype testing | 28-Sep-06 | 4-Oct-06 | A | C | AN_CP | Hrs | 40 | | 3,832 | | 3,832 |
| 1 | 04 | 02 | 02 | 01 | 05 | Write validation procedure | 5-Oct-06 | 11-Oct-06 | A | C | AN_CE | Hrs | 12 | | 1,161 | | 1,161 |
| 1 | 04 | 02 | 02 | 01 | 05 | Design installation layout and plan | 12-Oct-06 | 8-Nov-06 | A | C | AN_CE | Hrs | 40 | | 3,871 | | 3,871 |
| 1 | 04 | 02 | 02 | 01 | 05 | Procure production integration components | 9-Nov-06 | 10-Nov-06 | A | C | AN_MSEG | $$ | | 25,000 | | 27,250 | 27,250 |
| 1 | 04 | 02 | 02 | 01 | 05 | Receive production integration components | 13-Nov-06 | 10-Jan-07 | A | C | AN_CT | Hrs | 16 | | 987 | | 987 |
| 1 | 04 | 02 | 02 | 01 | 05 | QA Test production integration components | 11-Jan-07 | 25-Jan-07 | A | C | AN_CT | Hrs | 40 | | 2,468 | | 2,468 |
| 1 | 04 | 02 | 02 | 01 | 05 | QA Test production integration components | 11-Jan-07 | 25-Jan-07 | A | C | AN_CP | Hrs | 116 | | 11,226 | | 11,226 |
| **1** | **04** | **02** | **02** | **02** | | **Motion Test Stand** | | | | | | | **206** | **16,000** | **16,483** | **16,402** | **32,885** |
| 1 | 04 | 02 | 02 | 02 | | Test smart motor at APS | 31-May-05 | 24-Aug-05 | | P | AN_PHS | Hrs | 16 | | 1,377 | | 1,377 |
| 1 | 04 | 02 | 02 | 02 | | Test smart motor at APS | 31-May-05 | 24-Aug-05 | | P | AN_CT | Hrs | 20 | | 1,170 | | 1,170 |
| 1 | 04 | 02 | 02 | 02 | | Test smart motor at APS | 31-May-05 | 24-Aug-05 | | P | AN_CE | Hrs | 40 | | 3,670 | | 3,670 |
| 1 | 04 | 02 | 02 | 02 | | Evaluate motor choices | 22-Feb-05 | 28-Feb-05 | 2 | P | AN_CE | Hrs | 10 | | 918 | | 918 |
| 1 | 04 | 02 | 02 | 02 | | Procure motors for motion test stand | 7-Mar-05 | 13-May-05 | 2 | P | AN_MSEG | $$ | | 2,000 | | 2,042 | 2,042 |
| 1 | 04 | 02 | 02 | 02 | | Evaluate motion controller choices | 1-Mar-05 | 7-Mar-05 | 2 | P | AN_CE | Hrs | 10 | | 918 | | 918 |
| 1 | 04 | 02 | 02 | 02 | | Procure motions controllers-motion test stand | 7-Feb-05 | 8-Mar-05 | 2 | P | AN_MSEG | $$ | | 4,000 | | 4,060 | 4,060 |
| 1 | 04 | 02 | 02 | 02 | | Evaluate host choices | 7-Feb-05 | 11-Feb-05 | 2 | P | AN_CE | Hrs | 40 | | 3,670 | | 3,670 |
| 1 | 04 | 02 | 02 | 02 | | Procure host for motion test stand | 14-Feb-05 | 15-Mar-05 | 2 | P | AN_MSEG | $$ | | 10,000 | | 10,300 | 10,300 |
| 1 | 04 | 02 | 02 | 02 | | Assemble components | 16-May-05 | 20-May-05 | 2 | P | AN_CT | Hrs | 40 | | 2,340 | | 2,340 |
| 1 | 04 | 02 | 02 | 02 | | Test stand checkout | 23-May-05 | 27-May-05 | 2 | P | AN_CT | Hrs | 10 | | 585 | | 585 |
| 1 | 04 | 02 | 02 | 02 | | Test stand checkout | 23-May-05 | 27-May-05 | 2 | P | AN_CE | Hrs | 20 | | 1,835 | | 1,835 |
| **1** | **04** | **02** | **02** | **06** | | **Scanning WIre Motion** | | | | | | | **1,012** | **79,317** | **87,528** | **84,076** | **171,604** |
| **1** | **04** | **02** | **02** | **06** | **01** | **Motor Interface** | | | | | | | **112** | **22,818** | **9,198** | **24,187** | **33,385** |
| 1 | 04 | 02 | 02 | 06 | 01 | Procure prototype motor interfaces | 3-Oct-05 | 3-Oct-05 | A | P | AN_MSEG | $$ | | 3,000 | | 3,180 | 3,180 |
| 1 | 04 | 02 | 02 | 06 | 01 | Procure prototype motor interfaces | 3-Oct-05 | 3-Oct-05 | A | P | AN_CE | Hrs | 4 | | 377 | | 377 |
| 1 | 04 | 02 | 02 | 06 | 01 | Receive prototype motor interfaces | 4-Oct-05 | 31-Oct-05 | A | P | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 02 | 06 | 01 | Write QA procedure for Motor interface | 1-Nov-05 | 4-Nov-05 | A | P | AN_CE | Hrs | 12 | | 1,132 | | 1,132 |
| 1 | 04 | 02 | 02 | 06 | 01 | Prepare Bid Package for Motor interface | 7-Nov-05 | 10-Nov-05 | A | P | AN_CE | Hrs | 24 | | 2,264 | | 2,264 |
| 1 | 04 | 02 | 02 | 06 | 01 | Evaluate Proposal for Motor interface | 30-Nov-05 | 6-Dec-05 | A | P | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 02 | 06 | 01 | Receive production motor interface | 8-Dec-05 | 17-Feb-06 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 02 | 06 | 01 | Receive production motor interface | 8-Dec-05 | 17-Feb-06 | A | C | AA_MSEG | $$ | | 19,818 | | 21,007 | 21,007 |
| 1 | 04 | 02 | 02 | 06 | 01 | QA Test motor interface | 21-Feb-06 | 6-Mar-06 | A | C | AN_CT | Hrs | 40 | | 2,406 | | 2,406 |
| **1** | **04** | **02** | **02** | **06** | **02** | **Encoder Interface** | | | | | | | **108** | **14,575** | **8,821** | **15,450** | **24,271** |
| 1 | 04 | 02 | 02 | 06 | 02 | Procure prototype encoder interface | 3-Oct-05 | 3-Oct-05 | A | P | AN_MSEG | $$ | | 3,000 | | 3,180 | 3,180 |
| 1 | 04 | 02 | 02 | 06 | 02 | Receive prototype encoder interface | 4-Oct-05 | 31-Oct-05 | A | P | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 02 | 06 | 02 | Write QA procedure for Encoder interface | 1-Nov-05 | 4-Nov-05 | A | P | AN_CE | Hrs | 12 | | 1,132 | | 1,132 |
| 1 | 04 | 02 | 02 | 06 | 02 | Prepare Bid Package for Encoder interface | 7-Nov-05 | 10-Nov-05 | A | P | AN_CE | Hrs | 24 | | 2,264 | | 2,264 |
| 1 | 04 | 02 | 02 | 06 | 02 | Evaluate Proposal for Encoder interface | 30-Nov-05 | 6-Dec-05 | A | P | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |

| WBS Level | | | | | | LCLA DCE March-2005 | Early | Early | OBS | Fund | Res | Units | Budgeted Quantity | | Fully Burdened and Escalated Cost | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Run Time: 4/2205 8:43am | | | | | | Description | Start | Finish | | Type | Code | | Hours | $$ | Labor | M&S | Total (No Conting) |
| 1 | 2 | 3 | 4 | 5 | 6 | | | | | | | | | | | | |
| 1 | 04 | 02 | 02 | 06 | 02 | Receive production encoder interface | 8-Dec-05 | 17-Feb-06 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 02 | 06 | 02 | Receive production encoder interface | 8-Dec-05 | 17-Feb-06 | A | C | AA_MSEG | $$ | | 11,575 | | 12,270 | 12,270 |
| 1 | 04 | 02 | 02 | 06 | 02 | QA Test encoder interface | 21-Feb-06 | 6-Mar-06 | A | C | AN_CT | Hrs | 40 | | 2,406 | | 2,406 |
| **1** | **04** | **02** | **02** | **06** | **03** | **Motor Driver** | | | | | | | **104** | **5,124** | **8,444** | **5,431** | **13,875** |
| 1 | 04 | 02 | 02 | 06 | 03 | Procure prototype motor driver | 3-Oct-05 | 3-Oct-05 | A | P | AN_MSEG | $$ | | 2,000 | | 2,120 | 2,120 |
| 1 | 04 | 02 | 02 | 06 | 03 | Receive prototype motor driver | 4-Oct-05 | 31-Oct-05 | A | P | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 02 | 06 | 03 | Write QA procedure for motor driver | 1-Nov-05 | 2-Nov-05 | A | P | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 02 | 06 | 03 | Prepare Bid Package for motor driver | 3-Nov-05 | 8-Nov-05 | A | P | AN_CE | Hrs | 24 | | 2,264 | | 2,264 |
| 1 | 04 | 02 | 02 | 06 | 03 | Evaluate Proposal for motor driver | 28-Nov-05 | 2-Dec-05 | A | P | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 02 | 06 | 03 | Receive production motor driver | 6-Dec-05 | 18-Jan-06 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 02 | 06 | 03 | Receive production motor driver | 6-Dec-05 | 18-Jan-06 | A | C | AA_MSEG | $$ | | 3,124 | | 3,311 | 3,311 |
| 1 | 04 | 02 | 02 | 06 | 03 | QA Motor Driver | 19-Jan-06 | 1-Feb-06 | A | C | AN_CT | Hrs | 40 | | 2,406 | | 2,406 |
| **1** | **04** | **02** | **02** | **06** | **04** | **Cabling** | | | | | | | **224** | **21,800** | **18,395** | **23,108** | **41,503** |
| 1 | 04 | 02 | 02 | 06 | 04 | Design motor drive cables | 1-Nov-05 | 7-Nov-05 | A | P | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 02 | 06 | 04 | Design encoder signal cables | 1-Nov-05 | 7-Nov-05 | A | P | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 02 | 06 | 04 | Specify connectors | 9-Mar-06 | 10-Mar-06 | A | P | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 02 | 06 | 04 | Specify cables | 9-Mar-06 | 14-Mar-06 | A | P | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 02 | 06 | 04 | Procure prototype parts | 15-Mar-06 | 15-Mar-06 | A | P | AN_MSEG | $$ | | 2,000 | | 2,120 | 2,120 |
| 1 | 04 | 02 | 02 | 06 | 04 | Receive prototype parts | 16-Mar-06 | 19-Apr-06 | A | P | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 02 | 06 | 04 | Assemble prototype cables | 20-Apr-06 | 26-Apr-06 | A | P | AN_CT | Hrs | 24 | | 1,443 | | 1,443 |
| 1 | 04 | 02 | 02 | 06 | 04 | Test prototype cables | 27-Apr-06 | 3-May-06 | A | P | AN_CT | Hrs | 16 | | 962 | | 962 |
| 1 | 04 | 02 | 02 | 06 | 04 | Specify production cables | 4-May-06 | 17-May-06 | A | P | AN_CE | Hrs | 32 | | 3,018 | | 3,018 |
| 1 | 04 | 02 | 02 | 06 | 04 | Write QA procedure for production cables | 18-May-06 | 19-May-06 | A | P | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 02 | 06 | 04 | Prepare Bid Package for production cables | 22-May-06 | 26-May-06 | A | P | AN_CE | Hrs | 24 | | 2,264 | | 2,264 |
| 1 | 04 | 02 | 02 | 06 | 04 | Evaluate Proposal for production cables | 14-Jun-06 | 20-Jun-06 | A | P | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 02 | 06 | 04 | Receive production cables | 22-Jun-06 | 3-Aug-06 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 02 | 06 | 04 | Receive production cables | 22-Jun-06 | 3-Aug-06 | A | C | AA_MSEG | $$ | | 19,800 | | 20,988 | 20,988 |
| 1 | 04 | 02 | 02 | 06 | 04 | QA Test production cables | 4-Aug-06 | 17-Aug-06 | A | C | AN_CT | Hrs | 40 | | 2,406 | | 2,406 |
| **1** | **04** | **02** | **02** | **06** | **05** | **Integrate components** | | | | | | | **464** | **15,000** | **42,670** | **15,900** | **58,570** |
| 1 | 04 | 02 | 02 | 06 | 05 | Write control software | 3-Oct-05 | 29-Nov-05 | A | P | AN_CP | Hrs | 320 | | 30,182 | | 30,182 |
| 1 | 04 | 02 | 02 | 06 | 05 | Perform prototype testing | 30-Nov-05 | 13-Dec-05 | A | P | AN_CT | Hrs | 16 | | 962 | | 962 |
| 1 | 04 | 02 | 02 | 06 | 05 | Perform prototype testing | 30-Nov-05 | 13-Dec-05 | A | P | AN_CP | Hrs | 60 | | 5,659 | | 5,659 |
| 1 | 04 | 02 | 02 | 06 | 05 | Write validation procedure | 14-Dec-05 | 4-Jan-06 | A | P | AN_CE | Hrs | 12 | | 1,132 | | 1,132 |
| 1 | 04 | 02 | 02 | 06 | 05 | Design installation layout and plan | 5-Jan-06 | 2-Feb-06 | A | P | AN_CE | Hrs | 40 | | 3,773 | | 3,773 |
| 1 | 04 | 02 | 02 | 06 | 05 | Procure production integration components | 3-Feb-06 | 6-Feb-06 | A | C | AN_MSEG | $$ | | 15,000 | | 15,900 | 15,900 |
| 1 | 04 | 02 | 02 | 06 | 05 | Receive production integration components | 7-Feb-06 | 21-Mar-06 | A | C | AN_CT | Hrs | 16 | | 962 | | 962 |
| **1** | **04** | **02** | **02** | **07** | | **Macroscopic Motion** | | | | | | | **983** | **165,500** | **81,739** | **175,280** | **257,019** |
| **1** | **04** | **02** | **02** | **07** | **01** | **Motor Interface** | | | | | | | **127** | **33,000** | **10,543** | **34,890** | **45,433** |
| 1 | 04 | 02 | 02 | 07 | 01 | Specify prototype motor interface | 31-May-05 | 14-Jun-05 | A | P | AN_CE | Hrs | 19 | | 1,743 | | 1,743 |
| 1 | 04 | 02 | 02 | 07 | 01 | Procure prototype motor interfaces | 15-Jun-05 | 14-Jul-05 | A | P | AN_MSEG | $$ | | 3,000 | | 3,090 | 3,090 |
| 1 | 04 | 02 | 02 | 07 | 01 | Receive prototype motor interfaces | 15-Jul-05 | 19-Jul-05 | A | P | AN_CE | Hrs | 8 | | 734 | | 734 |
| 1 | 04 | 02 | 02 | 07 | 01 | Write QA procedure for Motor interface | 3-Jan-06 | 6-Jan-06 | A | P | AN_CE | Hrs | 12 | | 1,132 | | 1,132 |
| 1 | 04 | 02 | 02 | 07 | 01 | Prepare Bid Package for motor interface | 9-Jan-06 | 12-Jan-06 | A | P | AN_CE | Hrs | 24 | | 2,264 | | 2,264 |
| 1 | 04 | 02 | 02 | 07 | 01 | Evaluate Proposal for motor interface | 31-Jan-06 | 6-Feb-06 | A | C | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 02 | 07 | 01 | Receive production motor interface | 8-Feb-06 | 8-Mar-06 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 02 | 07 | 01 | Receive production motor interface | 8-Feb-06 | 8-Mar-06 | A | C | AA_MSEG | $$ | | 30,000 | | 31,800 | 31,800 |
| 1 | 04 | 02 | 02 | 07 | 01 | QA Test motor interface | 9-Mar-06 | 22-Mar-06 | A | C | AN_CT | Hrs | 40 | | 2,406 | | 2,406 |
| **1** | **04** | **02** | **02** | **07** | **03** | **Motor Driver** | | | | | | | **124** | **71,500** | **10,268** | **75,730** | **85,998** |
| 1 | 04 | 02 | 02 | 07 | 03 | Specify prototype motor driver | 31-May-05 | 7-Jun-05 | A | P | AN_CE | Hrs | 16 | | 1,468 | | 1,468 |
| 1 | 04 | 02 | 02 | 07 | 03 | Procure prototype motor driver | 8-Jun-05 | 7-Jul-05 | A | P | AN_MSEG | $$ | | 2,000 | | 2,060 | 2,060 |
| 1 | 04 | 02 | 02 | 07 | 03 | Receive prototype motor driver | 8-Jul-05 | 12-Jul-05 | A | P | AN_CE | Hrs | 8 | | 734 | | 734 |
| 1 | 04 | 02 | 02 | 07 | 03 | Write QA Procedure for Motor Driver | 3-Jan-06 | 6-Jan-06 | A | P | AN_CE | Hrs | 12 | | 1,132 | | 1,132 |
| 1 | 04 | 02 | 02 | 07 | 03 | Prepare Bid Pkg for Driver Interface | 9-Jan-06 | 12-Jan-06 | A | P | AN_CE | Hrs | 24 | | 2,264 | | 2,264 |
| 1 | 04 | 02 | 02 | 07 | 03 | Evaluate Proposal for Driver Interface | 13-Feb-06 | 17-Feb-06 | A | C | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 02 | 07 | 03 | Receive production motor driver | 22-Feb-06 | 21-Mar-06 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 02 | 07 | 03 | Receive production motor driver | 22-Feb-06 | 21-Mar-06 | A | C | AA_MSEG | $$ | | 69,500 | | 73,670 | 73,670 |
| 1 | 04 | 02 | 02 | 07 | 03 | QA Motor Driver | 22-Mar-06 | 4-Apr-06 | A | C | AN_CT | Hrs | 40 | | 2,406 | | 2,406 |
| **1** | **04** | **02** | **02** | **07** | **04** | **Cabling** | | | | | | | **208** | **46,000** | **16,886** | **48,760** | **65,646** |
| 1 | 04 | 02 | 02 | 07 | 04 | Design motor drive cables | 3-Jan-06 | 9-Jan-06 | A | P | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 02 | 07 | 04 | Specify cables | 10-Jan-06 | 13-Jan-06 | A | P | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 02 | 07 | 04 | Specify connectors | 10-Jan-06 | 12-Jan-06 | A | P | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 02 | 07 | 04 | Procure prototype parts | 17-Jan-06 | 22-Feb-06 | A | P | AN_MSEG | $$ | | 2,000 | | 2,120 | 2,120 |
| 1 | 04 | 02 | 02 | 07 | 04 | Receive prototype parts | 23-Feb-06 | 27-Feb-06 | A | P | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 02 | 07 | 04 | Assemble prototype cables | 28-Feb-06 | 7-Mar-06 | A | P | AN_CT | Hrs | 24 | | 1,443 | | 1,443 |

| WBS Level | | | | | | LCLA DCE March-2005 | Early | Early | OBS | Fund | Res | Units | Budgeted Quantity | | Fully Burdened and Escalated Cost | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Run Time: 4/2205 8:43am | | | | | | Description | Start | Finish | | Type | Code | | Hours | $$ | Labor | M&S | Total (No Conting) |
| 1 | 2 | 3 | 4 | 5 | 6 | | | | | | | | | | | | |
| 1 | 04 | 02 | 02 | 07 | 04 | Test prototype cables | 8-Mar-06 | 15-Mar-06 | A | P | AN_CT | Hrs | 16 | | 962 | | 962 |
| 1 | 04 | 02 | 02 | 07 | 04 | Specify production cables | 16-Mar-06 | 29-Mar-06 | A | P | AN_CE | Hrs | 32 | | 3,018 | | 3,018 |
| 1 | 04 | 02 | 02 | 07 | 04 | Write QA procedure for production cables | 30-Mar-06 | 3-Apr-06 | A | P | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 02 | 07 | 04 | Prepare Bid Package for production cables | 4-Apr-06 | 10-Apr-06 | A | P | AN_CE | Hrs | 24 | | 2,264 | | 2,264 |
| 1 | 04 | 02 | 02 | 07 | 04 | Evaluate Proposal for production cables | 26-Apr-06 | 2-May-06 | A | C | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 02 | 07 | 04 | Receive production cables | 4-May-06 | 15-Jun-06 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 02 | 07 | 04 | Receive production cables | 4-May-06 | 15-Jun-06 | A | C | AA_MSEG | $$ | | 44,000 | | 46,640 | 46,640 |
| 1 | 04 | 02 | 02 | 07 | 04 | QA Test production cables | 16-Jun-06 | 29-Jun-06 | A | C | AN_CT | Hrs | 40 | | 2,406 | | 2,406 |
| **1** | **04** | **02** | **02** | **07** | **05** | **Integrate components** | | | | | | | **524** | **15,000** | **44,042** | **15,900** | **59,942** |
| 1 | 04 | 02 | 02 | 07 | 05 | Write control Software Requirements Spec. | 15-Jun-05 | 29-Jun-05 | A | P | AN_CE | Hrs | 16 | | 1,468 | | 1,468 |
| 1 | 04 | 02 | 02 | 07 | 05 | Design control software | 30-Jun-05 | 29-Jul-05 | A | P | AN_CP | Hrs | 40 | | 3,670 | | 3,670 |
| 1 | 04 | 02 | 02 | 07 | 05 | Write control software | 1-Aug-05 | 29-Aug-05 | A | P | AN_CP | Hrs | 108 | | 9,910 | | 9,910 |
| 1 | 04 | 02 | 02 | 07 | 05 | Design prototype test setup | 30-Aug-05 | 13-Sep-05 | A | P | AN_CE | Hrs | 40 | | 3,670 | | 3,670 |
| 1 | 04 | 02 | 02 | 07 | 05 | Prepare for design review - hardware | 14-Sep-05 | 20-Sep-05 | A | P | AN_CE | Hrs | 24 | | 2,202 | | 2,202 |
| 1 | 04 | 02 | 02 | 07 | 05 | Prepare for design review - software | 21-Sep-05 | 5-Oct-05 | A | P | AN_CP | Hrs | 80 | | 7,397 | | 7,397 |
| 1 | 04 | 02 | 02 | 07 | 05 | Procure integration components for prototype | 6-Oct-05 | 10-Nov-05 | A | P | AN_MSEG | $$ | | 5,000 | | 5,300 | 5,300 |
| 1 | 04 | 02 | 02 | 07 | 05 | Receive integration components for prototype | 11-Nov-05 | 16-Nov-05 | A | C | AN_CT | Hrs | 8 | | 481 | | 481 |
| 1 | 04 | 02 | 02 | 07 | 05 | Assemble prototype | 17-Nov-05 | 2-Dec-05 | A | C | AN_CT | Hrs | 40 | | 2,406 | | 2,406 |
| 1 | 04 | 02 | 02 | 07 | 05 | Write integrated test procedure | 5-Dec-05 | 9-Dec-05 | A | C | AN_CE | Hrs | 12 | | 1,132 | | 1,132 |
| 1 | 04 | 02 | 02 | 07 | 05 | Assemble test setup | 12-Dec-05 | 16-Dec-05 | A | C | AN_CT | Hrs | 16 | | 962 | | 962 |
| 1 | 04 | 02 | 02 | 07 | 05 | Perform prototype testing | 3-Jan-06 | 9-Jan-06 | A | C | AN_CT | Hrs | 16 | | 962 | | 962 |
| 1 | 04 | 02 | 02 | 07 | 05 | Perform prototype testing | 3-Jan-06 | 9-Jan-06 | A | C | AN_CP | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 02 | 07 | 05 | Write validation procedure | 10-Jan-06 | 17-Jan-06 | A | C | AN_CE | Hrs | 12 | | 1,132 | | 1,132 |
| 1 | 04 | 02 | 02 | 07 | 05 | Design installation layout and plan | 18-Jan-06 | 14-Feb-06 | A | C | AN_CE | Hrs | 40 | | 3,773 | | 3,773 |
| 1 | 04 | 02 | 02 | 07 | 05 | Procure production integration components | 15-Feb-06 | 16-Feb-06 | A | C | AN_MSEG | $$ | | 10,000 | | 10,600 | 10,600 |
| 1 | 04 | 02 | 02 | 07 | 05 | Receive production integration components | 17-Feb-06 | 31-Mar-06 | A | C | AN_CT | Hrs | 16 | | 962 | | 962 |
| 1 | 04 | 02 | 02 | 07 | 05 | QA Test production integration components | 3-Apr-06 | 14-Apr-06 | A | C | AN_CT | Hrs | 40 | | 2,406 | | 2,406 |
| **1** | **04** | **02** | **03** | | | **Signal Analysis** | | | | | | | **2,252** | **653,178** | **197,283** | **698,856** | **896,139** |
| **1** | **04** | **02** | **03** | **01** | | **RFBPM** | | | | | | | **1,100** | **554,178** | **96,268** | **593,503** | **689,771** |
| **1** | **04** | **02** | **03** | **01** | **02** | **Signal Acquisition** | | | | | | | **128** | **47,500** | **10,621** | **51,475** | **62,096** |
| 1 | 04 | 02 | 03 | 01 | 02 | Specify prototype A/D interface | 24-Feb-06 | 9-Mar-06 | A | C | AN_CE | Hrs | 12 | | 1,132 | | 1,132 |
| 1 | 04 | 02 | 03 | 01 | 02 | Procure prototype A/D interfaces | 10-Mar-06 | 10-Mar-06 | A | C | AN_MSEG | $$ | | 10,000 | | 10,600 | 10,600 |
| 1 | 04 | 02 | 03 | 01 | 02 | Receive prototype A/D interfaces | 13-Mar-06 | 7-Apr-06 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 03 | 01 | 02 | Assemble prototype | 10-Apr-06 | 21-Apr-06 | A | C | AN_CT | Hrs | 12 | | 722 | | 722 |
| 1 | 04 | 02 | 03 | 01 | 02 | Prototype testing | 24-Apr-06 | 5-May-06 | A | C | AN_CT | Hrs | 12 | | 722 | | 722 |
| 1 | 04 | 02 | 03 | 01 | 02 | Prototype testing | 24-Apr-06 | 5-May-06 | A | C | AN_CP | Hrs | 12 | | 1,132 | | 1,132 |
| 1 | 04 | 02 | 03 | 01 | 02 | Write QA procedure for A/D interface | 8-May-06 | 11-May-06 | A | C | AN_CE | Hrs | 12 | | 1,132 | | 1,132 |
| 1 | 04 | 02 | 03 | 01 | 02 | Prepare Bid Package for A/D interface | 4-Aug-06 | 9-Aug-06 | A | C | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 03 | 01 | 02 | Evaluate Proposal for A/D interface | 25-Aug-06 | 31-Aug-06 | A | C | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 03 | 01 | 02 | Receive production A/D interface | 30-Oct-06 | 31-Oct-06 | A | C | AN_CE | Hrs | 8 | | 774 | | 774 |
| 1 | 04 | 02 | 03 | 01 | 02 | Receive production A/D interface | 30-Oct-06 | 31-Oct-06 | A | C | AA_MSEG | $$ | | 37,500 | | 40,875 | 40,875 |
| 1 | 04 | 02 | 03 | 01 | 02 | QA Test A/D interface | 1-Nov-06 | 14-Nov-06 | A | C | AN_CT | Hrs | 20 | | 1,234 | | 1,234 |
| **1** | **04** | **02** | **03** | **01** | **03** | **Timing Interface** | | | | | | | **160** | **-** | **15,092** | **-** | **15,092** |
| 1 | 04 | 02 | 03 | 01 | 03 | Design timing electronics | 24-Feb-06 | 17-Jul-06 | A | C | AN_CE | Hrs | 80 | | 7,546 | | 7,546 |
| 1 | 04 | 02 | 03 | 01 | 03 | Prepare for Design Review | 18-Jul-06 | 31-Jul-06 | A | C | AN_CE | Hrs | 40 | | 3,773 | | 3,773 |
| 1 | 04 | 02 | 03 | 01 | 03 | Conduct Timing I/F Design Review | 1-Aug-06 | 7-Aug-06 | A | C | AN_CE | Hrs | 40 | | 3,773 | | 3,773 |
| **1** | **04** | **02** | **03** | **01** | **04** | **Cabling** | | | | | | | **176** | **55,000** | **14,139** | **58,300** | **72,439** |
| 1 | 04 | 02 | 03 | 01 | 04 | Specify cables | 24-Feb-06 | 2-Mar-06 | A | C | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 03 | 01 | 04 | Procure prototype parts | 3-Mar-06 | 3-Mar-06 | A | C | AN_MSEG | $$ | | 5,000 | | 5,300 | 5,300 |
| 1 | 04 | 02 | 03 | 01 | 04 | Receive prototype parts | 6-Mar-06 | 31-Mar-06 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 03 | 01 | 04 | Assemble prototype cables | 3-Apr-06 | 14-Apr-06 | A | C | AN_CT | Hrs | 24 | | 1,443 | | 1,443 |
| 1 | 04 | 02 | 03 | 01 | 04 | Test prototype cables | 17-Apr-06 | 28-Apr-06 | A | C | AN_CT | Hrs | 24 | | 1,443 | | 1,443 |
| 1 | 04 | 02 | 03 | 01 | 04 | Specify production cables | 1-May-06 | 12-May-06 | A | C | AN_CE | Hrs | 24 | | 2,264 | | 2,264 |
| 1 | 04 | 02 | 03 | 01 | 04 | Write QA procedure for production cables | 15-May-06 | 19-May-06 | A | C | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 03 | 01 | 04 | Prepare Bid Package for production cables | 22-May-06 | 25-May-06 | A | C | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 03 | 01 | 04 | Evaluate Proposal for production cables | 13-Jun-06 | 19-Jun-06 | A | C | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 03 | 01 | 04 | Receive production cables | 21-Jun-06 | 19-Jul-06 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 03 | 01 | 04 | Receive production cables | 21-Jun-06 | 19-Jul-06 | A | C | AA_MSEG | $$ | | 50,000 | | 53,000 | 53,000 |
| 1 | 04 | 02 | 03 | 01 | 04 | QA Test production cables | 20-Jul-06 | 2-Aug-06 | A | C | AN_CT | Hrs | 24 | | 1,443 | | 1,443 |
| **1** | **04** | **02** | **03** | **01** | **05** | **Integrate Components** | | | | | | | **636** | **451,678** | **56,416** | **483,728** | **540,144** |
| 1 | 04 | 02 | 03 | 01 | 05 | Write control Software Requirements Spec. | 24-Feb-06 | 23-Mar-06 | A | C | AN_CE | Hrs | 40 | | 3,773 | | 3,773 |
| 1 | 04 | 02 | 03 | 01 | 05 | Design control software | 24-Mar-06 | 20-Apr-06 | A | C | AN_CP | Hrs | 80 | | 7,546 | | 7,546 |
| 1 | 04 | 02 | 03 | 01 | 05 | Write testing Software Requirements Spec. | 21-Apr-06 | 18-May-06 | A | C | AN_CE | Hrs | 24 | | 2,264 | | 2,264 |
| 1 | 04 | 02 | 03 | 01 | 05 | Design testing software | 19-May-06 | 2-Jun-06 | A | C | AN_CP | Hrs | 16 | | 1,509 | | 1,509 |

| WBS Level | | | | | | LCLA DCE March-2005 | Early | Early | OBS | Fund | Res | Units | Budgeted Quantity | | Fully Burdened and Escalated Cost | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Run Time: 4/2205 8:43am | | | | | | Description | Start | Finish | | Type | Code | | Hours | $$ | Labor | M&S | Total (No Conting) |
| 1 | 2 | 3 | 4 | 5 | 6 | | | | | | | | | | | | |
| 1 | 04 | 02 | 03 | 01 | 05 | Specify commercial software required | 5-Jun-06 | 9-Jun-06 | A | C | AN_CP | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 03 | 01 | 05 | Procure commercial software | 12-Jun-06 | 12-Jun-06 | A | C | AN_MSEG | $$ | | 5,000 | | 5,300 | 5,300 |
| 1 | 04 | 02 | 03 | 01 | 05 | Receive commercial software | 13-Jun-06 | 11-Jul-06 | A | C | AN_CP | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 03 | 01 | 05 | Write control software | 12-Jul-06 | 22-Aug-06 | A | C | AN_CP | Hrs | 80 | | 7,546 | | 7,546 |
| 1 | 04 | 02 | 03 | 01 | 05 | Test control software | 23-Aug-06 | 6-Sep-06 | A | C | AN_CE | Hrs | 40 | | 3,773 | | 3,773 |
| 1 | 04 | 02 | 03 | 01 | 05 | Design prototype test setup | 7-Sep-06 | 13-Sep-06 | A | C | AN_CE | Hrs | 40 | | 3,773 | | 3,773 |
| 1 | 04 | 02 | 03 | 01 | 05 | Prepare for design review | 14-Sep-06 | 20-Sep-06 | A | C | AN_CE | Hrs | 24 | | 2,264 | | 2,264 |
| 1 | 04 | 02 | 03 | 01 | 05 | Conduct design review | 21-Sep-06 | 22-Sep-06 | A | C | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 03 | 01 | 05 | Procure integration components for prototype ( | 25-Sep-06 | 25-Sep-06 | A | C | AN_MSEG | $$ | | 5,000 | | 5,300 | 5,300 |
| 1 | 04 | 02 | 03 | 01 | 05 | Receive integration components for prototype | 26-Sep-06 | 23-Oct-06 | A | C | AN_CT | Hrs | 8 | | 491 | | 491 |
| 1 | 04 | 02 | 03 | 01 | 05 | Assemble prototype | 24-Oct-06 | 20-Nov-06 | A | C | AN_CT | Hrs | 40 | | 2,468 | | 2,468 |
| 1 | 04 | 02 | 03 | 01 | 05 | Write integrated test procedure | 21-Nov-06 | 22-Nov-06 | A | C | AN_CE | Hrs | 8 | | 774 | | 774 |
| 1 | 04 | 02 | 03 | 01 | 05 | Assemble test setup | 27-Nov-06 | 28-Nov-06 | A | C | AN_CT | Hrs | 8 | | 494 | | 494 |
| 1 | 04 | 02 | 03 | 01 | 05 | Perform prototype testing | 29-Nov-06 | 30-Nov-06 | A | C | AN_CT | Hrs | 8 | | 494 | | 494 |
| 1 | 04 | 02 | 03 | 01 | 05 | Perform prototype testing | 29-Nov-06 | 30-Nov-06 | A | C | AN_CP | Hrs | 8 | | 774 | | 774 |
| 1 | 04 | 02 | 03 | 01 | 05 | Write validation procedure | 1-Dec-06 | 7-Dec-06 | A | C | AN_CE | Hrs | 12 | | 1,161 | | 1,161 |
| 1 | 04 | 02 | 03 | 01 | 05 | Design installation layout and plan | 8-Dec-06 | 22-Jan-07 | A | C | AN_CE | Hrs | 40 | | 3,871 | | 3,871 |
| 1 | 04 | 02 | 03 | 01 | 05 | Prepare Bid Pkg for production integration com | 23-Jan-07 | 26-Jan-07 | A | C | AN_CE | Hrs | 16 | | 1,548 | | 1,548 |
| 1 | 04 | 02 | 03 | 01 | 05 | Evaluate Prop for production integration comp | 13-Feb-07 | 20-Feb-07 | A | C | AN_CE | Hrs | 16 | | 1,548 | | 1,548 |
| 1 | 04 | 02 | 03 | 01 | 05 | Receive production integration components | 22-Feb-07 | 21-Mar-07 | A | C | AN_CT | Hrs | 16 | | 987 | | 987 |
| 1 | 04 | 02 | 03 | 01 | 05 | Receive production integration components | 22-Feb-07 | 21-Mar-07 | A | C | AA_MSEG | $$ | | 165,000 | | 179,850 | 179,850 |
| 1 | 04 | 02 | 03 | 01 | 05 | QA Test production integration components | 22-Mar-07 | 4-Apr-07 | A | C | AN_CT | Hrs | 40 | | 2,468 | | 2,468 |
| 1 | 04 | 02 | 03 | 01 | 05 | QA Test production integration components | 22-Mar-07 | 4-Apr-07 | A | C | AN_CP | Hrs | 40 | | 3,871 | | 3,871 |
| 1 | 04 | 02 | 03 | 01 | 05 | REQD: 33 BPM Assembly From SLAC | 24-Feb-06 | 24-Feb-06 | A | C | AN_MSXX | $$ | | 150,705 | | 159,747 | 159,747 |
| 1 | 04 | 02 | 03 | 01 | 05 | REQD: 76 Timing Boards From SLAC | 24-Feb-06 | 24-Feb-06 | A | C | AN_MSXX | $$ | | 125,973 | | 133,531 | 133,531 |
| **1** | **04** | **02** | **03** | **02** | | **Charge Monitor (CM)** | | | | | | | **612** | **65,000** | **54,015** | **69,200** | **123,215** |
| **1** | **04** | **02** | **03** | **02** | **03** | **Integrate Components** | | | | | | | **612** | **65,000** | **54,015** | **69,200** | **123,215** |
| 1 | 04 | 02 | 03 | 02 | 03 | Write control Software Requirements Spec. | 23-Nov-05 | 6-Jan-06 | A | C | AN_CE | Hrs | 40 | | 3,773 | | 3,773 |
| 1 | 04 | 02 | 03 | 02 | 03 | Design control software | 9-Jan-06 | 6-Feb-06 | A | C | AN_CP | Hrs | 80 | | 7,546 | | 7,546 |
| 1 | 04 | 02 | 03 | 02 | 03 | Write control software | 27-Feb-06 | 7-Apr-06 | A | C | AN_CP | Hrs | 80 | | 7,546 | | 7,546 |
| 1 | 04 | 02 | 03 | 02 | 03 | Test control software | 10-Apr-06 | 21-Apr-06 | A | C | AN_CE | Hrs | 40 | | 3,773 | | 3,773 |
| 1 | 04 | 02 | 03 | 02 | 03 | Design prototype test setup | 30-Jun-06 | 7-Jul-06 | A | C | AN_CE | Hrs | 40 | | 3,773 | | 3,773 |
| 1 | 04 | 02 | 03 | 02 | 03 | Prepare for design review | 10-Jul-06 | 21-Jul-06 | A | C | AN_CE | Hrs | 24 | | 2,264 | | 2,264 |
| 1 | 04 | 02 | 03 | 02 | 03 | Conduct design review | 24-Jul-06 | 25-Jul-06 | A | C | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 03 | 02 | 03 | Procure integration components for prototype | 26-Jul-06 | 26-Jul-06 | A | C | AN_MSEG | $$ | | 5,000 | | 5,300 | 5,300 |
| 1 | 04 | 02 | 03 | 02 | 03 | Receive integration components for prototype | 27-Jul-06 | 23-Aug-06 | A | C | AN_CT | Hrs | 8 | | 481 | | 481 |
| 1 | 04 | 02 | 03 | 02 | 03 | Assemble prototype | 24-Aug-06 | 21-Sep-06 | A | C | AN_CT | Hrs | 40 | | 2,406 | | 2,406 |
| 1 | 04 | 02 | 03 | 02 | 03 | Write integrated test procedure | 22-Sep-06 | 25-Sep-06 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 03 | 02 | 03 | Assemble test setup | 26-Sep-06 | 27-Sep-06 | A | C | AN_CT | Hrs | 8 | | 481 | | 481 |
| 1 | 04 | 02 | 03 | 02 | 03 | Perform prototype testing | 28-Sep-06 | 29-Sep-06 | A | C | AN_CT | Hrs | 8 | | 481 | | 481 |
| 1 | 04 | 02 | 03 | 02 | 03 | Perform prototype testing | 28-Sep-06 | 29-Sep-06 | A | C | AN_CP | Hrs | 40 | | 3,773 | | 3,773 |
| 1 | 04 | 02 | 03 | 02 | 03 | Write validation procedure | 2-Oct-06 | 6-Oct-06 | A | C | AN_CE | Hrs | 12 | | 1,161 | | 1,161 |
| 1 | 04 | 02 | 03 | 02 | 03 | Design installation layout and plan | 9-Oct-06 | 3-Nov-06 | A | C | AN_CE | Hrs | 40 | | 3,871 | | 3,871 |
| 1 | 04 | 02 | 03 | 02 | 03 | Prepare Bid Package for product integration co | 6-Nov-06 | 9-Nov-06 | A | C | AN_CE | Hrs | 16 | | 1,548 | | 1,548 |
| 1 | 04 | 02 | 03 | 02 | 03 | Evaluate Proposal for product integration comp | 29-Nov-06 | 5-Dec-06 | A | C | AN_CE | Hrs | 16 | | 1,548 | | 1,548 |
| 1 | 04 | 02 | 03 | 02 | 03 | Receive production integration components | 7-Dec-06 | 19-Jan-07 | A | C | AN_CT | Hrs | 16 | | 987 | | 987 |
| 1 | 04 | 02 | 03 | 02 | 03 | Receive production integration components | 7-Dec-06 | 19-Jan-07 | A | C | AA_MSEG | $$ | | 10,000 | | 10,900 | 10,900 |
| 1 | 04 | 02 | 03 | 02 | 03 | QA Test production integration components | 22-Jan-07 | 2-Feb-07 | A | C | AN_CT | Hrs | 40 | | 2,468 | | 2,468 |
| 1 | 04 | 02 | 03 | 02 | 03 | QA Test production integration components | 22-Jan-07 | 2-Feb-07 | A | C | AN_CP | Hrs | 40 | | 3,871 | | 3,871 |
| 1 | 04 | 02 | 03 | 02 | 03 | REQD: 2 Charge Monitors From SLAC | 23-Nov-05 | 23-Nov-05 | A | C | AN_MSEG | $$ | | 50,000 | | 53,000 | 53,000 |
| **1** | **04** | **02** | **03** | **03** | | **Scanning Wire** | | | | | | | **540** | **34,000** | **47,000** | **36,153** | **83,153** |
| **1** | **04** | **02** | **03** | **03** | **06** | **Integrate components** | | | | | | | **540** | **34,000** | **47,000** | **36,153** | **83,153** |
| 1 | 04 | 02 | 03 | 03 | 06 | Design control software | 10-Jan-06 | 7-Feb-06 | A | C | AN_CP | Hrs | 80 | | 7,546 | | 7,546 |
| 1 | 04 | 02 | 03 | 03 | 06 | Write control software | 8-Feb-06 | 22-Mar-06 | A | C | AN_CP | Hrs | 80 | | 7,546 | | 7,546 |
| 1 | 04 | 02 | 03 | 03 | 06 | Test control software | 23-Mar-06 | 5-Apr-06 | A | C | AN_CE | Hrs | 40 | | 3,773 | | 3,773 |
| 1 | 04 | 02 | 03 | 03 | 06 | Design prototype test setup | 6-Apr-06 | 13-Apr-06 | A | C | AN_CE | Hrs | 40 | | 3,773 | | 3,773 |
| 1 | 04 | 02 | 03 | 03 | 06 | Prepare for design review | 14-Apr-06 | 20-Apr-06 | A | C | AN_CE | Hrs | 24 | | 2,264 | | 2,264 |
| 1 | 04 | 02 | 03 | 03 | 06 | Conduct design review | 21-Apr-06 | 24-Apr-06 | A | C | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 03 | 03 | 06 | Procure integration components for prototype ( | 25-Apr-06 | 25-Apr-06 | A | C | AN_MSEG | $$ | | 5,000 | | 5,300 | 5,300 |
| 1 | 04 | 02 | 03 | 03 | 06 | Receive integration components for prototype | 26-Apr-06 | 23-May-06 | A | C | AN_CT | Hrs | 8 | | 481 | | 481 |
| 1 | 04 | 02 | 03 | 03 | 06 | Assemble prototype | 24-May-06 | 21-Jun-06 | A | C | AN_CT | Hrs | 40 | | 2,406 | | 2,406 |
| 1 | 04 | 02 | 03 | 03 | 06 | Write integrated test procedure | 22-Jun-06 | 26-Jun-06 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 03 | 03 | 06 | Assemble test setup | 27-Jun-06 | 29-Jun-06 | A | C | AN_CT | Hrs | 8 | | 481 | | 481 |
| 1 | 04 | 02 | 03 | 03 | 06 | Perform prototype testing | 30-Jun-06 | 5-Jul-06 | A | C | AN_CT | Hrs | 8 | | 481 | | 481 |

| WBS Level | | | | | | LCLA DCE March-2005 | Early | Early | OBS | Fund | Res | Units | Budgeted Quantity | | Fully Burdened and Escalated Cost | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Run Time: 4/2205 8:43am | | | | | | Description | Start | Finish | | Type | Code | | Hours | $$ | Labor | M&S | Total (No Conting) |
| 1 | 2 | 3 | 4 | 5 | 6 | | | | | | | | | | | | |
| 1 | 04 | 02 | 03 | 03 | 06 | Perform prototype testing | 30-Jun-06 | 5-Jul-06 | A | C | AN_CP | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 03 | 03 | 06 | Write validation procedure | 6-Jul-06 | 12-Jul-06 | A | C | AN_CE | Hrs | 12 | | 1,132 | | 1,132 |
| 1 | 04 | 02 | 03 | 03 | 06 | Design installation layout and plan | 13-Jul-06 | 9-Aug-06 | A | C | AN_CE | Hrs | 40 | | 3,773 | | 3,773 |
| 1 | 04 | 02 | 03 | 03 | 06 | Prepare Bid Package for product integration co | 10-Aug-06 | 15-Aug-06 | A | C | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 03 | 03 | 06 | Evaluate Proposal for product integration comp | 31-Aug-06 | 7-Sep-06 | A | C | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 03 | 03 | 06 | Receive production integration components | 11-Sep-06 | 6-Oct-06 | A | C | AN_CT | Hrs | 16 | | 968 | | 968 |
| 1 | 04 | 02 | 03 | 03 | 06 | Receive production integration components | 11-Sep-06 | 6-Oct-06 | A | C | AA_MSEG | $$ | | 15,000 | | 16,013 | 16,013 |
| 1 | 04 | 02 | 03 | 03 | 06 | QA Test production integration components | 9-Oct-06 | 23-Oct-06 | A | C | AN_CT | Hrs | 40 | | 2,468 | | 2,468 |
| 1 | 04 | 02 | 03 | 03 | 06 | QA Test production integration components | 9-Oct-06 | 23-Oct-06 | A | C | AN_CP | Hrs | 40 | | 3,871 | | 3,871 |
| 1 | 04 | 02 | 03 | 03 | 06 | REQD: 1 Proto SWA Analog Electronics From SLAC | 10-Jan-06 | 10-Jan-06 | A | C | AN_MSXX | $$ | | 14,000 | | 14,840 | 14,840 |
| **1** | **04** | **02** | **04** | | | **Video** | | | | | | | **2,162** | **398,340** | **182,242** | **432,308** | **614,550** |
| **1** | **04** | **02** | **04** | **01** | | **OTR Monitor** | | | | | | | **1,170** | **342,590** | **100,460** | **373,213** | **473,673** |
| **1** | **04** | **02** | **04** | **01** | **01** | **Camera** | | | | | | | **88** | **181,500** | **6,657** | **197,835** | **204,492** |
| 1 | 04 | 02 | 04 | 01 | 01 | Prototype testing | 15-Jun-05 | 28-Jun-05 | A | P | AN_CT | Hrs | 24 | | 1,404 | | 1,404 |
| 1 | 04 | 02 | 04 | 01 | 01 | Write QA procedure for Camera | 29-Jun-05 | 6-Jul-05 | A | P | AN_CE | Hrs | 8 | | 734 | | 734 |
| 1 | 04 | 02 | 04 | 01 | 01 | Prepare Bid Package for Camera | 5-Sep-06 | 8-Sep-06 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 04 | 01 | 01 | Evaluate Proposal for Camera | 25-Sep-06 | 29-Sep-06 | A | C | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 04 | 01 | 01 | Receive production Camera | 3-Oct-06 | 30-Oct-06 | A | C | AN_CE | Hrs | 8 | | 774 | | 774 |
| 1 | 04 | 02 | 04 | 01 | 01 | Receive production Camera | 3-Oct-06 | 30-Oct-06 | A | C | AA_MSEG | $$ | | 181,500 | | 197,835 | 197,835 |
| 1 | 04 | 02 | 04 | 01 | 01 | QA Test Camera | 31-Oct-06 | 13-Nov-06 | A | C | AN_CT | Hrs | 24 | | 1,481 | | 1,481 |
| **1** | **04** | **02** | **04** | **01** | **02** | **Camera trigger interface** | | | | | | | **88** | **30,730** | **6,725** | **33,496** | **40,221** |
| 1 | 04 | 02 | 04 | 01 | 02 | Prototype testing Camera Interface | 3-Oct-05 | 14-Oct-05 | A | P | AN_CT | Hrs | 24 | | 1,443 | | 1,443 |
| 1 | 04 | 02 | 04 | 01 | 02 | Write QA procedure for Camera interface | 17-Oct-05 | 21-Oct-05 | A | P | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 04 | 01 | 02 | Prepare Bid Package for Camera Interface | 5-Sep-06 | 8-Sep-06 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 04 | 01 | 02 | Evaluate Proposal for Camera Interface | 26-Sep-06 | 2-Oct-06 | A | C | AN_CE | Hrs | 16 | | 1,517 | | 1,517 |
| 1 | 04 | 02 | 04 | 01 | 02 | Receive production Camera interface | 4-Oct-06 | 31-Oct-06 | A | C | AN_CE | Hrs | 8 | | 774 | | 774 |
| 1 | 04 | 02 | 04 | 01 | 02 | Receive production Camera interface | 4-Oct-06 | 31-Oct-06 | A | C | AA_MSEG | $$ | | 30,730 | | 33,496 | 33,496 |
| 1 | 04 | 02 | 04 | 01 | 02 | QA Test Camera interface | 1-Nov-06 | 14-Nov-06 | A | C | AN_CT | Hrs | 24 | | 1,481 | | 1,481 |
| **1** | **04** | **02** | **04** | **01** | **03** | **Digitizer** | | | | | | | **88** | **55,300** | **6,665** | **60,277** | **66,942** |
| 1 | 04 | 02 | 04 | 01 | 03 | Prototype testing | 15-Jun-05 | 28-Jun-05 | A | P | AN_CT | Hrs | 24 | | 1,404 | | 1,404 |
| 1 | 04 | 02 | 04 | 01 | 03 | Write QA procedure for Digitizer | 29-Jun-05 | 6-Jul-05 | A | P | AN_CE | Hrs | 8 | | 734 | | 734 |
| 1 | 04 | 02 | 04 | 01 | 03 | Prepare Bid Package for Digitizer | 5-Sep-06 | 8-Sep-06 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 04 | 01 | 03 | Evaluate Proposal for Digitizer | 26-Sep-06 | 2-Oct-06 | A | C | AN_CE | Hrs | 16 | | 1,517 | | 1,517 |
| 1 | 04 | 02 | 04 | 01 | 03 | Receive production Digitizer | 4-Oct-06 | 17-Oct-06 | A | C | AN_CE | Hrs | 8 | | 774 | | 774 |
| 1 | 04 | 02 | 04 | 01 | 03 | Receive production Digitizer | 4-Oct-06 | 17-Oct-06 | A | C | AA_MSEG | $$ | | 55,300 | | 60,277 | 60,277 |
| 1 | 04 | 02 | 04 | 01 | 03 | QA Test Digitizer | 18-Oct-06 | 31-Oct-06 | A | C | AN_CT | Hrs | 24 | | 1,481 | | 1,481 |
| **1** | **04** | **02** | **04** | **01** | **05** | **Cabling** | | | | | | | **168** | **15,060** | **13,997** | **16,355** | **30,352** |
| 1 | 04 | 02 | 04 | 01 | 05 | Design video feed cables | 1-Nov-05 | 7-Nov-05 | A | P | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 04 | 01 | 05 | Design timing signal cables | 1-Nov-05 | 7-Nov-05 | A | P | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 04 | 01 | 05 | Specify cables | 8-Nov-05 | 14-Nov-05 | A | P | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 04 | 01 | 05 | Procure prototype parts | 15-Nov-05 | 15-Nov-05 | A | P | AN_MSEG | $$ | | 2,000 | | 2,120 | 2,120 |
| 1 | 04 | 02 | 04 | 01 | 05 | Receive prototype parts | 16-Nov-05 | 15-Dec-05 | A | P | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 04 | 01 | 05 | Assemble prototype cables | 16-Dec-05 | 6-Jan-06 | A | P | AN_CT | Hrs | 16 | | 962 | | 962 |
| 1 | 04 | 02 | 04 | 01 | 05 | Test prototype cables | 9-Jan-06 | 23-Jan-06 | A | P | AN_CT | Hrs | 16 | | 962 | | 962 |
| 1 | 04 | 02 | 04 | 01 | 05 | Specify production cables | 24-Jan-06 | 24-Jan-06 | A | P | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 04 | 01 | 05 | Write QA procedure for production cables | 25-Jan-06 | 30-Jan-06 | A | P | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 04 | 01 | 05 | Prepare Bid Package for production cables | 5-Sep-06 | 8-Sep-06 | A | C | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 04 | 01 | 05 | Evaluate Proposal for production cables | 26-Sep-06 | 2-Oct-06 | A | C | AN_CE | Hrs | 16 | | 1,517 | | 1,517 |
| 1 | 04 | 02 | 04 | 01 | 05 | Receive production cables | 4-Oct-06 | 17-Oct-06 | A | C | AN_CE | Hrs | 8 | | 774 | | 774 |
| 1 | 04 | 02 | 04 | 01 | 05 | Receive production cables | 4-Oct-06 | 17-Oct-06 | A | C | AA_MSEG | $$ | | 13,060 | | 14,235 | 14,235 |
| 1 | 04 | 02 | 04 | 01 | 05 | QA Test production cables | 18-Oct-06 | 31-Oct-06 | A | C | AN_CT | Hrs | 24 | | 1,481 | | 1,481 |
| **1** | **04** | **02** | **04** | **01** | **06** | **Integrate components** | | | | | | | **738** | **60,000** | **66,416** | **65,250** | **131,666** |
| 1 | 04 | 02 | 04 | 01 | 06 | Write control Software Requirements Spec. | 3-Oct-05 | 28-Oct-05 | A | P | AN_CE | Hrs | 40 | | 3,773 | | 3,773 |
| 1 | 04 | 02 | 04 | 01 | 06 | Design control software | 31-Oct-05 | 29-Nov-05 | A | P | AN_CP | Hrs | 80 | | 7,546 | | 7,546 |
| 1 | 04 | 02 | 04 | 01 | 06 | Write control software | 30-Nov-05 | 26-Jan-06 | A | P | AN_CP | Hrs | 80 | | 7,546 | | 7,546 |
| 1 | 04 | 02 | 04 | 01 | 06 | Test control software | 27-Jan-06 | 9-Feb-06 | A | P | AN_CE | Hrs | 40 | | 3,773 | | 3,773 |
| 1 | 04 | 02 | 04 | 01 | 06 | RCV: OTR imaging requirements | 0-Jan-00 | 9-Feb-06 | A | P | AN_CE | Hrs | - | | - | | - |
| 1 | 04 | 02 | 04 | 01 | 06 | Design analysis software | 10-Feb-06 | 10-Mar-06 | A | P | AN_CP | Hrs | 160 | | 15,091 | | 15,091 |
| 1 | 04 | 02 | 04 | 01 | 06 | Test Analysis software | 13-Mar-06 | 24-Mar-06 | A | P | AN_CP | Hrs | 80 | | 7,546 | | 7,546 |
| 1 | 04 | 02 | 04 | 01 | 06 | CMPLT : OTR Analysis software | 0-Jan-00 | 24-Mar-06 | A | P | AN_CE | Hrs | - | | - | | - |
| 1 | 04 | 02 | 04 | 01 | 06 | Design prototype test setup | 27-Mar-06 | 31-Mar-06 | A | P | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 04 | 01 | 06 | Prepare for design review | 3-Apr-06 | 7-Apr-06 | A | C | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 04 | 01 | 06 | Conduct design review | 10-Apr-06 | 14-Apr-06 | A | C | AN_CE | Hrs | 24 | | 2,264 | | 2,264 |
| 1 | 04 | 02 | 04 | 01 | 06 | Procure integration components for prototype ( | 17-Apr-06 | 17-Apr-06 | A | C | AN_MSEG | $$ | | 5,000 | | 5,300 | 5,300 |

| WBS Level | | | | | | LCLA DCE March-2005 | Early | Early | OBS | Fund | Res | Units | Budgeted Quantity | | Fully Burdened and Escalated Cost | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Run Time: 4/2205 8:43am | | | | | | Description | Start | Finish | | Type | Code | | Hours | $$ | Labor | M&S | Total (No Conting) |
| 1 | 2 | 3 | 4 | 5 | 6 | | | | | | | | | | | | |
| 1 | 04 | 02 | 04 | 01 | 06 | Receive integration components for prototype | 18-Apr-06 | 15-May-06 | A | C | AN_CT | Hrs | 8 | | 481 | | 481 |
| 1 | 04 | 02 | 04 | 01 | 06 | Assemble prototype | 16-May-06 | 30-May-06 | A | C | AN_CT | Hrs | 24 | | 1,443 | | 1,443 |
| 1 | 04 | 02 | 04 | 01 | 06 | Write integrated test procedure | 31-May-06 | 5-Jun-06 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 04 | 01 | 06 | Assemble test setup | 6-Jun-06 | 12-Jun-06 | A | C | AN_CT | Hrs | 16 | | 962 | | 962 |
| 1 | 04 | 02 | 04 | 01 | 06 | Perform prototype testing | 13-Jun-06 | 19-Jun-06 | A | C | AN_CT | Hrs | 16 | | 962 | | 962 |
| 1 | 04 | 02 | 04 | 01 | 06 | Perform prototype testing | 13-Jun-06 | 19-Jun-06 | A | C | AN_CP | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 04 | 01 | 06 | Write validation procedure | 20-Jun-06 | 26-Jun-06 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 04 | 01 | 06 | Design installation layout and plan | 27-Jun-06 | 3-Jul-06 | A | C | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 04 | 01 | 06 | Prepare Bid Package for product integration co | 5-Sep-06 | 8-Sep-06 | A | C | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 04 | 01 | 06 | Evaluate Proposal for product integration comp | 26-Sep-06 | 2-Oct-06 | A | C | AN_CE | Hrs | 16 | | 1,517 | | 1,517 |
| 1 | 04 | 02 | 04 | 01 | 06 | Receive production integration components | 4-Oct-06 | 31-Oct-06 | A | C | AN_CT | Hrs | 8 | | 494 | | 494 |
| 1 | 04 | 02 | 04 | 01 | 06 | Receive production integration components | 4-Oct-06 | 31-Oct-06 | A | C | AA_MSEG | $$ | | 55,000 | | 59,950 | 59,950 |
| 1 | 04 | 02 | 04 | 01 | 06 | QA Test production integration components | 1-Nov-06 | 15-Nov-06 | A | C | AN_CT | Hrs | 25 | | 1,543 | | 1,543 |
| 1 | 04 | 02 | 04 | 01 | 06 | QA Test production integration components | 1-Nov-06 | 15-Nov-06 | A | C | AN_CP | Hrs | 25 | | 2,420 | | 2,420 |
| **1** | **04** | **02** | **04** | **03** | | **Observation Station Video** | | | | | | | **992** | **55,750** | **81,782** | **59,095** | **140,877** |
| **1** | **04** | **02** | **04** | **03** | **01** | **Camera** | | | | | | | **84** | **9,000** | **6,283** | **9,540** | **15,823** |
| 1 | 04 | 02 | 04 | 03 | 01 | Specify prototype Camera | 24-Feb-06 | 9-Mar-06 | A | P | AN_CE | Hrs | 12 | | 1,132 | | 1,132 |
| 1 | 04 | 02 | 04 | 03 | 01 | Procure prototype Camera | 10-Mar-06 | 10-Mar-06 | A | C | AN_MSEG | $$ | | 2,000 | | 2,120 | 2,120 |
| 1 | 04 | 02 | 04 | 03 | 01 | Receive prototype Camera | 13-Mar-06 | 7-Apr-06 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 04 | 03 | 01 | Assemble prototype | 10-Apr-06 | 21-Apr-06 | A | C | AN_CT | Hrs | 8 | | 481 | | 481 |
| 1 | 04 | 02 | 04 | 03 | 01 | Prototype testing | 24-Apr-06 | 28-Apr-06 | A | C | AN_CT | Hrs | 16 | | 962 | | 962 |
| 1 | 04 | 02 | 04 | 03 | 01 | Write QA procedure for Camera | 1-May-06 | 4-May-06 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 04 | 03 | 01 | Procure production Camera | 5-May-06 | 5-May-06 | A | C | AN_MSEG | $$ | | 7,000 | | 7,420 | 7,420 |
| 1 | 04 | 02 | 04 | 03 | 01 | Receive production Camera | 8-May-06 | 5-Jun-06 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 04 | 03 | 01 | QA Test Camera | 6-Jun-06 | 19-Jun-06 | A | C | AN_CT | Hrs | 24 | | 1,443 | | 1,443 |
| **1** | **04** | **02** | **04** | **03** | **02** | **Camera Trigger Interface** | | | | | | | **58** | **-** | **4,308** | **-** | **4,308** |
| 1 | 04 | 02 | 04 | 03 | 02 | Assemble prototype | 13-Mar-06 | 17-Mar-06 | A | C | AN_CT | Hrs | 10 | | 601 | | 601 |
| 1 | 04 | 02 | 04 | 03 | 02 | Prototype testing | 20-Mar-06 | 31-Mar-06 | A | C | AN_CT | Hrs | 24 | | 1,443 | | 1,443 |
| 1 | 04 | 02 | 04 | 03 | 02 | Prototype testing | 20-Mar-06 | 31-Mar-06 | A | C | AN_CP | Hrs | 24 | | 2,264 | | 2,264 |
| **1** | **04** | **02** | **04** | **03** | **03** | **Mulitplexor** | | | | | | | **104** | **18,000** | **8,169** | **19,080** | **27,249** |
| 1 | 04 | 02 | 04 | 03 | 03 | Specify prototype Multiplexer | 24-Feb-06 | 2-Mar-06 | A | P | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 04 | 03 | 03 | Receive prototype Multiplexer | 6-Mar-06 | 31-Mar-06 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 04 | 03 | 03 | Assemble prototype | 3-Apr-06 | 7-Apr-06 | A | C | AN_CT | Hrs | 16 | | 962 | | 962 |
| 1 | 04 | 02 | 04 | 03 | 03 | Prototype testing | 10-Apr-06 | 14-Apr-06 | A | C | AN_CT | Hrs | 16 | | 962 | | 962 |
| 1 | 04 | 02 | 04 | 03 | 03 | Prototype testing | 10-Apr-06 | 14-Apr-06 | A | C | AN_CP | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 04 | 03 | 03 | Write QA procedure for Multiplexer | 17-Apr-06 | 20-Apr-06 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 04 | 03 | 03 | Procure production Multiplexer | 21-Apr-06 | 21-Apr-06 | A | C | AN_MSEG | $$ | | 18,000 | | 19,080 | 19,080 |
| 1 | 04 | 02 | 04 | 03 | 03 | Receive production Multiplexer | 24-Apr-06 | 5-May-06 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 04 | 03 | 03 | QA Test Multiplexer | 8-May-06 | 19-May-06 | A | C | AN_CT | Hrs | 16 | | 962 | | 962 |
| **1** | **04** | **02** | **04** | **03** | **04** | **Cabling** | | | | | | | **136** | **3,750** | **10,915** | **3,975** | **14,890** |
| 1 | 04 | 02 | 04 | 03 | 04 | Design video feed cables | 10-Apr-06 | 11-Apr-06 | A | P | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 04 | 03 | 04 | Specify cables | 12-Apr-06 | 17-Apr-06 | A | P | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 04 | 03 | 04 | Procure prototype parts | 18-Apr-06 | 18-Apr-06 | A | C | AN_MSEG | $$ | | 2,000 | | 2,120 | 2,120 |
| 1 | 04 | 02 | 04 | 03 | 04 | Receive prototype parts | 19-Apr-06 | 23-May-06 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 04 | 03 | 04 | Assemble prototype cables | 24-May-06 | 31-May-06 | A | C | AN_CT | Hrs | 16 | | 962 | | 962 |
| 1 | 04 | 02 | 04 | 03 | 04 | Test prototype cables | 1-Jun-06 | 14-Jun-06 | A | C | AN_CT | Hrs | 16 | | 962 | | 962 |
| 1 | 04 | 02 | 04 | 03 | 04 | Specify production cables | 15-Jun-06 | 15-Jun-06 | A | P | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 04 | 03 | 04 | Write QA procedure for production cables | 16-Jun-06 | 21-Jun-06 | A | P | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 04 | 03 | 04 | Prepare Bid Package for production cables | 22-Jun-06 | 27-Jun-06 | A | C | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 04 | 03 | 04 | Evaluate Proposal for production cables | 14-Jul-06 | 20-Jul-06 | A | C | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 04 | 03 | 04 | Receive production cables | 24-Jul-06 | 4-Aug-06 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 04 | 03 | 04 | Receive production cables | 24-Jul-06 | 4-Aug-06 | A | C | AA_MSEG | $$ | | 1,750 | | 1,855 | 1,855 |
| 1 | 04 | 02 | 04 | 03 | 04 | QA Test production cables | 7-Aug-06 | 18-Aug-06 | A | C | AN_CT | Hrs | 24 | | 1,443 | | 1,443 |
| **1** | **04** | **02** | **04** | **03** | **05** | **Integrate components** | | | | | | | **440** | **25,000** | **38,541** | **26,500** | **65,041** |
| 1 | 04 | 02 | 04 | 03 | 05 | Write control Software Requirements Spec. | 13-Mar-06 | 24-Mar-06 | A | C | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 04 | 03 | 05 | Design control software | 27-Mar-06 | 7-Apr-06 | A | P | AN_CP | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 04 | 03 | 05 | Write control software | 10-Apr-06 | 21-Apr-06 | A | C | AN_CP | Hrs | 160 | | 15,091 | | 15,091 |
| 1 | 04 | 02 | 04 | 03 | 05 | Test control software | 24-Apr-06 | 5-May-06 | A | C | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 04 | 03 | 05 | Design prototype test setup | 8-May-06 | 12-May-06 | A | P | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 04 | 03 | 05 | Prepare for design review | 15-May-06 | 26-May-06 | A | C | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 04 | 03 | 05 | Conduct design review | 30-May-06 | 5-Jun-06 | A | P | AN_CE | Hrs | 24 | | 2,264 | | 2,264 |
| 1 | 04 | 02 | 04 | 03 | 05 | Procure integration components for prototype ( | 6-Jun-06 | 6-Jun-06 | A | C | AN_MSEG | $$ | | 5,000 | | 5,300 | 5,300 |
| 1 | 04 | 02 | 04 | 03 | 05 | Receive integration components for prototype | 7-Jun-06 | 5-Jul-06 | A | C | AN_CT | Hrs | 8 | | 481 | | 481 |
| 1 | 04 | 02 | 04 | 03 | 05 | Assemble prototype | 6-Jul-06 | 19-Jul-06 | A | C | AN_CT | Hrs | 24 | | 1,443 | | 1,443 |

| WBS Level | | | | | | LCLA DCE March-2005 | Early | Early | OBS | Fund | Res | Units | Budgeted Quantity | | Fully Burdened and Escalated Cost | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Run Time: 4/2205 8:43am | | | | | | Description | Start | Finish | | Type | Code | | Hours | $$ | Labor | M&S | Total (No Conting) |
| 1 | 2 | 3 | 4 | 5 | 6 | | | | | | | | | | | | |
| 1 | 04 | 02 | 04 | 03 | 05 | Write integrated test procedure | 20-Jul-06 | 25-Jul-06 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 04 | 03 | 05 | Assemble test setup | 26-Jul-06 | 1-Aug-06 | A | C | AN_CT | Hrs | 16 | | 962 | | 962 |
| 1 | 04 | 02 | 04 | 03 | 05 | Perform prototype testing | 2-Aug-06 | 8-Aug-06 | A | C | AN_CT | Hrs | 16 | | 962 | | 962 |
| 1 | 04 | 02 | 04 | 03 | 05 | Perform prototype testing | 2-Aug-06 | 8-Aug-06 | A | C | AN_CP | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 04 | 03 | 05 | Write validation procedure | 9-Aug-06 | 15-Aug-06 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 04 | 03 | 05 | Design installation layout and plan | 16-Aug-06 | 22-Aug-06 | A | C | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 04 | 03 | 05 | Procure production integration components | 23-Aug-06 | 23-Aug-06 | A | C | AN_MSEG | $$ | | 20,000 | | 21,200 | 21,200 |
| 1 | 04 | 02 | 04 | 03 | 05 | Receive production integration components | 24-Aug-06 | 21-Sep-06 | A | C | AN_CT | Hrs | 8 | | 481 | | 481 |
| 1 | 04 | 02 | 04 | 03 | 05 | QA Test production integration components | 22-Sep-06 | 5-Oct-06 | A | C | AN_CT | Hrs | 16 | | 972 | | 972 |
| 1 | 04 | 02 | 04 | 03 | 05 | QA Test production integration components | 22-Sep-06 | 5-Oct-06 | A | C | AN_CP | Hrs | 40 | | 3,812 | | 3,812 |
| **1** | **04** | **02** | **04** | **03** | **06** | **Imaging Test Stand** | | | | | | | **170** | **-** | **13,566** | **-** | **13,566** |
| 1 | 04 | 02 | 04 | 03 | 06 | Evaluate camera choices | 1-Oct-04 | 5-Oct-04 | 2 | P | AN_PHS | Hrs | 20 | | 1,673 | | 1,673 |
| 1 | 04 | 02 | 04 | 03 | 06 | Evaluate camera choices | 1-Oct-04 | 5-Oct-04 | 2 | P | AN_CE | Hrs | 20 | | 1,783 | | 1,783 |
| 1 | 04 | 02 | 04 | 03 | 06 | Evaluate image capture hardware choices | 1-Oct-04 | 5-Oct-04 | 2 | P | AN_CE | Hrs | 20 | | 1,783 | | 1,783 |
| 1 | 04 | 02 | 04 | 03 | 06 | Evaluate host choices | 1-Oct-04 | 5-Oct-04 | 2 | P | AN_CE | Hrs | 40 | | 3,567 | | 3,567 |
| 1 | 04 | 02 | 04 | 03 | 06 | Assemble components | 1-Jun-05 | 7-Jun-05 | 2 | P | AN_CT | Hrs | 40 | | 2,340 | | 2,340 |
| 1 | 04 | 02 | 04 | 03 | 06 | Imaging stand checkout | 8-Jun-05 | 14-Jun-05 | 2 | P | AN_CT | Hrs | 10 | | 585 | | 585 |
| 1 | 04 | 02 | 04 | 03 | 06 | Imaging stand checkout | 8-Jun-05 | 14-Jun-05 | 2 | P | AN_CE | Hrs | 20 | | 1,835 | | 1,835 |
| **1** | **04** | **02** | **05** | | | **Data Acquisition & Control** | | | | | | | **368** | **43,000** | **30,964** | **45,580** | **76,544** |
| **1** | **04** | **02** | **05** | **01** | | **Strongback Temperature Monitoring** | | | | | | | **368** | **43,000** | **30,964** | **45,580** | **76,544** |
| **1** | **04** | **02** | **05** | **01** | **01** | **Integrate components** | | | | | | | **368** | **43,000** | **30,964** | **45,580** | **76,544** |
| 1 | 04 | 02 | 05 | 01 | 01 | Write control Software Requirements Spec | 3-Oct-05 | 14-Oct-05 | A | C | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 05 | 01 | 01 | Design control software | 17-Oct-05 | 28-Oct-05 | A | P | AN_CP | Hrs | 20 | | 1,886 | | 1,886 |
| 1 | 04 | 02 | 05 | 01 | 01 | Write control software | 31-Oct-05 | 11-Nov-05 | A | C | AN_CP | Hrs | 24 | | 2,264 | | 2,264 |
| 1 | 04 | 02 | 05 | 01 | 01 | Test control software | 14-Nov-05 | 18-Nov-05 | A | C | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 05 | 01 | 01 | Design prototype test setup | 21-Nov-05 | 29-Nov-05 | A | P | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 05 | 01 | 01 | Prepare for design review | 30-Nov-05 | 6-Dec-05 | A | C | AN_CP | Hrs | 24 | | 2,264 | | 2,264 |
| 1 | 04 | 02 | 05 | 01 | 01 | Conduct design review | 7-Dec-05 | 8-Dec-05 | A | P | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 05 | 01 | 01 | Receive integration components for prototype | 12-Dec-05 | 24-Jan-06 | A | C | AN_CT | Hrs | 8 | | 481 | | 481 |
| 1 | 04 | 02 | 05 | 01 | 01 | Assemble prototype | 25-Jan-06 | 7-Feb-06 | A | C | AN_CT | Hrs | 40 | | 2,406 | | 2,406 |
| 1 | 04 | 02 | 05 | 01 | 01 | Write integrated test procedure | 8-Feb-06 | 9-Feb-06 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 05 | 01 | 01 | Assemble test setup | 10-Feb-06 | 13-Feb-06 | A | C | AN_CT | Hrs | 8 | | 481 | | 481 |
| 1 | 04 | 02 | 05 | 01 | 01 | Perform prototype testing | 14-Feb-06 | 15-Feb-06 | A | C | AN_CT | Hrs | 8 | | 481 | | 481 |
| 1 | 04 | 02 | 05 | 01 | 01 | Perform prototype testing | 14-Feb-06 | 15-Feb-06 | A | C | AN_CP | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 05 | 01 | 01 | Write validation procedure | 16-Feb-06 | 23-Feb-06 | A | C | AN_CE | Hrs | 12 | | 1,132 | | 1,132 |
| 1 | 04 | 02 | 05 | 01 | 01 | Design installation layout and plan | 24-Feb-06 | 23-Mar-06 | A | P | AN_CE | Hrs | 40 | | 3,773 | | 3,773 |
| 1 | 04 | 02 | 05 | 01 | 01 | Prepare Bid Package for product integrated com | 24-Mar-06 | 30-Mar-06 | A | C | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 05 | 01 | 01 | Vendor Prepare Prop for product integrated com | 3-Apr-06 | 7-Apr-06 | A | C | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 05 | 01 | 01 | Evaluate Proposal for product integrated comp | 10-Apr-06 | 14-Apr-06 | A | C | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 05 | 01 | 01 | Receive production integration components | 18-Apr-06 | 15-May-06 | A | C | AN_CT | Hrs | 8 | | 481 | | 481 |
| 1 | 04 | 02 | 05 | 01 | 01 | Receive production integration components | 18-Apr-06 | 15-May-06 | A | C | AA_MSEG | $$ | | 43,000 | | 45,580 | 45,580 |
| 1 | 04 | 02 | 05 | 01 | 01 | QA Test production integration components | 4-May-07 | 17-May-07 | A | C | AN_CT | Hrs | 40 | | 2,468 | | 2,468 |
| 1 | 04 | 02 | 05 | 01 | 01 | QA Test production integration components | 4-May-07 | 17-May-07 | A | C | AN_CP | Hrs | 8 | | 774 | | 774 |
| **1** | **04** | **02** | **06** | | | **Vacuum** | | | | | | | **809** | **54,000** | **71,042** | **58,260** | **129,302** |
| **1** | **04** | **02** | **06** | **01** | | **Ion Pump Controller** | | | | | | | **565** | **54,000** | **49,942** | **58,260** | **108,202** |
| **1** | **04** | **02** | **06** | **01** | **01** | **Integrate Components** | | | | | | | **565** | **54,000** | **49,942** | **58,260** | **108,202** |
| 1 | 04 | 02 | 06 | 01 | 01 | Write control Software Requirements Spec. | 11-May-06 | 24-May-06 | A | C | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 06 | 01 | 01 | Design control software | 25-May-06 | 8-Jun-06 | A | P | AN_CP | Hrs | 20 | | 1,886 | | 1,886 |
| 1 | 04 | 02 | 06 | 01 | 01 | Write control software | 9-Jun-06 | 22-Jun-06 | A | C | AN_CP | Hrs | 160 | | 15,091 | | 15,091 |
| 1 | 04 | 02 | 06 | 01 | 01 | Test control software | 23-Jun-06 | 29-Jun-06 | A | C | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 06 | 01 | 01 | Design prototype test setup | 30-Jun-06 | 7-Jul-06 | A | P | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 06 | 01 | 01 | Prepare for design review | 10-Jul-06 | 14-Jul-06 | A | C | AN_CP | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 06 | 01 | 01 | Conduct design review | 17-Jul-06 | 18-Jul-06 | A | P | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 06 | 01 | 01 | Procure integration components for prototype ( | 19-Jul-06 | 19-Jul-06 | A | C | AN_MSEG | $$ | | 20,000 | | 21,200 | 21,200 |
| 1 | 04 | 02 | 06 | 01 | 01 | Receive integration components for prototype | 20-Jul-06 | 30-Aug-06 | A | C | AN_CT | Hrs | 8 | | 481 | | 481 |
| 1 | 04 | 02 | 06 | 01 | 01 | Assemble prototype | 31-Aug-06 | 14-Sep-06 | A | C | AN_CT | Hrs | 40 | | 2,406 | | 2,406 |
| 1 | 04 | 02 | 06 | 01 | 01 | Write integrated test procedure | 15-Sep-06 | 18-Sep-06 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 06 | 01 | 01 | Assemble test setup | 19-Sep-06 | 20-Sep-06 | A | C | AN_CT | Hrs | 8 | | 481 | | 481 |
| 1 | 04 | 02 | 06 | 01 | 01 | Perform prototype testing | 21-Sep-06 | 22-Sep-06 | A | C | AN_CT | Hrs | 8 | | 481 | | 481 |
| 1 | 04 | 02 | 06 | 01 | 01 | Perform prototype testing | 21-Sep-06 | 22-Sep-06 | A | C | AN_CP | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 06 | 01 | 01 | Write validation procedure | 25-Sep-06 | 29-Sep-06 | A | C | AN_CE | Hrs | 12 | | 1,132 | | 1,132 |
| 1 | 04 | 02 | 06 | 01 | 01 | Design installation layout and plan | 2-Oct-06 | 27-Oct-06 | A | C | AN_CE | Hrs | 40 | | 3,871 | | 3,871 |
| 1 | 04 | 02 | 06 | 01 | 01 | Prepare Bid Package for product integration co | 30-Oct-06 | 3-Nov-06 | A | C | AN_CE | Hrs | 16 | | 1,548 | | 1,548 |
| 1 | 04 | 02 | 06 | 01 | 01 | Vendor Prepare Prop for product integration co | 7-Nov-06 | 13-Nov-06 | A | C | AN_CE | Hrs | 16 | | 1,548 | | 1,548 |

| WBS Level | | | | | | LCLA DCE March-2005 | Early | Early | OBS | Fund | Res | Units | Budgeted Quantity | | Fully Burdened and Escalated Cost | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Run Time: 4/2205 8:43am | | | | | | Description | Start | Finish | | Type | Code | | Hours | $$ | Labor | M&S | Total (No Conting) |
| 1 | 2 | 3 | 4 | 5 | 6 | | | | | | | | | | | | |
| 1 | 04 | 02 | 06 | 01 | 01 | Evaluate Proposal for product integration comp | 14-Nov-06 | 20-Nov-06 | A | C | AN_CE | Hrs | 16 | | 1,548 | | 1,548 |
| 1 | 04 | 02 | 06 | 01 | 01 | Receive production integration components | 22-Nov-06 | 5-Jan-07 | A | C | AN_CT | Hrs | 8 | | 494 | | 494 |
| 1 | 04 | 02 | 06 | 01 | 01 | Receive production integration components | 22-Nov-06 | 5-Jan-07 | A | C | AA_MSEG | $$ | | 34,000 | | 37,060 | 37,060 |
| 1 | 04 | 02 | 06 | 01 | 01 | QA Test production integration components | 8-Jan-07 | 22-Jan-07 | A | C | AN_CT | Hrs | 40 | | 2,468 | | 2,468 |
| 1 | 04 | 02 | 06 | 01 | 01 | QA Test production integration components | 8-Jan-07 | 22-Jan-07 | A | C | AN_CP | Hrs | 77 | | 7,452 | | 7,452 |
| **1** | **04** | **02** | **06** | **02** | | **RGA** | | | | | | | **244** | **-** | **21,100** | **-** | **21,100** |
| 1 | 04 | 02 | 06 | 02 | | Write control Software Requirements Spec. | 11-May-06 | 24-May-06 | A | C | AN_CP | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 06 | 02 | | Design control software | 25-May-06 | 8-Jun-06 | A | P | AN_CP | Hrs | 20 | | 1,886 | | 1,886 |
| 1 | 04 | 02 | 06 | 02 | | Write control software | 9-Jun-06 | 22-Jun-06 | A | C | AN_CP | Hrs | 40 | | 3,773 | | 3,773 |
| 1 | 04 | 02 | 06 | 02 | | Test control software | 23-Jun-06 | 29-Jun-06 | A | C | AN_CP | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 06 | 02 | | Prepare for design review | 30-Jun-06 | 7-Jul-06 | A | C | AN_CP | Hrs | 40 | | 3,773 | | 3,773 |
| 1 | 04 | 02 | 06 | 02 | | Conduct design review | 10-Jul-06 | 11-Jul-06 | A | P | AN_CP | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 06 | 02 | | Receive production integration components | 12-Jul-06 | 1-Aug-06 | A | C | AN_CT | Hrs | 16 | | 962 | | 962 |
| 1 | 04 | 02 | 06 | 02 | | QA Test production integration components | 2-Aug-06 | 15-Aug-06 | A | C | AN_CT | Hrs | 40 | | 2,406 | | 2,406 |
| 1 | 04 | 02 | 06 | 02 | | QA Test production integration components | 2-Aug-06 | 15-Aug-06 | A | C | AN_CP | Hrs | 40 | | 3,773 | | 3,773 |
| **1** | **04** | **02** | **06** | **02** | **01** | **Integrate Components** | | | | | | | | | | | |
| **1** | **04** | **02** | **07** | | | **Machine Protection** | | | | | | | **768** | **65,000** | **63,147** | **68,900** | **132,047** |
| **1** | **04** | **02** | **07** | **01** | | **Undulator Global MPS** | | | | | | | **460** | **26,000** | **37,922** | **27,560** | **65,482** |
| **1** | **04** | **02** | **07** | **01** | **01** | **Hardware design** | | | | | | | **264** | **24,000** | **22,168** | **25,440** | **47,608** |
| 1 | 04 | 02 | 07 | 01 | 01 | Undulator global MPS module design | 3-Oct-05 | 28-Oct-05 | A | P | AN_CE | Hrs | 80 | | 7,546 | | 7,546 |
| 1 | 04 | 02 | 07 | 01 | 01 | Prepare for design review | 3-Oct-05 | 7-Oct-05 | A | P | AN_CE | Hrs | 24 | | 2,264 | | 2,264 |
| 1 | 04 | 02 | 07 | 01 | 01 | conduct design review | 31-Oct-05 | 1-Nov-05 | A | P | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 07 | 01 | 01 | Procure prototype MPS hardware components | 2-Nov-05 | 2-Nov-05 | A | C | AN_MSEG | $$ | | 4,000 | | 4,240 | 4,240 |
| 1 | 04 | 02 | 07 | 01 | 01 | Receive Prototype MPS Hardware Components | 3-Nov-05 | 9-Dec-05 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 07 | 01 | 01 | Assemble prototype MPS hardware | 12-Dec-05 | 9-Jan-06 | A | C | AN_CT | Hrs | 40 | | 2,406 | | 2,406 |
| 1 | 04 | 02 | 07 | 01 | 01 | Test prototype MPS hardware | 10-Jan-06 | 13-Jan-06 | A | C | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 07 | 01 | 01 | Specify production MPS hardware | 17-Jan-06 | 23-Jan-06 | A | P | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 07 | 01 | 01 | Write QA procedure for production MPS hardware | 24-Jan-06 | 30-Jan-06 | A | C | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 07 | 01 | 01 | Procure production MPS hardware | 31-Jan-06 | 31-Jan-06 | A | C | AN_MSEG | $$ | | 20,000 | | 21,200 | 21,200 |
| 1 | 04 | 02 | 07 | 01 | 01 | Receive production and spare MPS hardware | 1-Feb-06 | 16-Feb-06 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 07 | 01 | 01 | QA Test production MPS hardware | 17-Feb-06 | 3-Mar-06 | A | C | AN_CT | Hrs | 40 | | 2,406 | | 2,406 |
| **1** | **04** | **02** | **07** | **01** | **02** | **Interface components** | | | | | | | **196** | **2,000** | **15,754** | **2,120** | **17,874** |
| 1 | 04 | 02 | 07 | 01 | 02 | Design interface electronics | 31-Oct-05 | 11-Nov-05 | A | P | AN_CE | Hrs | 20 | | 1,886 | | 1,886 |
| 1 | 04 | 02 | 07 | 01 | 02 | Prepare for design review | 14-Nov-05 | 18-Nov-05 | A | C | AN_CE | Hrs | 24 | | 2,264 | | 2,264 |
| 1 | 04 | 02 | 07 | 01 | 02 | conduct design review | 21-Nov-05 | 22-Nov-05 | A | P | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 07 | 01 | 02 | Procure prototype Interface electronics compon | 23-Nov-05 | 23-Nov-05 | A | C | AN_MSEG | $$ | | 2,000 | | 2,120 | 2,120 |
| 1 | 04 | 02 | 07 | 01 | 02 | Receive Prototype Interface Electronics | 28-Nov-05 | 17-Jan-06 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 07 | 01 | 02 | Assemble prototype Interface electronics | 18-Jan-06 | 31-Jan-06 | A | C | AN_CT | Hrs | 40 | | 2,406 | | 2,406 |
| 1 | 04 | 02 | 07 | 01 | 02 | Test prototype Interface electronics | 1-Feb-06 | 6-Feb-06 | A | C | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 07 | 01 | 02 | Specify production Interface electronics | 7-Feb-06 | 13-Feb-06 | A | P | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 07 | 01 | 02 | Write QA procedure for production Interface el | 14-Feb-06 | 14-Feb-06 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 07 | 01 | 02 | Receive production Interface electronics | 16-Feb-06 | 2-Mar-06 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 07 | 01 | 02 | QA Test production Interface electronics | 3-Mar-06 | 16-Mar-06 | A | C | AN_CT | Hrs | 40 | | 2,406 | | 2,406 |
| **1** | **04** | **02** | **07** | **02** | | **Cherenkov Detector** | | | | | | | **156** | **35,000** | **12,801** | **37,100** | **49,901** |
| **1** | **04** | **02** | **07** | **02** | **01** | **Signal interface** | | | | | | | **156** | **35,000** | **12,801** | **37,100** | **49,901** |
| 1 | 04 | 02 | 07 | 02 | 01 | Design signal interface | 1-Feb-06 | 14-Feb-06 | A | C | AN_CE | Hrs | 20 | | 1,886 | | 1,886 |
| 1 | 04 | 02 | 07 | 02 | 01 | Prepare for design review | 15-Feb-06 | 22-Feb-06 | A | C | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 07 | 02 | 01 | conduct design review | 23-Feb-06 | 24-Feb-06 | A | C | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 07 | 02 | 01 | Procure prototype signal electronics component | 27-Feb-06 | 27-Feb-06 | A | C | AN_MSEG | $$ | | 2,000 | | 2,120 | 2,120 |
| 1 | 04 | 02 | 07 | 02 | 01 | Receive Prototype Signal Electronics | 28-Feb-06 | 3-Apr-06 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 07 | 02 | 01 | Assemble prototype signal electronics | 4-Apr-06 | 5-Apr-06 | A | C | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 07 | 02 | 01 | Test prototype signal electronics | 6-Apr-06 | 11-Apr-06 | A | C | AN_CT | Hrs | 16 | | 962 | | 962 |
| 1 | 04 | 02 | 07 | 02 | 01 | Specify production signal electronics | 12-Apr-06 | 13-Apr-06 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 07 | 02 | 01 | Write QA procedure for production signal elect | 14-Apr-06 | 17-Apr-06 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 07 | 02 | 01 | Receive production and spare signal electronic | 19-Apr-06 | 2-May-06 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 07 | 02 | 01 | REC: production signal electronics | 3-May-06 | 3-May-06 | A | C | AA_MSEG | $$ | | 33,000 | | 34,980 | 34,980 |
| 1 | 04 | 02 | 07 | 02 | 01 | QA Test production and spare signal electronic | 4-May-06 | 17-May-06 | A | C | AN_CT | Hrs | 40 | | 2,406 | | 2,406 |
| **1** | **04** | **02** | **07** | **03** | | **Gamma Ray Detector** | | | | | | | **152** | **4,000** | **12,424** | **4,240** | **16,664** |
| **1** | **04** | **02** | **07** | **03** | **01** | **Signal interface** | | | | | | | **152** | **4,000** | **12,424** | **4,240** | **16,664** |
| 1 | 04 | 02 | 07 | 03 | 01 | Design signal interface | 2-Nov-05 | 15-Nov-05 | A | P | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 07 | 03 | 01 | Prepare for design review | 16-Nov-05 | 22-Nov-05 | A | C | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 07 | 03 | 01 | conduct design review | 23-Nov-05 | 28-Nov-05 | A | P | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 07 | 03 | 01 | Procure prototype signal electronics component | 29-Nov-05 | 29-Nov-05 | A | C | AN_MSEG | $$ | | 2,000 | | 2,120 | 2,120 |
| 1 | 04 | 02 | 07 | 03 | 01 | Receive Prototype Signal Electronics Component | 30-Nov-05 | 19-Jan-06 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |

| WBS Level | | | | | | LCLA DCE March-2005 | Early | Early | OBS | Fund | Res | Units | Budgeted Quantity | | Fully Burdened and Escalated Cost | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Run Time: 4/2205 8:43am | | | | | | Description | Start | Finish | | Type | Code | | Hours | $$ | Labor | M&S | Total (No Conting) |
| 1 | 2 | 3 | 4 | 5 | 6 | | | | | | | | | | | | |
| 1 | 04 | 02 | 07 | 03 | 01 | Assemble prototype signal electronics | 20-Jan-06 | 23-Jan-06 | A | C | AN_CE | Hrs | 16 | | 1,509 | | 1,509 |
| 1 | 04 | 02 | 07 | 03 | 01 | Test prototype signal electronics | 24-Jan-06 | 27-Jan-06 | A | C | AN_CT | Hrs | 16 | | 962 | | 962 |
| 1 | 04 | 02 | 07 | 03 | 01 | Specify production signal electronics | 30-Jan-06 | 31-Jan-06 | A | P | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 07 | 03 | 01 | Write QA procedure for production signal elect | 1-Feb-06 | 2-Feb-06 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 07 | 03 | 01 | Procure production signal electronics | 3-Feb-06 | 3-Feb-06 | A | C | AN_MSEG | $$ | | 2,000 | | 2,120 | 2,120 |
| 1 | 04 | 02 | 07 | 03 | 01 | Receive production signal electronics | 6-Feb-06 | 17-Feb-06 | A | C | AN_CE | Hrs | 8 | | 755 | | 755 |
| 1 | 04 | 02 | 07 | 03 | 01 | QA Test production signal electronics | 21-Feb-06 | 6-Mar-06 | A | C | AN_CT | Hrs | 40 | | 2,406 | | 2,406 |
| **1** | **04** | **02** | **08** | | | **Power Supply Controls** | | | | | | | **1,029** | **-** | **97,084** | **-** | **97,084** |
| 1 | 04 | 02 | 08 | | | Design Power Supply Control | 28-Apr-06 | 17-Aug-06 | A | P | AN_CP | Hrs | 393 | | 37,068 | | 37,068 |
| 1 | 04 | 02 | 08 | | | Design Power Supply Control | 28-Apr-06 | 17-Aug-06 | A | P | AN_CE | Hrs | 442 | | 41,689 | | 41,689 |
| 1 | 04 | 02 | 08 | | | Build H/W and Write Docmtn Power Supply Control | 18-Aug-06 | 25-Sep-06 | A | P | AN_CCA | Hrs | 94 | | 8,866 | | 8,866 |
| 1 | 04 | 02 | 08 | | | Write S/W Docmtn Power Supply Control | 18-Aug-06 | 25-Sep-06 | A | P | AN_CP | Hrs | 40 | | 3,773 | | 3,773 |
| 1 | 04 | 02 | 08 | | | Integrate software & hardware | 26-Sep-06 | 2-Oct-06 | A | P | AN_CP | Hrs | 40 | | 3,792 | | 3,792 |
| 1 | 04 | 02 | 08 | | | Integrate software & hardware | 26-Sep-06 | 2-Oct-06 | A | P | AN_CCA | Hrs | 20 | | 1,896 | | 1,896 |
| **1** | **05** | **02** | | | | **Controls** | | | | | | | **6,270** | **30,000** | **1,171,572** | **38,700** | **1,210,272** |
| **1** | **05** | **02** | **01** | | | **Controls Engineering** | | | | | | | | | | | |
| **1** | **05** | **02** | **02** | | | **Slow Controls** | | | | | | | **5,598** | **30,000** | **1,041,327** | **38,700** | **1,080,027** |
| 1 | 05 | 02 | 02 | | | Specification - Slow Controls | 1-Feb-05 | 24-May-05 | | P | LL_CE | Hrs | 200 | | 36,342 | | 36,342 |
| 1 | 05 | 02 | 02 | | | Design - Slow Controls | 25-May-05 | 5-Jun-06 | | P | LL_CE | Hrs | 1,000 | | 184,968 | | 184,968 |
| 1 | 05 | 02 | 02 | | | Design Review - Slow Controls | 6-Jun-06 | 3-Jul-06 | | C | LL_PHSS | Hrs | 8 | | 1,763 | | 1,763 |
| 1 | 05 | 02 | 02 | | | Design Review - Slow Controls | 6-Jun-06 | 3-Jul-06 | | C | LL_CE | Hrs | 8 | | 1,494 | | 1,494 |
| 1 | 05 | 02 | 02 | | | Prepare Bid Pkg Servers - Slow Controls | 5-Jul-06 | 1-Aug-06 | | C | LL_CE | Hrs | 16 | | 2,989 | | 2,989 |
| 1 | 05 | 02 | 02 | | | Vendor Fab/Ship Servers - Slow Controls | 3-Oct-06 | 12-Mar-07 | | C | LL_PHSS | Hrs | 16 | | 3,618 | | 3,618 |
| 1 | 05 | 02 | 02 | | | Vendor Fab/Ship Servers - Slow Controls | 3-Oct-06 | 12-Mar-07 | | C | LA_MSEG | $$ | | 30,000 | | 38,700 | 38,700 |
| 1 | 05 | 02 | 02 | | | Assemble FEE - Slow Controls | 13-Mar-07 | 9-Apr-07 | | C | LL_CT | Hrs | 250 | | 37,233 | | 37,233 |
| 1 | 05 | 02 | 02 | | | Assemble FEE - Slow Controls | 13-Mar-07 | 9-Apr-07 | | C | LL_CE | Hrs | 1,000 | | 191,660 | | 191,660 |
| 1 | 05 | 02 | 02 | | | Programming FEE - Slow Controls | 10-Apr-07 | 7-May-07 | | C | LL_CP | Hrs | 200 | | 41,158 | | 41,158 |
| 1 | 05 | 02 | 02 | | | Assemble Near Hall - Slow Controls | 13-Mar-07 | 9-Apr-07 | | C | LL_CT | Hrs | 250 | | 37,233 | | 37,233 |
| 1 | 05 | 02 | 02 | | | Assemble Near Hall - Slow Controls | 13-Mar-07 | 9-Apr-07 | | C | LL_CE | Hrs | 1,000 | | 191,660 | | 191,660 |
| 1 | 05 | 02 | 02 | | | Programming Near Hall - Slow Controls | 10-Apr-07 | 7-May-07 | | C | LL_CP | Hrs | 200 | | 41,158 | | 41,158 |
| 1 | 05 | 02 | 02 | | | Assemble Far Hall - Slow Controls | 13-Mar-07 | 9-Apr-07 | | C | LL_CT | Hrs | 250 | | 37,233 | | 37,233 |
| 1 | 05 | 02 | 02 | | | Assemble Far Hall - Slow Controls | 13-Mar-07 | 9-Apr-07 | | C | LL_CE | Hrs | 1,000 | | 191,660 | | 191,660 |
| 1 | 05 | 02 | 02 | | | Programming Far Hall - Slow Controls | 10-Apr-07 | 7-May-07 | | C | LL_CP | Hrs | 200 | | 41,158 | | 41,158 |
| **1** | **05** | **02** | **03** | | | **Fast Controls** | | | | | | | **376** | **-** | **73,200** | **-** | **73,200** |
| 1 | 05 | 02 | 03 | | | Specification - Fast Controls | 5-Jul-06 | 29-Aug-06 | | C | LL_PHS | Hrs | 80 | | 15,968 | | 15,968 |
| 1 | 05 | 02 | 03 | | | Design - Fast Controls | 30-Aug-06 | 25-Oct-06 | | C | LL_PHS | Hrs | 160 | | 32,310 | | 32,310 |
| 1 | 05 | 02 | 03 | | | Prepare Bid Pkg - Fast Controls | 26-Oct-06 | 22-Nov-06 | | C | LL_CE | Hrs | 16 | | 3,067 | | 3,067 |
| 1 | 05 | 02 | 03 | | | Assemble FEE - Fast Controls | 2-Jul-07 | 30-Jul-07 | | C | LL_CT | Hrs | 40 | | 5,957 | | 5,957 |
| 1 | 05 | 02 | 03 | | | Assemble FEE - Fast Controls | 2-Jul-07 | 30-Jul-07 | | C | LL_CE | Hrs | 40 | | 7,666 | | 7,666 |
| 1 | 05 | 02 | 03 | | | Programming FEE - Fast Controls | 31-Jul-07 | 27-Aug-07 | | C | LL_CP | Hrs | 40 | | 8,232 | | 8,232 |
| **1** | **05** | **02** | **04** | | | **Femto Controls** | | | | | | | **296** | **-** | **57,045** | **-** | **57,045** |
| 1 | 05 | 02 | 04 | | | Specification - Femto Controls | 5-Jul-06 | 29-Aug-06 | | C | LL_PHS | Hrs | 80 | | 15,968 | | 15,968 |
| 1 | 05 | 02 | 04 | | | Design - Femto Controls | 30-Aug-06 | 25-Oct-06 | | C | LL_PHS | Hrs | 80 | | 16,155 | | 16,155 |
| 1 | 05 | 02 | 04 | | | Prepare Bid Pkg - Femto Controls | 26-Oct-06 | 22-Nov-06 | | C | LL_CE | Hrs | 16 | | 3,067 | | 3,067 |
| 1 | 05 | 02 | 04 | | | Assemble FEE - Femto Controls | 2-Jul-07 | 30-Jul-07 | | C | LL_CT | Hrs | 40 | | 5,957 | | 5,957 |
| 1 | 05 | 02 | 04 | | | Assemble FEE - Femto Controls | 2-Jul-07 | 30-Jul-07 | | C | LL_CE | Hrs | 40 | | 7,666 | | 7,666 |
| 1 | 05 | 02 | 04 | | | Programming FEE - Femto Controls | 31-Jul-07 | 27-Aug-07 | | C | LL_CP | Hrs | 40 | | 8,232 | | 8,232 |
| **1** | **06** | **02** | | | | **Controls Subsystem** | | | | | | | **18,256** | **3,523,000** | **1,903,569** | **4,105,005** | **6,008,574** |
| **1** | **06** | **02** | **01** | | | **Cabling** | | | | | | | **2,520** | **209,000** | **290,679** | **246,620** | **537,299** |
| **1** | **06** | **02** | **01** | **01** | | **Front End Enclosure Cable** | | | | | | | **1,060** | **22,000** | **123,278** | **25,960** | **149,238** |
| 1 | 06 | 02 | 01 | 01 | | Specification FEE - Cabling | 5-Jul-07 | 1-Aug-07 | | C | SL_PHS | Hrs | 20 | | 1,536 | | 1,536 |
| 1 | 06 | 02 | 01 | 01 | | Specification FEE - Cabling | 5-Jul-07 | 1-Aug-07 | | C | SL_EE | Hrs | 80 | | 9,494 | | 9,494 |
| 1 | 06 | 02 | 01 | 01 | | Specification FEE - Cabling | 5-Jul-07 | 1-Aug-07 | | C | SL_CE | Hrs | 40 | | 4,747 | | 4,747 |
| 1 | 06 | 02 | 01 | 01 | | Design FEE - Cabling | 2-Aug-07 | 29-Aug-07 | | C | SL_PHS | Hrs | 40 | | 3,072 | | 3,072 |
| 1 | 06 | 02 | 01 | 01 | | Design FEE - Cabling | 2-Aug-07 | 29-Aug-07 | | C | SL_EE | Hrs | 80 | | 9,494 | | 9,494 |
| 1 | 06 | 02 | 01 | 01 | | Design FEE - Cabling | 2-Aug-07 | 29-Aug-07 | | C | SL_CE | Hrs | 160 | | 18,987 | | 18,987 |
| 1 | 06 | 02 | 01 | 01 | | Vendor Fab/Ship FEE Cable & Cable Tray - Cabling | 15-Oct-07 | 9-Nov-07 | | C | SA_MSEQ | $$ | | 12,000 | | 14,160 | 14,160 |
| 1 | 06 | 02 | 01 | 01 | | Vendor Fab/Ship FEE Racks & Panels - Cabling | 15-Oct-07 | 9-Nov-07 | | C | SA_MSEQ | $$ | | 10,000 | | 11,800 | 11,800 |
| 1 | 06 | 02 | 01 | 01 | | Prepare Bid Pkg FEE Racks & Panels - Cabling | 30-Aug-07 | 13-Sep-07 | | C | SL_EE | Hrs | 160 | | 18,987 | | 18,987 |
| 1 | 06 | 02 | 01 | 01 | | Prepare Bid Pkg FEE Racks & Panels - Cabling | 30-Aug-07 | 13-Sep-07 | | C | SL_CE | Hrs | 160 | | 18,987 | | 18,987 |
| 1 | 06 | 02 | 01 | 01 | | Prepare Bid Pkg FEE Cable & Cable Tray - Cabling | 30-Aug-07 | 13-Sep-07 | | C | SL_EE | Hrs | 160 | | 18,987 | | 18,987 |
| 1 | 06 | 02 | 01 | 01 | | Prepare Bid Pkg FEE Cable & Cable Tray - Cabling | 30-Aug-07 | 13-Sep-07 | | C | SL_CE | Hrs | 160 | | 18,987 | | 18,987 |
| **1** | **06** | **02** | **01** | **02** | | **Near Hall Cable** | | | | | | | **580** | **66,000** | **66,318** | **77,880** | **144,198** |
| 1 | 06 | 02 | 01 | 02 | | Specification Near Hall - Cabling | 5-Jul-07 | 1-Aug-07 | | C | SL_PHS | Hrs | 20 | | 1,536 | | 1,536 |

| WBS Level | | | | | | LCLA DCE March-2005 | Early | Early | OBS | Fund | Res | Units | Budgeted Quantity | | Fully Burdened and Escalated Cost | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Run Time: 4/2205 8:43am | | | | | | Description | Start | Finish | | Type | Code | | Hours | $$ | Labor | M&S | Total (No Conting) |
| 1 | 2 | 3 | 4 | 5 | 6 | | | | | | | | | | | | |
| 1 | 06 | 02 | 01 | 02 | | Specification Near Hall - Cabling | 5-Jul-07 | 1-Aug-07 | | C | SL_EE | Hrs | 80 | | 9,494 | | 9,494 |
| 1 | 06 | 02 | 01 | 02 | | Specification Near Hall - Cabling | 5-Jul-07 | 1-Aug-07 | | C | SL_CE | Hrs | 40 | | 4,747 | | 4,747 |
| 1 | 06 | 02 | 01 | 02 | | Design Near Hall - Cabling | 2-Aug-07 | 29-Aug-07 | | C | SL_PHS | Hrs | 40 | | 3,072 | | 3,072 |
| 1 | 06 | 02 | 01 | 02 | | Design Near Hall - Cabling | 2-Aug-07 | 29-Aug-07 | | C | SL_EE | Hrs | 80 | | 9,494 | | 9,494 |
| 1 | 06 | 02 | 01 | 02 | | Design Near Hall - Cabling | 2-Aug-07 | 29-Aug-07 | | C | SL_CE | Hrs | 160 | | 18,987 | | 18,987 |
| 1 | 06 | 02 | 01 | 02 | | Prepare Bid Pkg NH Racks & Panels - Cabling | 30-Aug-07 | 13-Sep-07 | | C | SL_EE | Hrs | 40 | | 4,747 | | 4,747 |
| 1 | 06 | 02 | 01 | 02 | | Prepare Bid Pkg NH Racks & Panels - Cabling | 30-Aug-07 | 13-Sep-07 | | C | SL_CE | Hrs | 40 | | 4,747 | | 4,747 |
| 1 | 06 | 02 | 01 | 02 | | Prepare Bid Pkg NH Cable & Cable Tray - Cabling | 30-Aug-07 | 13-Sep-07 | | C | SL_EE | Hrs | 40 | | 4,747 | | 4,747 |
| 1 | 06 | 02 | 01 | 02 | | Prepare Bid Pkg NH Cable & Cable Tray - Cabling | 30-Aug-07 | 13-Sep-07 | | C | SL_CE | Hrs | 40 | | 4,747 | | 4,747 |
| 1 | 06 | 02 | 01 | 02 | | Vendor Fab/Ship NH Cable & Cable Tray - Cabling | 15-Oct-07 | 9-Nov-07 | | C | SA_MSEQ | $$ | | 40,000 | | 47,200 | 47,200 |
| 1 | 06 | 02 | 01 | 02 | | Vendor Fab/Ship NH Racks & Panels - Cabling | 15-Oct-07 | 9-Nov-07 | | C | SA_MSEQ | $$ | | 26,000 | | 30,680 | 30,680 |
| **1** | **06** | **02** | **01** | **03** | | **Tunnel Cable** | | | | | | | **300** | **52,000** | **34,765** | **61,360** | **96,125** |
| 1 | 06 | 02 | 01 | 03 | | Specification Tunnel - Cabling | 5-Jul-07 | 1-Aug-07 | | C | SL_PHS | Hrs | 20 | | 1,536 | | 1,536 |
| 1 | 06 | 02 | 01 | 03 | | Specification Tunnel - Cabling | 5-Jul-07 | 1-Aug-07 | | C | SL_EE | Hrs | 40 | | 4,747 | | 4,747 |
| 1 | 06 | 02 | 01 | 03 | | Specification Tunnel - Cabling | 5-Jul-07 | 1-Aug-07 | | C | SL_CE | Hrs | 40 | | 4,747 | | 4,747 |
| 1 | 06 | 02 | 01 | 03 | | Design Tunnel - Cabling | 2-Aug-07 | 29-Aug-07 | | C | SL_EE | Hrs | 80 | | 9,494 | | 9,494 |
| 1 | 06 | 02 | 01 | 03 | | Design Tunnel - Cabling | 2-Aug-07 | 29-Aug-07 | | C | SL_CE | Hrs | 80 | | 9,494 | | 9,494 |
| 1 | 06 | 02 | 01 | 03 | | Prepare Bid Pkg Tunnel Cable/Cable Tray - Cablng | 30-Aug-07 | 13-Sep-07 | | C | SL_EE | Hrs | 40 | | 4,747 | | 4,747 |
| 1 | 06 | 02 | 01 | 03 | | Vendor Fab/Ship Tunnel Cable/Cable Tray - Cablng | 15-Oct-07 | 9-Nov-07 | | C | SA_MSEQ | $$ | | 52,000 | | 61,360 | 61,360 |
| **1** | **06** | **02** | **01** | **04** | | **Far Hall Cable** | | | | | | | **580** | **69,000** | **66,318** | **81,420** | **147,738** |
| 1 | 06 | 02 | 01 | 04 | | Specification Far Hall - Cabling | 5-Jul-07 | 1-Aug-07 | | C | SL_PHS | Hrs | 20 | | 1,536 | | 1,536 |
| 1 | 06 | 02 | 01 | 04 | | Specification Far Hall - Cabling | 5-Jul-07 | 1-Aug-07 | | C | SL_EE | Hrs | 80 | | 9,494 | | 9,494 |
| 1 | 06 | 02 | 01 | 04 | | Specification Far Hall - Cabling | 5-Jul-07 | 1-Aug-07 | | C | SL_CE | Hrs | 40 | | 4,747 | | 4,747 |
| 1 | 06 | 02 | 01 | 04 | | Design Far Hall - Cabling | 2-Aug-07 | 29-Aug-07 | | C | SL_PHS | Hrs | 40 | | 3,072 | | 3,072 |
| 1 | 06 | 02 | 01 | 04 | | Design Far Hall - Cabling | 2-Aug-07 | 29-Aug-07 | | C | SL_EE | Hrs | 80 | | 9,494 | | 9,494 |
| 1 | 06 | 02 | 01 | 04 | | Design Far Hall - Cabling | 2-Aug-07 | 29-Aug-07 | | C | SL_CE | Hrs | 160 | | 18,987 | | 18,987 |
| 1 | 06 | 02 | 01 | 04 | | Prepare Bid Pkg Racks & Panels FH - Cabling | 30-Aug-07 | 13-Sep-07 | | C | SL_EE | Hrs | 40 | | 4,747 | | 4,747 |
| 1 | 06 | 02 | 01 | 04 | | Prepare Bid Pkg Racks & Panels FH - Cabling | 30-Aug-07 | 13-Sep-07 | | C | SL_CE | Hrs | 40 | | 4,747 | | 4,747 |
| 1 | 06 | 02 | 01 | 04 | | Prepare Bid Pkg Cable & Cable Tray FH - Cabling | 30-Aug-07 | 13-Sep-07 | | C | SL_EE | Hrs | 40 | | 4,747 | | 4,747 |
| 1 | 06 | 02 | 01 | 04 | | Prepare Bid Pkg Cable & Cable Tray FH - Cabling | 30-Aug-07 | 13-Sep-07 | | C | SL_CE | Hrs | 40 | | 4,747 | | 4,747 |
| 1 | 06 | 02 | 01 | 04 | | Vendor Fab/Ship Cable & Cable Tray FH - Cabling | 1-Nov-07 | 30-Nov-07 | | C | SA_MSEQ | $$ | | 40,000 | | 47,200 | 47,200 |
| 1 | 06 | 02 | 01 | 04 | | Vendor Fab/Ship Racks & Panels FH - Cabling | 1-Nov-07 | 30-Nov-07 | | C | SA_MSEQ | $$ | | 29,000 | | 34,220 | 34,220 |
| **1** | **06** | **02** | **02** | | | **Network** | | | | | | | **2,340** | **500,000** | **260,047** | **579,950** | **839,997** |
| 1 | 06 | 02 | 02 | | | Specification - Network | 10-Jul-06 | 1-Sep-06 | | C | SL_EE | Hrs | 160 | | 18,506 | | 18,506 |
| 1 | 06 | 02 | 02 | | | Specification - Network | 10-Jul-06 | 1-Sep-06 | | C | SL_CE | Hrs | 160 | | 18,506 | | 18,506 |
| 1 | 06 | 02 | 02 | | | Design FEE - Network | 5-Sep-06 | 12-Mar-07 | | C | SL_PHS | Hrs | 40 | | 3,060 | | 3,060 |
| 1 | 06 | 02 | 02 | | | Design FEE - Network | 5-Sep-06 | 12-Mar-07 | | C | SL_EE | Hrs | 320 | | 37,822 | | 37,822 |
| 1 | 06 | 02 | 02 | | | Design FEE - Network | 5-Sep-06 | 12-Mar-07 | | C | SL_CE | Hrs | 320 | | 37,822 | | 37,822 |
| 1 | 06 | 02 | 02 | | | Design Near Hall - Network | 5-Sep-06 | 12-Mar-07 | | C | SL_PHS | Hrs | 20 | | 1,530 | | 1,530 |
| 1 | 06 | 02 | 02 | | | Design Near Hall - Network | 5-Sep-06 | 12-Mar-07 | | C | SL_EE | Hrs | 160 | | 18,911 | | 18,911 |
| 1 | 06 | 02 | 02 | | | Design Near Hall - Network | 5-Sep-06 | 12-Mar-07 | | C | SL_CE | Hrs | 160 | | 18,911 | | 18,911 |
| 1 | 06 | 02 | 02 | | | Prepare Bid Pkg Electronics - Network | 13-Mar-07 | 7-May-07 | | C | SL_EE | Hrs | 40 | | 4,747 | | 4,747 |
| 1 | 06 | 02 | 02 | | | Design Tunnel - Network | 5-Sep-06 | 12-Mar-07 | | C | SL_EE | Hrs | 40 | | 4,728 | | 4,728 |
| 1 | 06 | 02 | 02 | | | Design Tunnel - Network | 5-Sep-06 | 12-Mar-07 | | C | SL_CE | Hrs | 40 | | 4,728 | | 4,728 |
| 1 | 06 | 02 | 02 | | | Design Far Hall - Network | 5-Sep-06 | 12-Mar-07 | | C | SL_PHS | Hrs | 40 | | 3,060 | | 3,060 |
| 1 | 06 | 02 | 02 | | | Design Far Hall - Network | 5-Sep-06 | 12-Mar-07 | | C | SL_EE | Hrs | 160 | | 18,911 | | 18,911 |
| 1 | 06 | 02 | 02 | | | Design Far Hall - Network | 5-Sep-06 | 12-Mar-07 | | C | SL_CE | Hrs | 160 | | 18,911 | | 18,911 |
| 1 | 06 | 02 | 02 | | | Vendor Fab/Ship Electronics - Network | 26-Jun-07 | 14-Nov-07 | | C | SA_MSEQ | $$ | | 500,000 | | 579,950 | 579,950 |
| 1 | 06 | 02 | 02 | | | Programming Near Hall - Network | 13-Mar-07 | 3-Jul-07 | | C | SL_CP | Hrs | 160 | | 15,352 | | 15,352 |
| 1 | 06 | 02 | 02 | | | Programming Tunnel - Network | 13-Mar-07 | 3-Jul-07 | | C | SL_CP | Hrs | 40 | | 3,838 | | 3,838 |
| 1 | 06 | 02 | 02 | | | Programming Far Hall - Network | 13-Mar-07 | 3-Jul-07 | | C | SL_CP | Hrs | 160 | | 15,352 | | 15,352 |
| 1 | 06 | 02 | 02 | | | Programming FEE - Network | 13-Mar-07 | 3-Jul-07 | | C | SL_CP | Hrs | 160 | | 15,352 | | 15,352 |
| **1** | **06** | **02** | **03** | | | **PC Support** | | | | | | | **1,000** | **360,000** | **110,017** | **424,800** | **534,817** |
| 1 | 06 | 02 | 03 | | | Specification - PC Support | 13-Mar-07 | 14-May-07 | | C | SL_EE | Hrs | 40 | | 4,747 | | 4,747 |
| 1 | 06 | 02 | 03 | | | Specification - PC Support | 13-Mar-07 | 14-May-07 | | C | SL_CE | Hrs | 40 | | 4,747 | | 4,747 |
| 1 | 06 | 02 | 03 | | | Design Near Hall - PC Support | 15-May-07 | 11-Jul-07 | | C | SL_EE | Hrs | 80 | | 9,494 | | 9,494 |
| 1 | 06 | 02 | 03 | | | Design Near Hall - PC Support | 15-May-07 | 11-Jul-07 | | C | SL_CE | Hrs | 80 | | 9,494 | | 9,494 |
| 1 | 06 | 02 | 03 | | | Prepare Bid Pkg Domain Server - PC Support | 7-Sep-07 | 4-Oct-07 | | C | SL_EE | Hrs | 40 | | 4,771 | | 4,771 |
| 1 | 06 | 02 | 03 | | | Prepare Bid Pkg Domain Server - PC Support | 7-Sep-07 | 4-Oct-07 | | C | SL_CE | Hrs | 40 | | 4,771 | | 4,771 |
| 1 | 06 | 02 | 03 | | | Prepare Bid Pkg File Server - PC Support | 7-Sep-07 | 4-Oct-07 | | C | SL_EE | Hrs | 40 | | 4,771 | | 4,771 |
| 1 | 06 | 02 | 03 | | | Prepare Bid Pkg File Server - PC Support | 7-Sep-07 | 4-Oct-07 | | C | SL_CE | Hrs | 40 | | 4,771 | | 4,771 |
| 1 | 06 | 02 | 03 | | | Design Far Hall - PC Support | 12-Jul-07 | 6-Sep-07 | | C | SL_PHS | Hrs | 40 | | 3,072 | | 3,072 |
| 1 | 06 | 02 | 03 | | | Design Far Hall - PC Support | 12-Jul-07 | 6-Sep-07 | | C | SL_EE | Hrs | 80 | | 9,494 | | 9,494 |
| 1 | 06 | 02 | 03 | | | Design Far Hall - PC Support | 12-Jul-07 | 6-Sep-07 | | C | SL_CE | Hrs | 80 | | 9,494 | | 9,494 |

| WBS Level | | | | | | LCLA DCE March-2005 | Early | Early | OBS | Fund | Res | Units | Budgeted Quantity | | Fully Burdened and Escalated Cost | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Run Time: 4/2205 8:43am | | | | | | Description | Start | Finish | | Type | Code | | Hours | $$ | Labor | M&S | Total (No Conting) |
| 1 | 2 | 3 | 4 | 5 | 6 | | | | | | | | | | | | |
| 1 | 06 | 02 | 03 | | | Vendor Fab/Ship Domain Server - PC Support | 5-Nov-07 | 15-Feb-08 | | C | SA_MSEQ | $$ | | 60,000 | | 70,800 | 70,800 |
| 1 | 06 | 02 | 03 | | | Vendor Fab/Ship File Server - PC Support | 5-Nov-07 | 15-Feb-08 | | C | SA_MSEQ | $$ | | 100,000 | | 118,000 | 118,000 |
| 1 | 06 | 02 | 03 | | | Programming Near Hall - PC Support | 22-May-07 | 13-Sep-07 | | C | SL_CP | Hrs | 160 | | 15,352 | | 15,352 |
| 1 | 06 | 02 | 03 | | | Programming Far Hall - PC Support | 19-Jul-07 | 8-Nov-07 | | C | SL_CP | Hrs | 160 | | 15,497 | | 15,497 |
| 1 | 06 | 02 | 03 | | | Vendor Fab/Ship PCs/Software/Printer - PC Spt | 5-Nov-07 | 15-Feb-08 | | C | SA_MSEQ | $$ | | 200,000 | | 236,000 | 236,000 |
| 1 | 06 | 02 | 03 | | | Prepare Bid Pkg PCs/Software/Printer - PC Spt | 7-Sep-07 | 4-Oct-07 | | C | SL_EE | Hrs | 40 | | 4,771 | | 4,771 |
| 1 | 06 | 02 | 03 | | | Prepare Bid Pkg PCs/Software/Printer - PC Spt | 7-Sep-07 | 4-Oct-07 | | C | SL_CE | Hrs | 40 | | 4,771 | | 4,771 |
| **1** | **06** | **02** | **04** | | | **Beamline Controls** | | | | | | | **2,288** | **1,499,000** | **231,578** | **1,755,385** | **1,986,963** |
| 1 | 06 | 02 | 04 | | | Design High Perf Data Storage - Beamline Control | 12-Jan-07 | 9-Feb-07 | | C | SL_PHS | Hrs | 80 | | 6,144 | | 6,144 |
| 1 | 06 | 02 | 04 | | | Design High Perf Data Storage - Beamline Control | 12-Jan-07 | 9-Feb-07 | | C | SL_EE | Hrs | 80 | | 9,494 | | 9,494 |
| 1 | 06 | 02 | 04 | | | Design High Perf Data Storage - Beamline Control | 12-Jan-07 | 9-Feb-07 | | C | SL_CP | Hrs | 80 | | 7,676 | | 7,676 |
| 1 | 06 | 02 | 04 | | | Design High Perf Data Storage - Beamline Control | 12-Jan-07 | 9-Feb-07 | | C | SL_CE | Hrs | 80 | | 9,494 | | 9,494 |
| 1 | 06 | 02 | 04 | | | Specification - Beamline Controls | 10-Jul-06 | 11-Jan-07 | | C | SL_PHS | Hrs | 80 | | 6,067 | | 6,067 |
| 1 | 06 | 02 | 04 | | | Specification - Beamline Controls | 10-Jul-06 | 11-Jan-07 | | C | SL_EE | Hrs | 80 | | 9,375 | | 9,375 |
| 1 | 06 | 02 | 04 | | | Specification - Beamline Controls | 10-Jul-06 | 11-Jan-07 | | C | SL_CE | Hrs | 120 | | 14,063 | | 14,063 |
| 1 | 06 | 02 | 04 | | | Design Near Hall - Beamline Control | 12-Jan-07 | 3-Jul-07 | | C | SL_PHS | Hrs | 80 | | 6,144 | | 6,144 |
| 1 | 06 | 02 | 04 | | | Design Near Hall - Beamline Control | 12-Jan-07 | 3-Jul-07 | | C | SL_EE | Hrs | 80 | | 9,494 | | 9,494 |
| 1 | 06 | 02 | 04 | | | Design Near Hall - Beamline Control | 12-Jan-07 | 3-Jul-07 | | C | SL_CP | Hrs | 160 | | 15,352 | | 15,352 |
| 1 | 06 | 02 | 04 | | | Design Near Hall - Beamline Control | 12-Jan-07 | 3-Jul-07 | | C | SL_CE | Hrs | 160 | | 18,987 | | 18,987 |
| 1 | 06 | 02 | 04 | | | Design Far Hall - Beamline Control | 12-Jan-07 | 3-Jul-07 | | C | SL_PHS | Hrs | 80 | | 6,144 | | 6,144 |
| 1 | 06 | 02 | 04 | | | Design Far Hall - Beamline Control | 12-Jan-07 | 3-Jul-07 | | C | SL_EE | Hrs | 120 | | 14,240 | | 14,240 |
| 1 | 06 | 02 | 04 | | | Design Far Hall - Beamline Control | 12-Jan-07 | 3-Jul-07 | | C | SL_CP | Hrs | 120 | | 11,514 | | 11,514 |
| 1 | 06 | 02 | 04 | | | Design Far Hall - Beamline Control | 12-Jan-07 | 3-Jul-07 | | C | SL_CE | Hrs | 80 | | 9,494 | | 9,494 |
| 1 | 06 | 02 | 04 | | | Prep Bid Pkg Rotate/Transl Stage- Beamline Cntrl | 5-Jul-07 | 1-Aug-07 | | C | SL_PHS | Hrs | 40 | | 3,072 | | 3,072 |
| 1 | 06 | 02 | 04 | | | Prepare Bid Pkg MC Software - Beamline Control | 5-Jul-07 | 1-Aug-07 | | C | SL_PHS | Hrs | 40 | | 3,072 | | 3,072 |
| 1 | 06 | 02 | 04 | | | Prepare Bid Pkg MC Software - Beamline Control | 5-Jul-07 | 1-Aug-07 | | C | SL_CP | Hrs | 40 | | 3,838 | | 3,838 |
| 1 | 06 | 02 | 04 | | | Prep Bid Pkg MC Electronics - Beamline Control | 5-Jul-07 | 1-Aug-07 | | C | SL_PHS | Hrs | 40 | | 3,072 | | 3,072 |
| 1 | 06 | 02 | 04 | | | Prep Bid Pkg MC Electronics - Beamline Control | 5-Jul-07 | 1-Aug-07 | | C | SL_EE | Hrs | 40 | | 4,747 | | 4,747 |
| 1 | 06 | 02 | 04 | | | Vendor Fab/Ship Rotate/Transl Stage - Beam Cntl | 20-Sep-07 | 14-Dec-07 | | C | SA_MSEQ | $$ | | 400,000 | | 470,600 | 470,600 |
| 1 | 06 | 02 | 04 | | | Vendor Fab/Ship MC Software - Beamline Control | 20-Sep-07 | 14-Dec-07 | | C | SA_MSEQ | $$ | | 20,000 | | 23,530 | 23,530 |
| 1 | 06 | 02 | 04 | | | Vendor Fab/Ship MC Electronics - Beamline Cntrl | 20-Sep-07 | 14-Dec-07 | | C | SA_MSEQ | $$ | | 300,000 | | 352,950 | 352,950 |
| 1 | 06 | 02 | 04 | | | Programming Near Hall - Beamline Control | 22-Jan-07 | 14-May-07 | | C | SL_CP | Hrs | 480 | | 46,056 | | 46,056 |
| 1 | 06 | 02 | 04 | | | Specification High Perf Data Storage - Beam Cntl | 10-Jul-06 | 11-Jan-07 | | C | SL_PHS | Hrs | 16 | | 1,213 | | 1,213 |
| 1 | 06 | 02 | 04 | | | Specification High Perf Data Storage - Beam Cntl | 10-Jul-06 | 11-Jan-07 | | C | SL_EE | Hrs | 16 | | 1,875 | | 1,875 |
| 1 | 06 | 02 | 04 | | | Specification High Perf Data Storage - Beam Cntl | 10-Jul-06 | 11-Jan-07 | | C | SL_CP | Hrs | 16 | | 1,516 | | 1,516 |
| 1 | 06 | 02 | 04 | | | Specification High Perf Data Storage - Beam Cntl | 10-Jul-06 | 11-Jan-07 | | C | SL_CE | Hrs | 40 | | 4,688 | | 4,688 |
| 1 | 06 | 02 | 04 | | | Prepare Bid Pkg Data Storage - Beamline Control | 5-Jul-07 | 1-Aug-07 | | C | SL_CE | Hrs | 40 | | 4,747 | | 4,747 |
| 1 | 06 | 02 | 04 | | | Vendor Fab/Ship Data Storage - Beamline Ctrl | 20-Sep-07 | 14-Nov-07 | | C | SA_MSXX | $$ | | 100,000 | | 110,650 | 110,650 |
| 1 | 06 | 02 | 04 | | | Vendor Fab/Ship Data Storage - Beamline Ctrl | 20-Sep-07 | 14-Nov-07 | | C | SA_MSEQ | $$ | | 500,000 | | 587,375 | 587,375 |
| 1 | 06 | 02 | 04 | | | Vendor Ship Computers | 20-Sep-07 | 14-Nov-07 | | C | SA_MSEQ | $$ | | 179,000 | | 210,280 | 210,280 |
| **1** | **06** | **02** | **05** | | | **X-Ray PPS** | | | | | | | **6,244** | **730,000** | **628,376** | **839,500** | **1,467,876** |
| **1** | **06** | **02** | **05** | **01** | | **FEE X-Ray PPS** | | | | | | | **1,840** | **100,000** | **186,141** | **115,000** | **301,141** |
| 1 | 06 | 02 | 05 | 01 | | Prepare Bid Pkg FEE Alarms/Signs - PPS | 2-Oct-06 | 13-Oct-06 | | C | SL_CE | Hrs | 40 | | 4,747 | | 4,747 |
| 1 | 06 | 02 | 05 | 01 | | Vendor Fab/Ship FEE Alarms/Signs - PPS | 14-Dec-06 | 26-Feb-07 | | C | SA_MSEQ | $$ | | 20,000 | | 23,000 | 23,000 |
| 1 | 06 | 02 | 05 | 01 | | Prep Bid Pkg FEE Beam Stop Hardware - X-Ray PPS | 2-Oct-06 | 13-Oct-06 | | C | SL_ME | Hrs | 80 | | 8,919 | | 8,919 |
| 1 | 06 | 02 | 05 | 01 | | Prep Bid Pkg NH Beam Stop Hardware - X-Ray PPS | 2-Oct-06 | 13-Oct-06 | | C | SL_ME | Hrs | 80 | | 8,919 | | 8,919 |
| 1 | 06 | 02 | 05 | 01 | | Prepare Bid Pkg FEE Containment/Interlock - PPS | 2-Oct-06 | 13-Oct-06 | | C | SL_CE | Hrs | 40 | | 4,747 | | 4,747 |
| 1 | 06 | 02 | 05 | 01 | | Bid Process NH Beam Stop Hardware - X-Ray PPS | 16-Oct-06 | 12-Dec-06 | | C | SL_ME | Hrs | 80 | | 8,919 | | 8,919 |
| 1 | 06 | 02 | 05 | 01 | | Assemble FEE Beam Stop Hardware - X-Ray PPS | 27-Feb-07 | 23-Apr-07 | | C | SL_MFMS | Hrs | 80 | | 8,470 | | 8,470 |
| 1 | 06 | 02 | 05 | 01 | | Assemble FEE Beam Stop Hardware - X-Ray PPS | 27-Feb-07 | 23-Apr-07 | | C | SL_MFAT | Hrs | 320 | | 27,632 | | 27,632 |
| 1 | 06 | 02 | 05 | 01 | | Assemble FEE Beam Stop Hardware - X-Ray PPS | 27-Feb-07 | 23-Apr-07 | | C | SL_ME | Hrs | 320 | | 35,677 | | 35,677 |
| 1 | 06 | 02 | 05 | 01 | | Vendor Fab/Ship FEE Containment/Interlock - PPS | 14-Dec-06 | 26-Feb-07 | | C | SA_MSEQ | $$ | | 10,000 | | 11,500 | 11,500 |
| 1 | 06 | 02 | 05 | 01 | | Bid Process FEE Beam Stop Hardware - X-Ray PPS | 16-Oct-06 | 12-Dec-06 | | C | SL_ME | Hrs | 80 | | 8,919 | | 8,919 |
| 1 | 06 | 02 | 05 | 01 | | Vendor Fab/Ship FEE Beam Stop Hardware-X-Ray PPS | 14-Dec-06 | 26-Feb-07 | | C | SA_MSEQ | $$ | | 60,000 | | 69,000 | 69,000 |
| 1 | 06 | 02 | 05 | 01 | | Design FEE - PPS | 27-Mar-06 | 19-May-06 | | C | SL_PHS | Hrs | 40 | | 2,994 | | 2,994 |
| 1 | 06 | 02 | 05 | 01 | | Design FEE - PPS | 27-Mar-06 | 19-May-06 | | C | SL_ME | Hrs | 160 | | 17,387 | | 17,387 |
| 1 | 06 | 02 | 05 | 01 | | Design FEE - PPS | 27-Mar-06 | 19-May-06 | | C | SL_MDD | Hrs | 160 | | 10,318 | | 10,318 |
| 1 | 06 | 02 | 05 | 01 | | Design FEE - PPS | 27-Mar-06 | 19-May-06 | | C | SL_CE | Hrs | 160 | | 18,506 | | 18,506 |
| 1 | 06 | 02 | 05 | 01 | | Specification FEE - X-Ray PPS | 27-Feb-06 | 24-Mar-06 | | C | SL_PHS | Hrs | 40 | | 2,994 | | 2,994 |
| 1 | 06 | 02 | 05 | 01 | | Specification FEE - X-Ray PPS | 27-Feb-06 | 24-Mar-06 | | C | SL_CE | Hrs | 40 | | 4,626 | | 4,626 |
| 1 | 06 | 02 | 05 | 01 | | Safety Review FEE - PPS | 22-May-06 | 18-Jul-06 | | C | SL_PHS | Hrs | 40 | | 2,994 | | 2,994 |
| 1 | 06 | 02 | 05 | 01 | | Safety Review FEE - PPS | 22-May-06 | 18-Jul-06 | | C | SL_CE | Hrs | 40 | | 4,626 | | 4,626 |
| 1 | 06 | 02 | 05 | 01 | | Prepare Bid Pkg FEE Detectors - PPS | 2-Oct-06 | 13-Oct-06 | | C | SL_CE | Hrs | 40 | | 4,747 | | 4,747 |
| 1 | 06 | 02 | 05 | 01 | | Vendor Fab/Ship FEE Detectors - PPS | 14-Dec-06 | 26-Feb-07 | | C | SA_MSEQ | $$ | | 10,000 | | 11,500 | 11,500 |

| WBS Level | | | | | | LCLA DCE March-2005 | Early | Early | OBS | Fund | Res | Units | Budgeted Quantity | | Fully Burdened and Escalated Cost | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Run Time: 4/2205 8:43am | | | | | | Description | Start | Finish | | Type | Code | | Hours | $$ | Labor | M&S | Total (No Conting) |
| 1 | 2 | 3 | 4 | 5 | 6 | | | | | | | | | | | | |
| **1** | **06** | **02** | **05** | **02** | | **Near Hall X-Ray PPS** | | | | | | | **1,520** | **280,000** | **150,465** | **322,000** | **472,465** |
| 1 | 06 | 02 | 05 | 02 | | Vendor Fab/Ship NH Beam Stop Hardware-X-Ray PPS | 14-Dec-06 | 26-Feb-07 | | C | SA_MSEQ | $$ | | 180,000 | | 207,000 | 207,000 |
| 1 | 06 | 02 | 05 | 02 | | Assemble NH Beam Stop Hardware - X-Ray PPS | 27-Feb-07 | 23-Apr-07 | | C | SL_MFMS | Hrs | 80 | | 8,470 | | 8,470 |
| 1 | 06 | 02 | 05 | 02 | | Assemble NH Beam Stop Hardware - X-Ray PPS | 27-Feb-07 | 23-Apr-07 | | C | SL_MFAT | Hrs | 320 | | 27,632 | | 27,632 |
| 1 | 06 | 02 | 05 | 02 | | Assemble NH Beam Stop Hardware - X-Ray PPS | 27-Feb-07 | 23-Apr-07 | | C | SL_ME | Hrs | 320 | | 35,677 | | 35,677 |
| 1 | 06 | 02 | 05 | 02 | | Specification Near Hall - X-Ray PPS | 27-Feb-06 | 24-Mar-06 | | C | SL_PHS | Hrs | 40 | | 2,994 | | 2,994 |
| 1 | 06 | 02 | 05 | 02 | | Specification Near Hall - X-Ray PPS | 27-Feb-06 | 24-Mar-06 | | C | SL_CE | Hrs | 40 | | 4,626 | | 4,626 |
| 1 | 06 | 02 | 05 | 02 | | Design Near Hall - X-Ray PPS | 27-Mar-06 | 19-May-06 | | C | SL_PHS | Hrs | 40 | | 2,994 | | 2,994 |
| 1 | 06 | 02 | 05 | 02 | | Design Near Hall - X-Ray PPS | 27-Mar-06 | 19-May-06 | | C | SL_ME | Hrs | 160 | | 17,387 | | 17,387 |
| 1 | 06 | 02 | 05 | 02 | | Design Near Hall - X-Ray PPS | 27-Mar-06 | 19-May-06 | | C | SL_MDD | Hrs | 160 | | 10,318 | | 10,318 |
| 1 | 06 | 02 | 05 | 02 | | Design Near Hall - X-Ray PPS | 27-Mar-06 | 19-May-06 | | C | SL_CE | Hrs | 160 | | 18,506 | | 18,506 |
| 1 | 06 | 02 | 05 | 02 | | Prepare Bid Pkg Near Hall Alarms/Signs-X-RayPPS | 2-Oct-06 | 13-Oct-06 | | C | SL_CE | Hrs | 40 | | 4,747 | | 4,747 |
| 1 | 06 | 02 | 05 | 02 | | Prep Bid Pkg NHall Contain/Interlock - X-Ray PPS | 2-Oct-06 | 13-Oct-06 | | C | SL_CE | Hrs | 40 | | 4,747 | | 4,747 |
| 1 | 06 | 02 | 05 | 02 | | Prepare Near Hall Bid Pkg Detectors - X-Ray PPS | 2-Oct-06 | 13-Oct-06 | | C | SL_CE | Hrs | 40 | | 4,747 | | 4,747 |
| 1 | 06 | 02 | 05 | 02 | | Vendor Fab/Ship Near Hall Alarms/Signs-X-Ray PPS | 14-Dec-06 | 26-Feb-07 | | C | SA_MSEQ | $$ | | 60,000 | | 69,000 | 69,000 |
| 1 | 06 | 02 | 05 | 02 | | Vendor Fab/Ship NHall Contain/Interlock-X-RayPPS | 14-Dec-06 | 26-Feb-07 | | C | SA_MSEQ | $$ | | 30,000 | | 34,500 | 34,500 |
| 1 | 06 | 02 | 05 | 02 | | Vendor Fab/Ship Near Hall Detectors -X-Ray PPS | 14-Dec-06 | 26-Feb-07 | | C | SA_MSEQ | $$ | | 10,000 | | 11,500 | 11,500 |
| 1 | 06 | 02 | 05 | 02 | | Safety Review Near Hall - X-Ray PPS | 22-May-06 | 18-Jul-06 | | C | SL_PHS | Hrs | 40 | | 2,994 | | 2,994 |
| 1 | 06 | 02 | 05 | 02 | | Safety Review Near Hall - X-Ray PPS | 22-May-06 | 18-Jul-06 | | C | SL_CE | Hrs | 40 | | 4,626 | | 4,626 |
| **1** | **06** | **02** | **05** | **03** | | **Tunnel X-Ray PPS** | | | | | | | **1,702** | **220,000** | **170,756** | **253,000** | **423,756** |
| 1 | 06 | 02 | 05 | 03 | | Procure Beam Stop Hardware | 27-Feb-07 | 5-Jul-07 | | C | SL_ME | Hrs | 182 | | 20,291 | | 20,291 |
| 1 | 06 | 02 | 05 | 03 | | Vendor Fab Beam Stop Hardware | 2-Oct-06 | 26-Feb-07 | | C | SL_MSEQ | $$ | | 180,000 | | 207,000 | 207,000 |
| 1 | 06 | 02 | 05 | 03 | | Assemble Beam Stop Hardware | 6-Jul-07 | 30-Aug-07 | | C | SL_MFMS | Hrs | 80 | | 8,470 | | 8,470 |
| 1 | 06 | 02 | 05 | 03 | | Assemble Beam Stop Hardware | 6-Jul-07 | 30-Aug-07 | | C | SL_MFAT | Hrs | 320 | | 27,632 | | 27,632 |
| 1 | 06 | 02 | 05 | 03 | | Assemble Beam Stop Hardware | 6-Jul-07 | 30-Aug-07 | | C | SL_ME | Hrs | 320 | | 35,677 | | 35,677 |
| 1 | 06 | 02 | 05 | 03 | | Specification Tunnel - X-Ray PPS | 27-Feb-06 | 24-Mar-06 | | C | SL_PHS | Hrs | 40 | | 2,994 | | 2,994 |
| 1 | 06 | 02 | 05 | 03 | | Specification Tunnel - X-Ray PPS | 27-Feb-06 | 24-Mar-06 | | C | SL_CE | Hrs | 40 | | 4,626 | | 4,626 |
| 1 | 06 | 02 | 05 | 03 | | Design Tunnel - X-Ray PPS | 27-Mar-06 | 19-May-06 | | C | SL_PHS | Hrs | 40 | | 2,994 | | 2,994 |
| 1 | 06 | 02 | 05 | 03 | | Design Tunnel - X-Ray PPS | 27-Mar-06 | 19-May-06 | | C | SL_ME | Hrs | 160 | | 17,387 | | 17,387 |
| 1 | 06 | 02 | 05 | 03 | | Design Tunnel - X-Ray PPS | 27-Mar-06 | 19-May-06 | | C | SL_MDD | Hrs | 160 | | 10,318 | | 10,318 |
| 1 | 06 | 02 | 05 | 03 | | Design Tunnel - X-Ray PPS | 27-Mar-06 | 19-May-06 | | C | SL_CE | Hrs | 160 | | 18,506 | | 18,506 |
| 1 | 06 | 02 | 05 | 03 | | Prepare Bid Pkg Tunnel Alarms/Signs - X-Ray PPS | 2-Oct-06 | 13-Oct-06 | | C | SL_CE | Hrs | 40 | | 4,747 | | 4,747 |
| 1 | 06 | 02 | 05 | 03 | | Prep Bid Pkg Tunnel Containmt/Interlock-X-RayPPS | 2-Oct-06 | 13-Oct-06 | | C | SL_CE | Hrs | 40 | | 4,747 | | 4,747 |
| 1 | 06 | 02 | 05 | 03 | | Prepare Bid Pkg Tunnel Detectors - X-Ray PPS | 2-Oct-06 | 13-Oct-06 | | C | SL_CE | Hrs | 40 | | 4,747 | | 4,747 |
| 1 | 06 | 02 | 05 | 03 | | Vendor Fab/Ship Tunnel Alarms/Signs - X-Ray PPS | 14-Dec-06 | 26-Feb-07 | | C | SA_MSEQ | $$ | | 20,000 | | 23,000 | 23,000 |
| 1 | 06 | 02 | 05 | 03 | | Vendor Ship Tunnel Contain/Interlock-X-RayPPS | 14-Dec-06 | 26-Feb-07 | | C | SA_MSEQ | $$ | | 10,000 | | 11,500 | 11,500 |
| 1 | 06 | 02 | 05 | 03 | | Vendor Fab/Ship Tunnel Detectors - X-Ray PPS | 14-Dec-06 | 26-Feb-07 | | C | SA_MSEQ | $$ | | 10,000 | | 11,500 | 11,500 |
| 1 | 06 | 02 | 05 | 03 | | Safety Review Tunnel - X-Ray PPS | 22-May-06 | 18-Jul-06 | | C | SL_PHS | Hrs | 40 | | 2,994 | | 2,994 |
| 1 | 06 | 02 | 05 | 03 | | Safety Review Tunnel - X-Ray PPS | 22-May-06 | 18-Jul-06 | | C | SL_CE | Hrs | 40 | | 4,626 | | 4,626 |
| **1** | **06** | **02** | **05** | **04** | | **Far Hall X-Ray PPS** | | | | | | | **1,182** | **130,000** | **121,014** | **149,500** | **270,514** |
| 1 | 06 | 02 | 05 | 04 | | Specification Far Hall - PPS | 27-Feb-06 | 24-Mar-06 | | C | SL_PHS | Hrs | 40 | | 2,994 | | 2,994 |
| 1 | 06 | 02 | 05 | 04 | | Specification Far Hall - PPS | 27-Feb-06 | 24-Mar-06 | | C | SL_CE | Hrs | 40 | | 4,626 | | 4,626 |
| 1 | 06 | 02 | 05 | 04 | | Design Far Hall - PPS | 27-Mar-06 | 19-May-06 | | C | SL_PHS | Hrs | 40 | | 2,994 | | 2,994 |
| 1 | 06 | 02 | 05 | 04 | | Design Far Hall - PPS | 27-Mar-06 | 19-May-06 | | C | SL_ME | Hrs | 80 | | 8,694 | | 8,694 |
| 1 | 06 | 02 | 05 | 04 | | Design Far Hall - PPS | 27-Mar-06 | 19-May-06 | | C | SL_MDD | Hrs | 80 | | 5,159 | | 5,159 |
| 1 | 06 | 02 | 05 | 04 | | Design Far Hall - PPS | 27-Mar-06 | 19-May-06 | | C | SL_CE | Hrs | 160 | | 18,506 | | 18,506 |
| 1 | 06 | 02 | 05 | 04 | | Prepare Bid Pkg Far Hall Alarms/Signs - PPS | 2-Oct-06 | 13-Oct-06 | | C | SL_CE | Hrs | 40 | | 4,747 | | 4,747 |
| 1 | 06 | 02 | 05 | 04 | | Prep Bid Pkg Far Hall Contain/Interlock - PPS | 2-Oct-06 | 13-Oct-06 | | C | SL_CE | Hrs | 40 | | 4,747 | | 4,747 |
| 1 | 06 | 02 | 05 | 04 | | Prepare Far Hall Bid Pkg Detectors - PPS | 2-Oct-06 | 13-Oct-06 | | C | SL_CE | Hrs | 40 | | 4,747 | | 4,747 |
| 1 | 06 | 02 | 05 | 04 | | Vendor Fab/Ship Far Hall Alarms/Signs - PPS | 14-Dec-06 | 26-Feb-07 | | C | SA_MSEQ | $$ | | 60,000 | | 69,000 | 69,000 |
| 1 | 06 | 02 | 05 | 04 | | Vendor Fab/Ship Far Hall Contain/Interlock- PPS | 14-Dec-06 | 26-Feb-07 | | C | SA_MSEQ | $$ | | 30,000 | | 34,500 | 34,500 |
| 1 | 06 | 02 | 05 | 04 | | Vendor Fab/Ship Far Hall Detectors - PPS | 14-Dec-06 | 26-Feb-07 | | C | SA_MSEQ | $$ | | 10,000 | | 11,500 | 11,500 |
| 1 | 06 | 02 | 05 | 04 | | Procure Beam Stop Hardware | 2-Oct-06 | 26-Feb-07 | | C | SL_ME | Hrs | 182 | | 20,291 | | 20,291 |
| 1 | 06 | 02 | 05 | 04 | | Procure Beam Stop Hardware | 27-Feb-07 | 5-Jul-07 | | C | SL_MSEQ | $$ | | 30,000 | | 34,500 | 34,500 |
| 1 | 06 | 02 | 05 | 04 | | Assemble Beam Stop Hardware | 6-Jul-07 | 2-Aug-07 | | C | SL_MFMS | Hrs | 40 | | 4,235 | | 4,235 |
| 1 | 06 | 02 | 05 | 04 | | Assemble Beam Stop Hardware | 6-Jul-07 | 2-Aug-07 | | C | SL_MFAT | Hrs | 160 | | 13,816 | | 13,816 |
| 1 | 06 | 02 | 05 | 04 | | Assemble Beam Stop Hardware | 6-Jul-07 | 2-Aug-07 | | C | SL_ME | Hrs | 160 | | 17,838 | | 17,838 |
| 1 | 06 | 02 | 05 | 04 | | Safety Review Far Hall - PPS | 22-May-06 | 18-Jul-06 | | C | SL_PHS | Hrs | 40 | | 2,994 | | 2,994 |
| 1 | 06 | 02 | 05 | 04 | | Safety Review Far Hall - PPS | 22-May-06 | 18-Jul-06 | | C | SL_CE | Hrs | 40 | | 4,626 | | 4,626 |
| **1** | **06** | **02** | **06** | | | **X-Ray MPS** | | | | | | | **2,240** | **140,000** | **221,961** | **161,000** | **382,961** |
| **1** | **06** | **02** | **06** | **01** | | **FEE X-Ray MPS** | | | | | | | **560** | **35,000** | **55,218** | **40,250** | **95,468** |
| 1 | 06 | 02 | 06 | 01 | | Prepare Bid Pkg FEE Sensors - MPS | 19-Jul-06 | 1-Aug-06 | | C | SL_CE | Hrs | 40 | | 4,626 | | 4,626 |
| 1 | 06 | 02 | 06 | 01 | | Vendor Fab/Ship FEE Sensors - MPS | 3-Oct-06 | 29-Nov-06 | | C | SA_MSEQ | $$ | | 10,000 | | 11,500 | 11,500 |
| 1 | 06 | 02 | 06 | 01 | | Prepare Bid Pkg FEE Interlocks - MPS | 19-Jul-06 | 1-Aug-06 | | C | SL_CE | Hrs | 40 | | 4,626 | | 4,626 |

| WBS Level | | | | | | LCLA DCE March-2005 | Early | Early | OBS | Fund | Res | Units | Budgeted Quantity | | Fully Burdened and Escalated Cost | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Run Time: 4/2205 8:43am | | | | | | Description | Start | Finish | | Type | Code | | Hours | $$ | Labor | M&S | Total (No Conting) |
| 1 | 2 | 3 | 4 | 5 | 6 | | | | | | | | | | | | |
| 1 | 06 | 02 | 06 | 01 | | Vendor Fab/Ship FEE Interlocks - MPS | 3-Oct-06 | 29-Nov-06 | | C | SA_MSEQ | $$ | | 5,000 | | 5,750 | 5,750 |
| 1 | 06 | 02 | 06 | 01 | | Design FEE - MPS | 27-Mar-06 | 19-May-06 | | C | SL_PHS | Hrs | 40 | | 2,994 | | 2,994 |
| 1 | 06 | 02 | 06 | 01 | | Design FEE - MPS | 27-Mar-06 | 19-May-06 | | C | SL_ME | Hrs | 80 | | 8,694 | | 8,694 |
| 1 | 06 | 02 | 06 | 01 | | Design FEE - MPS | 27-Mar-06 | 19-May-06 | | C | SL_MDD | Hrs | 80 | | 5,159 | | 5,159 |
| 1 | 06 | 02 | 06 | 01 | | Design FEE - MPS | 27-Mar-06 | 19-May-06 | | C | SL_CE | Hrs | 80 | | 9,253 | | 9,253 |
| 1 | 06 | 02 | 06 | 01 | | Specification FEE - MPS | 27-Feb-06 | 24-Mar-06 | | C | SL_PHS | Hrs | 40 | | 2,994 | | 2,994 |
| 1 | 06 | 02 | 06 | 01 | | Specification FEE - MPS | 27-Feb-06 | 24-Mar-06 | | C | SL_CE | Hrs | 40 | | 4,626 | | 4,626 |
| 1 | 06 | 02 | 06 | 01 | | Prepare Bid Pkg FEE Valves - MPS | 19-Jul-06 | 1-Aug-06 | | C | SL_CE | Hrs | 40 | | 4,626 | | 4,626 |
| 1 | 06 | 02 | 06 | 01 | | Vendor Fab/Ship FEE Valves - MPS | 3-Oct-06 | 29-Nov-06 | | C | SA_MSEQ | $$ | | 20,000 | | 23,000 | 23,000 |
| 1 | 06 | 02 | 06 | 01 | | Safety Review - MPS | 22-May-06 | 18-Jul-06 | | C | SL_PHS | Hrs | 40 | | 2,994 | | 2,994 |
| 1 | 06 | 02 | 06 | 01 | | Safety Review - MPS | 22-May-06 | 18-Jul-06 | | C | SL_CE | Hrs | 40 | | 4,626 | | 4,626 |
| **1** | **06** | **02** | **06** | **02** | | **Near Hall X-Ray MPS** | | | | | | | **560** | **35,000** | **55,581** | **40,250** | **95,831** |
| 1 | 06 | 02 | 06 | 02 | | Specification Near Hall - MPS | 27-Feb-06 | 24-Mar-06 | | C | SL_PHS | Hrs | 40 | | 2,994 | | 2,994 |
| 1 | 06 | 02 | 06 | 02 | | Specification Near Hall - MPS | 27-Feb-06 | 24-Mar-06 | | C | SL_CE | Hrs | 40 | | 4,626 | | 4,626 |
| 1 | 06 | 02 | 06 | 02 | | Design Near Hall - MPS | 27-Mar-06 | 19-May-06 | | C | SL_PHS | Hrs | 40 | | 2,994 | | 2,994 |
| 1 | 06 | 02 | 06 | 02 | | Design Near Hall - MPS | 27-Mar-06 | 19-May-06 | | C | SL_ME | Hrs | 80 | | 8,694 | | 8,694 |
| 1 | 06 | 02 | 06 | 02 | | Design Near Hall - MPS | 27-Mar-06 | 19-May-06 | | C | SL_MDD | Hrs | 80 | | 5,159 | | 5,159 |
| 1 | 06 | 02 | 06 | 02 | | Design Near Hall - MPS | 27-Mar-06 | 19-May-06 | | C | SL_CE | Hrs | 80 | | 9,253 | | 9,253 |
| 1 | 06 | 02 | 06 | 02 | | Prepare Bid Pkg Near Hall Sensors - MPS | 2-Oct-06 | 13-Oct-06 | | C | SL_CE | Hrs | 40 | | 4,747 | | 4,747 |
| 1 | 06 | 02 | 06 | 02 | | Prep Bid Pkg Near Hall Interlocks - MPS | 2-Oct-06 | 13-Oct-06 | | C | SL_CE | Hrs | 40 | | 4,747 | | 4,747 |
| 1 | 06 | 02 | 06 | 02 | | Prepare Near Hall Bid Pkg Valves - MPS | 2-Oct-06 | 13-Oct-06 | | C | SL_CE | Hrs | 40 | | 4,747 | | 4,747 |
| 1 | 06 | 02 | 06 | 02 | | Vendor Fab/Ship Near Hall Sensors - MPS | 14-Dec-06 | 26-Feb-07 | | C | SA_MSEQ | $$ | | 10,000 | | 11,500 | 11,500 |
| 1 | 06 | 02 | 06 | 02 | | Vendor Fab/Ship Near Hall Interlocks- MPS | 14-Dec-06 | 26-Feb-07 | | C | SA_MSEQ | $$ | | 5,000 | | 5,750 | 5,750 |
| 1 | 06 | 02 | 06 | 02 | | Vendor Fab/Ship Near Hall Valves - MPS | 14-Dec-06 | 26-Feb-07 | | C | SA_MSEQ | $$ | | 20,000 | | 23,000 | 23,000 |
| 1 | 06 | 02 | 06 | 02 | | Safety Review - MPS | 22-May-06 | 18-Jul-06 | | C | SL_PHS | Hrs | 40 | | 2,994 | | 2,994 |
| 1 | 06 | 02 | 06 | 02 | | Safety Review - MPS | 22-May-06 | 18-Jul-06 | | C | SL_CE | Hrs | 40 | | 4,626 | | 4,626 |
| **1** | **06** | **02** | **06** | **03** | | **Tunnel X-Ray MPS** | | | | | | | **560** | **35,000** | **55,581** | **40,250** | **95,831** |
| 1 | 06 | 02 | 06 | 03 | | Specification Tunnel - MPS | 27-Feb-06 | 24-Mar-06 | | C | SL_PHS | Hrs | 40 | | 2,994 | | 2,994 |
| 1 | 06 | 02 | 06 | 03 | | Specification Tunnel - MPS | 27-Feb-06 | 24-Mar-06 | | C | SL_CE | Hrs | 40 | | 4,626 | | 4,626 |
| 1 | 06 | 02 | 06 | 03 | | Design Tunnel - MPS | 27-Mar-06 | 19-May-06 | | C | SL_PHS | Hrs | 40 | | 2,994 | | 2,994 |
| 1 | 06 | 02 | 06 | 03 | | Design Tunnel - MPS | 27-Mar-06 | 19-May-06 | | C | SL_ME | Hrs | 80 | | 8,694 | | 8,694 |
| 1 | 06 | 02 | 06 | 03 | | Design Tunnel - MPS | 27-Mar-06 | 19-May-06 | | C | SL_MDD | Hrs | 80 | | 5,159 | | 5,159 |
| 1 | 06 | 02 | 06 | 03 | | Design Tunnel - MPS | 27-Mar-06 | 19-May-06 | | C | SL_CE | Hrs | 80 | | 9,253 | | 9,253 |
| 1 | 06 | 02 | 06 | 03 | | Prepare Bid Pkg Tunnel Sensors - MPS | 2-Oct-06 | 13-Oct-06 | | C | SL_CE | Hrs | 40 | | 4,747 | | 4,747 |
| 1 | 06 | 02 | 06 | 03 | | Prep Bid Pkg Tunnel Interlocks - MPS | 2-Oct-06 | 13-Oct-06 | | C | SL_CE | Hrs | 40 | | 4,747 | | 4,747 |
| 1 | 06 | 02 | 06 | 03 | | Prepare Bid Pkg Tunnel Valves - MPS | 2-Oct-06 | 13-Oct-06 | | C | SL_CE | Hrs | 40 | | 4,747 | | 4,747 |
| 1 | 06 | 02 | 06 | 03 | | Vendor Fab/Ship Tunnel Sensors - MPS | 14-Dec-06 | 26-Feb-07 | | C | SA_MSEQ | $$ | | 10,000 | | 11,500 | 11,500 |
| 1 | 06 | 02 | 06 | 03 | | Vendor Fab/Ship Tunnel Interlocks - MPS | 14-Dec-06 | 26-Feb-07 | | C | SA_MSEQ | $$ | | 5,000 | | 5,750 | 5,750 |
| 1 | 06 | 02 | 06 | 03 | | Vendor Fab/Ship Tunnel Valves - MPS | 14-Dec-06 | 26-Feb-07 | | C | SA_MSEQ | $$ | | 20,000 | | 23,000 | 23,000 |
| 1 | 06 | 02 | 06 | 03 | | Safety Review - MPS | 22-May-06 | 18-Jul-06 | | C | SL_PHS | Hrs | 40 | | 2,994 | | 2,994 |
| 1 | 06 | 02 | 06 | 03 | | Safety Review - MPS | 22-May-06 | 18-Jul-06 | | C | SL_CE | Hrs | 40 | | 4,626 | | 4,626 |
| **1** | **06** | **02** | **06** | **04** | | **Far Hall X-Ray MPS** | | | | | | | **560** | **35,000** | **55,581** | **40,250** | **95,831** |
| 1 | 06 | 02 | 06 | 04 | | Specification Far Hall - MPS | 27-Feb-06 | 24-Mar-06 | | C | SL_PHS | Hrs | 40 | | 2,994 | | 2,994 |
| 1 | 06 | 02 | 06 | 04 | | Specification Far Hall - MPS | 27-Feb-06 | 24-Mar-06 | | C | SL_CE | Hrs | 40 | | 4,626 | | 4,626 |
| 1 | 06 | 02 | 06 | 04 | | Design Far Hall - MPS | 27-Mar-06 | 19-May-06 | | C | SL_PHS | Hrs | 40 | | 2,994 | | 2,994 |
| 1 | 06 | 02 | 06 | 04 | | Design Far Hall - MPS | 27-Mar-06 | 19-May-06 | | C | SL_ME | Hrs | 80 | | 8,694 | | 8,694 |
| 1 | 06 | 02 | 06 | 04 | | Design Far Hall - MPS | 27-Mar-06 | 19-May-06 | | C | SL_MDD | Hrs | 80 | | 5,159 | | 5,159 |
| 1 | 06 | 02 | 06 | 04 | | Design Far Hall - MPS | 27-Mar-06 | 19-May-06 | | C | SL_CE | Hrs | 80 | | 9,253 | | 9,253 |
| 1 | 06 | 02 | 06 | 04 | | Prepare Bid Pkg Far Hall Sensors - MPS | 2-Oct-06 | 13-Oct-06 | | C | SL_CE | Hrs | 40 | | 4,747 | | 4,747 |
| 1 | 06 | 02 | 06 | 04 | | Prep Bid Pkg Far Hall Interlocks - MPS | 2-Oct-06 | 13-Oct-06 | | C | SL_CE | Hrs | 40 | | 4,747 | | 4,747 |
| 1 | 06 | 02 | 06 | 04 | | Prepare Far Hall Bid Pkg Valves - MPS | 2-Oct-06 | 13-Oct-06 | | C | SL_CE | Hrs | 40 | | 4,747 | | 4,747 |
| 1 | 06 | 02 | 06 | 04 | | Vendor Fab/Ship Far Hall Sensors - MPS | 14-Dec-06 | 26-Feb-07 | | C | SA_MSEQ | $$ | | 10,000 | | 11,500 | 11,500 |
| 1 | 06 | 02 | 06 | 04 | | Vendor Fab/Ship Far Hall Interlocks- MPS | 14-Dec-06 | 26-Feb-07 | | C | SA_MSEQ | $$ | | 5,000 | | 5,750 | 5,750 |
| 1 | 06 | 02 | 06 | 04 | | Vendor Fab/Ship Far Hall Valves - MPS | 14-Dec-06 | 26-Feb-07 | | C | SA_MSEQ | $$ | | 20,000 | | 23,000 | 23,000 |
| 1 | 06 | 02 | 06 | 04 | | Safety Review - MPS | 22-May-06 | 18-Jul-06 | | C | SL_PHS | Hrs | 40 | | 2,994 | | 2,994 |
| 1 | 06 | 02 | 06 | 04 | | Safety Review - MPS | 22-May-06 | 18-Jul-06 | | C | SL_CE | Hrs | 40 | | 4,626 | | 4,626 |
| **1** | **06** | **02** | **07** | | | **Laser PPS** | | | | | | | **920** | **35,000** | **91,321** | **40,250** | **131,571** |
| **1** | **06** | **02** | **07** | **01** | | **Near Hall Laser PPS** | | | | | | | **440** | **15,000** | **43,287** | **17,250** | **60,537** |
| 1 | 06 | 02 | 07 | 01 | | Specification - Near Hall - Laser PPS | 19-Jul-06 | 15-Aug-06 | | C | SL_PHS | Hrs | 40 | | 2,994 | | 2,994 |
| 1 | 06 | 02 | 07 | 01 | | Design Near Hall - Laser PPS | 16-Aug-06 | 11-Oct-06 | | C | SL_PHS | Hrs | 120 | | 9,029 | | 9,029 |
| 1 | 06 | 02 | 07 | 01 | | Design Near Hall - Laser PPS | 16-Aug-06 | 11-Oct-06 | | C | SL_CE | Hrs | 120 | | 13,951 | | 13,951 |
| 1 | 06 | 02 | 07 | 01 | | Safety Review Near Hall - Laser PPS | 12-Oct-06 | 8-Dec-06 | | C | SL_PHS | Hrs | 40 | | 3,072 | | 3,072 |
| 1 | 06 | 02 | 07 | 01 | | Safety Review Near Hall - Laser PPS | 12-Oct-06 | 8-Dec-06 | | C | SL_CE | Hrs | 40 | | 4,747 | | 4,747 |
| 1 | 06 | 02 | 07 | 01 | | Prep Bid Pkg Near Hall Alarms/Signs - Laser PPS | 11-Dec-06 | 8-Jan-07 | | C | SL_CE | Hrs | 40 | | 4,747 | | 4,747 |

| WBS Level | | | | | | LCLA DCE March-2005 | Early | Early | OBS | Fund | Res | Units | Budgeted Quantity | | Fully Burdened and Escalated Cost | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Run Time: 4/2205 8:43am | | | | | | Description | Start | Finish | | Type | Code | | Hours | $$ | Labor | M&S | Total (No Conting) |
| 1 | 2 | 3 | 4 | 5 | 6 | | | | | | | | | | | | |
| 1 | 06 | 02 | 07 | 01 | | Prep Bid Pkg NHall Contain/Interlck - Laser PPS | 11-Dec-06 | 8-Jan-07 | | C | SL_CE | Hrs | 40 | | 4,747 | | 4,747 |
| 1 | 06 | 02 | 07 | 01 | | Vendor Fab/Ship Near Hall Alarm/Sign - Laser PPS | 9-Mar-07 | 3-May-07 | | C | SA_MSEQ | $$ | | 10,000 | | 11,500 | 11,500 |
| 1 | 06 | 02 | 07 | 01 | | Vendor Ship Near Hall Contain/Intrlck-Laser PPS | 9-Mar-07 | 3-May-07 | | C | SA_MSEQ | $$ | | 5,000 | | 5,750 | 5,750 |
| **1** | **06** | **02** | **07** | **02** | | **Far Hall Laser PPS** | | | | | | | **480** | **20,000** | **48,034** | **23,000** | **71,034** |
| 1 | 06 | 02 | 07 | 02 | | Specification Far Hall - Laser PPS | 19-Jul-06 | 15-Aug-06 | | C | SL_PHS | Hrs | 40 | | 2,994 | | 2,994 |
| 1 | 06 | 02 | 07 | 02 | | Design Far Hall - Laser PPS | 16-Aug-06 | 11-Oct-06 | | C | SL_PHS | Hrs | 120 | | 9,029 | | 9,029 |
| 1 | 06 | 02 | 07 | 02 | | Design Far Hall - Laser PPS | 16-Aug-06 | 11-Oct-06 | | C | SL_CE | Hrs | 120 | | 13,951 | | 13,951 |
| 1 | 06 | 02 | 07 | 02 | | Safety Review Far Hall - Laser PPS | 12-Oct-06 | 8-Dec-06 | | C | SL_PHS | Hrs | 40 | | 3,072 | | 3,072 |
| 1 | 06 | 02 | 07 | 02 | | Safety Review Far Hall - Laser PPS | 12-Oct-06 | 8-Dec-06 | | C | SL_CE | Hrs | 40 | | 4,747 | | 4,747 |
| 1 | 06 | 02 | 07 | 02 | | Prep Bid Pkg Far Hall Alarms/Signs - Laser PPS | 11-Dec-06 | 8-Jan-07 | | C | SL_CE | Hrs | 40 | | 4,747 | | 4,747 |
| 1 | 06 | 02 | 07 | 02 | | Prep Bid Pkg FHall Contain/Interlck - Laser PPS | 11-Dec-06 | 8-Jan-07 | | C | SL_CE | Hrs | 40 | | 4,747 | | 4,747 |
| 1 | 06 | 02 | 07 | 02 | | Prepare Bid Pkg Far Hall Detectors - Laser PPS | 11-Dec-06 | 8-Jan-07 | | C | SL_CE | Hrs | 40 | | 4,747 | | 4,747 |
| 1 | 06 | 02 | 07 | 02 | | Vendor Fab/Ship Far Hall Alarm/Sign - Laser PPS | 9-Mar-07 | 3-May-07 | | C | SA_MSEQ | $$ | | 10,000 | | 11,500 | 11,500 |
| 1 | 06 | 02 | 07 | 02 | | Vendor Ship Far Hall Contain/Intrlck-Laser PPS | 9-Mar-07 | 3-May-07 | | C | SA_MSEQ | $$ | | 5,000 | | 5,750 | 5,750 |
| 1 | 06 | 02 | 07 | 02 | | Vendor Fab/Ship Far Hall Detectors - Laser PPS | 9-Mar-07 | 3-May-07 | | C | SA_MSEQ | $$ | | 5,000 | | 5,750 | 5,750 |
| **1** | **06** | **02** | **08** | | | **User Safeguards** | | | | | | | **704** | **50,000** | **69,590** | **57,500** | **127,090** |
| **1** | **06** | **02** | **08** | **01** | | **Near Hall User Safeguards** | | | | | | | **400** | **25,000** | **39,676** | **28,750** | **68,426** |
| 1 | 06 | 02 | 08 | 01 | | Specification Near Hall - User Safeguards | 19-Jul-06 | 15-Aug-06 | | C | SL_PHS | Hrs | 40 | | 2,994 | | 2,994 |
| 1 | 06 | 02 | 08 | 01 | | Design Near Hall - User Safeguards | 16-Aug-06 | 11-Oct-06 | | C | SL_PHS | Hrs | 40 | | 3,010 | | 3,010 |
| 1 | 06 | 02 | 08 | 01 | | Design Near Hall - User Safeguards | 16-Aug-06 | 11-Oct-06 | | C | SL_ME | Hrs | 40 | | 4,369 | | 4,369 |
| 1 | 06 | 02 | 08 | 01 | | Design Near Hall - User Safeguards | 16-Aug-06 | 11-Oct-06 | | C | SL_MDD | Hrs | 40 | | 2,593 | | 2,593 |
| 1 | 06 | 02 | 08 | 01 | | Design Near Hall - User Safeguards | 16-Aug-06 | 11-Oct-06 | | C | SL_CE | Hrs | 40 | | 4,650 | | 4,650 |
| 1 | 06 | 02 | 08 | 01 | | Safety Review Near Hall - User Safeguards | 12-Oct-06 | 8-Dec-06 | | C | SL_PHS | Hrs | 40 | | 3,072 | | 3,072 |
| 1 | 06 | 02 | 08 | 01 | | Safety Review Near Hall - User Safeguards | 12-Oct-06 | 8-Dec-06 | | C | SL_CE | Hrs | 40 | | 4,747 | | 4,747 |
| 1 | 06 | 02 | 08 | 01 | | Prep Bid Pkg Near Hall Alarms/Signs - User Safeg | 11-Dec-06 | 8-Jan-07 | | C | SL_CE | Hrs | 40 | | 4,747 | | 4,747 |
| 1 | 06 | 02 | 08 | 01 | | Prep Bid Pkg NHall Interlock - User Safeguards | 11-Dec-06 | 8-Jan-07 | | C | SL_CE | Hrs | 40 | | 4,747 | | 4,747 |
| 1 | 06 | 02 | 08 | 01 | | Prepare Near Hall Bid Pkg Detectors - User Safeg | 11-Dec-06 | 8-Jan-07 | | C | SL_CE | Hrs | 40 | | 4,747 | | 4,747 |
| 1 | 06 | 02 | 08 | 01 | | Vendor Fab/Ship Near Hall Alarm/Sign - User Safe | 9-Mar-07 | 3-May-07 | | C | SA_MSEQ | $$ | | 5,000 | | 5,750 | 5,750 |
| 1 | 06 | 02 | 08 | 01 | | Vendor Ship Near Hall Intrlock-User Safeguards | 9-Mar-07 | 3-May-07 | | C | SA_MSEQ | $$ | | 5,000 | | 5,750 | 5,750 |
| 1 | 06 | 02 | 08 | 01 | | Vendor Fab/Ship Near Hall Detectors - User Safeg | 9-Mar-07 | 3-May-07 | | C | SA_MSEQ | $$ | | 15,000 | | 17,250 | 17,250 |
| **1** | **06** | **02** | **08** | **02** | | **Far Hall User Safeguards** | | | | | | | **304** | **25,000** | **29,914** | **28,750** | **58,664** |
| 1 | 06 | 02 | 08 | 02 | | Specification Far Hall - User Safeguards | 19-Jul-06 | 15-Aug-06 | | C | SL_CE | Hrs | 40 | | 4,626 | | 4,626 |
| 1 | 06 | 02 | 08 | 02 | | Design Far Hall - User Safeguards | 16-Aug-06 | 11-Oct-06 | | C | SL_PHS | Hrs | 40 | | 3,010 | | 3,010 |
| 1 | 06 | 02 | 08 | 02 | | Design Far Hall - User Safeguards | 16-Aug-06 | 11-Oct-06 | | C | SL_ME | Hrs | 40 | | 4,369 | | 4,369 |
| 1 | 06 | 02 | 08 | 02 | | Design Far Hall - User Safeguards | 16-Aug-06 | 11-Oct-06 | | C | SL_MDD | Hrs | 40 | | 2,593 | | 2,593 |
| 1 | 06 | 02 | 08 | 02 | | Design Far Hall - User Safeguards | 16-Aug-06 | 11-Oct-06 | | C | SL_CE | Hrs | 40 | | 4,650 | | 4,650 |
| 1 | 06 | 02 | 08 | 02 | | Safety Review Far Hall - User Safeguards | 12-Oct-06 | 8-Dec-06 | | C | SL_PHS | Hrs | 40 | | 3,072 | | 3,072 |
| 1 | 06 | 02 | 08 | 02 | | Safety Review Far Hall - User Safeguards | 12-Oct-06 | 8-Dec-06 | | C | SL_CE | Hrs | 40 | | 4,747 | | 4,747 |
| 1 | 06 | 02 | 08 | 02 | | Prep Bid Pkg Far Hall Alarms/Signs - User Safegu | 11-Dec-06 | 8-Jan-07 | | C | SL_CE | Hrs | 8 | | 949 | | 949 |
| 1 | 06 | 02 | 08 | 02 | | Prep Bid Pkg Far Hall Interlock - User Safeguard | 11-Dec-06 | 8-Jan-07 | | C | SL_CE | Hrs | 8 | | 949 | | 949 |
| 1 | 06 | 02 | 08 | 02 | | Prepare Far Hall Bid Pkg Detectors - User Safegu | 11-Dec-06 | 8-Jan-07 | | C | SL_CE | Hrs | 8 | | 949 | | 949 |
| 1 | 06 | 02 | 08 | 02 | | Vendor Fab/Ship Far Hall Alarm/Sign - User Safeg | 9-Mar-07 | 3-May-07 | | C | SA_MSEQ | $$ | | 5,000 | | 5,750 | 5,750 |
| 1 | 06 | 02 | 08 | 02 | | Vendor Ship Far Hall Contain/Intrlck-User Safegu | 9-Mar-07 | 3-May-07 | | C | SA_MSEQ | $$ | | 5,000 | | 5,750 | 5,750 |
| 1 | 06 | 02 | 08 | 02 | | Vendor Fab/Ship Far Hall Detectors - User Safegu | 9-Mar-07 | 3-May-07 | | C | SA_MSEQ | $$ | | 15,000 | | 17,250 | 17,250 |
| **2** | **01** | **01** | **11** | | | **Global Controls R&D** | | | | | | | **19,653** | **272,274** | **2,157,971** | **316,271** | **2,474,242** |
| **2** | **01** | **01** | **11** | **01** | | **EPICS Control Modules** | | | | | | | **1,018** | **82,432** | **109,728** | **94,506** | **204,234** |
| 2 | 01 | 01 | 11 | 01 | | Define Injector Timing module Reqmts CP | 1-Mar-05 | 13-May-05 | S | R | SL_CP | Hrs | 120 | | 12,371 | | 12,371 |
| 2 | 01 | 01 | 11 | 01 | | Define Injector Timing Module Reqmts CE | 1-Oct-04 | 29-Nov-04 | | R | SL_CE | Hrs | 120 | | 15,301 | | 15,301 |
| 2 | 01 | 01 | 11 | 01 | | Prep Bid Pak-Injector Timing modules | 16-May-05 | 13-Jun-05 | S | R | SL_CP | Hrs | 40 | | 4,124 | | 4,124 |
| 2 | 01 | 01 | 11 | 01 | | Prep Bid Pak-Injector Timing modules | 16-May-05 | 13-Jun-05 | S | R | SL_CE | Hrs | 40 | | 5,100 | | 5,100 |
| 2 | 01 | 01 | 11 | 01 | | Prep Bid Pak-Injector Timing modules | 16-May-05 | 13-Jun-05 | S | R | SL_ADMN | Hrs | 40 | | 2,647 | | 2,647 |
| 2 | 01 | 01 | 11 | 01 | | Evaluate Vendor Proposals | 14-Jul-05 | 27-Jul-05 | S | R | SL_CP | Hrs | 8 | | 825 | | 825 |
| 2 | 01 | 01 | 11 | 01 | | Evaluate Vendor Proposals | 14-Jul-05 | 27-Jul-05 | S | R | SL_CE | Hrs | 8 | | 1,020 | | 1,020 |
| 2 | 01 | 01 | 11 | 01 | | Manage/Work with Vendor | 28-Jul-05 | 3-Nov-05 | S | R | SL_CP | Hrs | 40 | | 4,164 | | 4,164 |
| 2 | 01 | 01 | 11 | 01 | | Manage/Work with Vendor | 28-Jul-05 | 3-Nov-05 | S | R | SL_CE | Hrs | 40 | | 5,150 | | 5,150 |
| 2 | 01 | 01 | 11 | 01 | | Procure SLCnet cable to MPG micro 360 Hz signal | 15-Feb-07 | 1-Mar-07 | S | X | SL_MSEG | $$ | | 199 | | 231 | 231 |
| 2 | 01 | 01 | 11 | 01 | | Procure VME crate (1) w/IOC(1), VxWorks license | 4-Nov-05 | 20-Jan-06 | S | R | SL_MSEG | $$ | | 15,000 | | 16,927 | 16,927 |
| 2 | 01 | 01 | 11 | 01 | | Procure cables | 4-Nov-05 | 6-Dec-05 | S | R | SL_MSEG | $$ | | 133 | | 150 | 150 |
| 2 | 01 | 01 | 11 | 01 | | Write Test Docs - Injector Timing modules | 4-Nov-05 | 10-Nov-05 | S | R | SL_CP | Hrs | 10 | | 1,060 | | 1,060 |
| 2 | 01 | 01 | 11 | 01 | | Install access to PEP-II timing signal, control | 2-Mar-07 | 2-Mar-07 | S | X | SL_PCEF | Hrs | 24 | | 1,768 | | 1,768 |
| 2 | 01 | 01 | 11 | 01 | | Install access to PEP-II timing signal, control | 2-Mar-07 | 2-Mar-07 | S | X | SL_CT | Hrs | 8 | | 589 | | 589 |
| 2 | 01 | 01 | 11 | 01 | | Install access to PEP-II timing signal, control | 2-Mar-07 | 2-Mar-07 | S | X | SL_CCA | Hrs | 8 | | 627 | | 627 |
| 2 | 01 | 01 | 11 | 01 | | Assemble procured parts | 23-Jan-06 | 15-Feb-06 | S | X | SL_PCEF | Hrs | 72 | | 5,168 | | 5,168 |
| 2 | 01 | 01 | 11 | 01 | | Procure Master & Distributed Timing Hardware | 3-Oct-06 | 17-Jan-07 | S | S | SL_MSEG | $$ | | 30,000 | | 34,760 | 34,760 |

| WBS Level | | | | | | LCLA DCE March-2005 | Early | Early | OBS | Fund | Res | Units | Budgeted Quantity | | Fully Burdened and Escalated Cost | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Run Time: 4/2205 8:43am | | | | | | Description | Start | Finish | | Type | Code | | Hours | $$ | Labor | M&S | Total (No Conting) |
| 1 | 2 | 3 | 4 | 5 | 6 | | | | | | | | | | | | |
| 2 | 01 | 01 | 11 | 01 | | Procure Splitter to Main Drive Line (MDL) 476 MH | 3-Oct-06 | 17-Jan-07 | S | S | SL_MSEG | $$ | | 9,900 | | 11,471 | 11,471 |
| 2 | 01 | 01 | 11 | 01 | | Procure Fiducial Output Module | 3-Oct-06 | 17-Jan-07 | S | S | SL_MSEG | $$ | | 2,000 | | 2,317 | 2,317 |
| 2 | 01 | 01 | 11 | 01 | | Procure Fiducial RF Amplifier | 3-Oct-06 | 17-Jan-07 | S | S | SL_MSEG | $$ | | 2,000 | | 2,317 | 2,317 |
| 2 | 01 | 01 | 11 | 01 | | Procure SLCnet cable to MPG micro 360 Hz signal | 3-Oct-06 | 17-Jan-07 | S | S | SL_MSEG | $$ | | 200 | | 232 | 232 |
| 2 | 01 | 01 | 11 | 01 | | Procure Timing System Heliax Cableplant | 3-Oct-06 | 17-Jan-07 | S | S | SL_MSEG | $$ | | 15,000 | | 17,380 | 17,380 |
| 2 | 01 | 01 | 11 | 01 | | Implement Fast-feedback in the IOC | 13-Jul-06 | 17-Jan-07 | S | X | SL_CP | Hrs | - | | - | | - |
| 2 | 01 | 01 | 11 | 01 | | Port Fast-feedbac software from Kissnet to Ether | 18-Jan-07 | 14-Feb-07 | S | X | SL_CP | Hrs | 160 | | 17,399 | | 17,399 |
| 2 | 01 | 01 | 11 | 01 | | Fabricate 1st Articles | 3-Jan-05 | 31-Mar-05 | S | R | SA_MSSC | $$ | | 8,000 | | 8,720 | 8,720 |
| 2 | 01 | 01 | 11 | 01 | | Write Test S/W - Injector Timing modules | 2-Oct-06 | 13-Oct-06 | S | R | SL_CP | Hrs | 40 | | 4,350 | | 4,350 |
| 2 | 01 | 01 | 11 | 01 | | Integrate software & hardware | 16-Oct-06 | 27-Oct-06 | S | X | SL_CP | Hrs | 20 | | 2,175 | | 2,175 |
| 2 | 01 | 01 | 11 | 01 | | Integrate software & hardware | 16-Oct-06 | 27-Oct-06 | S | X | SL_CCA | Hrs | 20 | | 1,566 | | 1,566 |
| 2 | 01 | 01 | 11 | 01 | | Integrate with SLC TIming Sys | 5-Mar-07 | 30-Mar-07 | S | X | SL_CP | Hrs | 60 | | 6,525 | | 6,525 |
| 2 | 01 | 01 | 11 | 01 | | Integrate with SLC TIming Sys | 5-Mar-07 | 30-Mar-07 | S | X | SL_CE | Hrs | 60 | | 8,069 | | 8,069 |
| 2 | 01 | 01 | 11 | 01 | | Perform lab tests on Injector Timing modules | 5-Mar-07 | 30-Mar-07 | S | X | SL_CP | Hrs | 40 | | 4,350 | | 4,350 |
| 2 | 01 | 01 | 11 | 01 | | Perform lab tests on Injector Timing modules | 5-Mar-07 | 30-Mar-07 | S | X | SL_CE | Hrs | 40 | | 5,380 | | 5,380 |
| **2** | **01** | **01** | **11** | **02** | | **LLRF Controls** | | | | | | | | | | | |
| **2** | **01** | **01** | **11** | **03** | | **E-beam Diagnostics and Controls** | | | | | | | | | | | |
| **2** | **01** | **01** | **11** | **04** | | **Laser Controls Design** | | | | | | | | | | | |
| **2** | **01** | **01** | **11** | **05** | | **Laser Heater Controls Design** | | | | | | | | | | | |
| **2** | **01** | **01** | **11** | **06** | | **Timing Controls** | | | | | | | | | | | |
| **2** | **01** | **01** | **11** | **07** | | **Vacuum Controls** | | | | | | | | | | | |
| **2** | **01** | **01** | **11** | **08** | | **S/W & Controls Infrastructure** | | | | | | | | | | | |
| **2** | **01** | **01** | **11** | **09** | | **Power Supply Control** | | | | | | | | | | | |
| **2** | **01** | **01** | **11** | **10** | | **MPS/PPS/BCS Controls** | | | | | | | | | | | |
| **2** | **01** | **01** | **11** | **11** | | **Global Controls Commissioning** | | | | | | | **16,045** | **-** | **1,781,216** | **-** | **1,781,216** |
| 2 | 01 | 01 | 11 | 11 | | RF Conditioning Controls Commissioning | 2-Oct-06 | 5-Dec-06 | S | X | SL_CP | Hrs | 315 | | 34,254 | | 34,254 |
| 2 | 01 | 01 | 11 | 11 | | RF Gun Ops with Beam-Controls Comissioning-A | 9-Jul-07 | 8-Oct-07 | S | X | SL_CP | Hrs | 455 | | 49,597 | | 49,597 |
| 2 | 01 | 01 | 11 | 11 | | RF Gun Ops with Beam-Controls Comissioning-B | 9-Jul-07 | 26-Jul-07 | S | X | SL_CP | Hrs | 98 | | 10,657 | | 10,657 |
| 2 | 01 | 01 | 11 | 11 | | L0-1&L0-2 Controls Commissioning | 29-Oct-07 | 15-Feb-08 | S | X | SL_CP | Hrs | 455 | | 50,768 | | 50,768 |
| 2 | 01 | 01 | 11 | 11 | | L0&SAB Controls Commissioning | 26-Nov-07 | 14-Jan-08 | S | X | SL_CP | Hrs | 520 | | 58,020 | | 58,020 |
| 2 | 01 | 01 | 11 | 11 | | DL1 Controls Commissioning | 9-Nov-07 | 7-Jan-08 | S | X | SL_CP | Hrs | 520 | | 58,020 | | 58,020 |
| 2 | 01 | 01 | 11 | 11 | | Injector Controls Optimization Commissioning | 15-Dec-06 | 7-Jan-08 | S | X | SL_CP | Hrs | 4,220 | | 461,657 | | 461,657 |
| 2 | 01 | 01 | 11 | 11 | | L1-BC1 Controls Commissioning | 9-Nov-06 | 4-Jan-07 | S | X | SL_CP | Hrs | 320 | | 34,798 | | 34,798 |
| 2 | 01 | 01 | 11 | 11 | | L1-BC1 Controls Commissioning | 9-Nov-06 | 4-Jan-07 | S | X | SL_CE | Hrs | 120 | | 16,139 | | 16,139 |
| 2 | 01 | 01 | 11 | 11 | | L2-BC2-L3 Controls Commissioning | 11-Dec-07 | 14-Feb-08 | S | X | SL_CP | Hrs | 480 | | 53,557 | | 53,557 |
| 2 | 01 | 01 | 11 | 11 | | L2-BC2-L3 Controls Commissioning | 11-Dec-07 | 14-Feb-08 | S | X | SL_CE | Hrs | 200 | | 27,597 | | 27,597 |
| 2 | 01 | 01 | 11 | 11 | | LTU + Dump Controls Commissioning | 15-Feb-08 | 9-Apr-08 | S | X | SL_CP | Hrs | 320 | | 35,705 | | 35,705 |
| 2 | 01 | 01 | 11 | 11 | | LTU + Dump Controls Commissioning | 15-Feb-08 | 9-Apr-08 | S | X | SL_CE | Hrs | 160 | | 22,077 | | 22,077 |
| 2 | 01 | 01 | 11 | 11 | | Linac Controls Optimization Commissioning | 3-Oct-06 | 8-Oct-07 | S | X | SL_CP | Hrs | 6,926 | | 753,633 | | 753,633 |
| 2 | 01 | 01 | 11 | 11 | | Controls Commissioning | 6-Dec-06 | 17-Oct-07 | S | X | SL_CP | Hrs | 440 | | 47,924 | | 47,924 |
| 2 | 01 | 01 | 11 | 11 | | Controls Commissioning | 6-Dec-06 | 17-Oct-07 | S | X | SL_CE | Hrs | 496 | | 66,816 | | 66,816 |
| **2** | **01** | **01** | **11** | **12** | | **Global Controls Management** | | | | | | | **-** | **189,842** | **-** | **221,765** | **221,765** |
| 2 | 01 | 01 | 11 | 12 | | Global Controls Management - OPC FY05 | 1-Oct-04 | 29-Sep-05 | | R | SL_MSPS | $$ | | - | | - | - |
| 2 | 01 | 01 | 11 | 12 | | Global Controls Management - OPC FY06 forward | 31-Oct-05 | 31-Mar-09 | | X | SL_MSPS | $$ | | 189,842 | | 221,765 | 221,765 |
| **2** | **01** | **01** | **11** | **13** | | **SLC Aware IOC R&D** | | | | | | | **2,590** | **-** | **267,027** | **-** | **267,027** |
| 2 | 01 | 01 | 11 | 13 | | SLC Aware IOC | 1-Oct-04 | 25-Feb-05 | | R | SL_CP | Hrs | 2,590 | | 267,027 | | 267,027 |
| **2** | **02** | **02** | | | | **Injector Controls Subsystem** | | | | | | | **904** | **64,200** | **84,951** | **72,374** | **157,325** |
| **2** | **02** | **02** | **01** | | | **Personnel Protection System (PPS) R&D** | | | | | | | **904** | **50,000** | **84,951** | **55,921** | **140,872** |
| 2 | 02 | 02 | 01 | | | BSOIC Design | 1-Jul-05 | 27-Jul-05 | | R | SL_CE | Hrs | 8 | | 1,020 | | 1,020 |
| 2 | 02 | 02 | 01 | | | BSOIC Design | 1-Jul-05 | 27-Jul-05 | | R | SL_CCA | Hrs | 260 | | 19,310 | | 19,310 |
| 2 | 02 | 02 | 01 | | | Prep Bid Pak - BSOIC | 28-Jul-05 | 10-Aug-05 | | R | SL_CE | Hrs | 16 | | 2,040 | | 2,040 |
| 2 | 02 | 02 | 01 | | | Evaluate Proposals - BSOIC | 1-Sep-05 | 15-Sep-05 | | R | SL_CE | Hrs | 16 | | 2,040 | | 2,040 |
| 2 | 02 | 02 | 01 | | | Vendor Fab/Assy - BSOIC | 12-Jul-06 | 28-Feb-07 | | X | SA_MSSC | $$ | | 25,000 | | 28,465 | 28,465 |
| 2 | 02 | 02 | 01 | | | Fab and Pre Assemble Components (as required) | 1-Mar-07 | 28-Mar-07 | | X | SL_PCEF | Hrs | 308 | | 22,686 | | 22,686 |
| 2 | 02 | 02 | 01 | | | Perform Pre-Install Qual Test on Injector PPS | 29-Mar-07 | 25-Apr-07 | | X | SL_CE | Hrs | 16 | | 2,152 | | 2,152 |
| 2 | 02 | 02 | 01 | | | PLC PPS Design Evaluation | 3-Jan-05 | 23-Feb-05 | | R | SL_MSPS | $$ | | 25,000 | | 27,456 | 27,456 |
| 2 | 02 | 02 | 01 | | | PLC PPS Design Evaluation | 3-Jan-05 | 23-Feb-05 | | R | SL_CE | Hrs | 280 | | 35,703 | | 35,703 |
| **2** | **02** | **02** | **02** | | | **Beam Containment Subsystem (BCS)** | | | | | | | | | | | |
| **2** | **02** | **02** | **03** | | | **Machine Protection Subsystem (MPS)** | | | | | | | | | | | |
| **2** | **02** | **02** | **04** | | | **Power Conv (beamline pwr supp) Spares** | | | | | | | **-** | **14,200** | **-** | **16,453** | **16,453** |
| 2 | 02 | 02 | 04 | | | Procure 12 AMP MCOR Modules (2)-Spares | 3-Oct-06 | 9-Apr-07 | | S | SL_MSEG | $$ | | 3,600 | | 4,171 | 4,171 |
| 2 | 02 | 02 | 04 | | | Procure 30 AMP MCOR Modules (1)-Spares | 3-Oct-06 | 9-Apr-07 | | S | SL_MSEG | $$ | | 2,100 | | 2,433 | 2,433 |
| 2 | 02 | 02 | 04 | | | Procure 15KW Power Supply-Spares | 3-Oct-06 | 9-Apr-07 | | S | SL_MSEG | $$ | | 8,500 | | 9,849 | 9,849 |
| **2** | **02** | **02** | **04** | **01** | | **Power Supply Controls** | | | | | | | | | | | |

| WBS Level | | | | | | LCLA DCE March-2005 | Early | Early | OBS | Fund | Res | Units | Budgeted Quantity | | Fully Burdened and Escalated Cost | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Run Time: 4/2205 8:43am | | | | | | Description | Start | Finish | | Type | Code | | Hours | $$ | Labor | M&S | Total (No Conting) |
| 1 | 2 | 3 | 4 | 5 | 6 | | | | | | | | | | | | |
| 2 | 02 | 02 | 05 | | | LLRF Controls | | | | | | | | | | | |
| 2 | 02 | 02 | 06 | | | E-Beam Diagnostics Controls | | | | | | | | | | | |
| 2 | 02 | 02 | 06 | 01 | | Controls - Wire Scanners | | | | | | | | | | | |
| 2 | 02 | 02 | 06 | 02 | | Controls - BPM Processor Module | | | | | | | | | | | |
| 2 | 02 | 02 | 06 | 03 | | Controls - Toroids | | | | | | | | | | | |
| 2 | 02 | 02 | 06 | 05 | | Controls - Profile Monitors | | | | | | | | | | | |
| 2 | 02 | 02 | 06 | 06 | | Control - EO Diagnostic | | | | | | | | | | | |
| 2 | 02 | 02 | 06 | 14 | | Controls - Faraday Cup | | | | | | | | | | | |
| 2 | 02 | 02 | 06 | 15 | | Controls - Tune-Up Dump | | | | | | | | | | | |
| 2 | 02 | 02 | 08 | | | Timing Controls | | | | | | | | | | | |
| 2 | 02 | 02 | 09 | | | Vacuum Controls | | | | | | | | | | | |
| 2 | 02 | 02 | 10 | | | Software & Controls Infrastructure | | | | | | | | | | | |
| 2 | 02 | 02 | 11 | | | EPICS VXI Control Modules | | | | | | | | | | | |
| 2 | 02 | 02 | 12 | | | Laser Controls | | | | | | | | | | | |
| 2 | 02 | 02 | 13 | | | Laser Heater Controls | | | | | | | | | | | |
| 2 | 03 | 02 | | | | Linac Controls & Power Conversion Subsystem | | | | | | | 174 | 73,110 | 15,022 | 84,712 | 99,734 |
| 2 | 03 | 02 | 01 | | | Personnel Protection System (PPS) | | | | | | | | | | | |
| 2 | 03 | 02 | 02 | | | Beam Containment System (BCS) | | | | | | | | | | | |
| 2 | 03 | 02 | 03 | | | Machine Protection System (MPS) | | | | | | | | | | | |
| 2 | 03 | 02 | 04 | | | Power Conversion | | | | | | | 174 | 73,110 | 15,022 | 84,712 | 99,734 |
| 2 | 03 | 02 | 04 | 01 | | Spare Power Supply (Dipole Type) | | | | | | | 80 | 21,480 | 6,740 | 24,888 | 31,628 |
| 2 | 03 | 02 | 04 | 01 | | Spare Pwr Supply (Dipole Type) Prcurement | 3-Oct-06 | 12-Mar-07 | | S | SL_MSEG | $$ | | 21,480 | | 24,888 | 24,888 |
| 2 | 03 | 02 | 04 | 01 | | Assemble Pwr Supply, Transductor & Control | 13-Mar-07 | 20-Mar-07 | S | S | SL_PCT | Hrs | 16 | | 1,179 | | 1,179 |
| 2 | 03 | 02 | 04 | 01 | | Assemble Pwr Supply, Transductor & Control | 13-Mar-07 | 20-Mar-07 | S | S | SL_PCE | Hrs | 8 | | 1,076 | | 1,076 |
| 2 | 03 | 02 | 04 | 01 | | Assemble Pwr Supply, Transductor & Control | 13-Mar-07 | 20-Mar-07 | S | S | SL_PCCA | Hrs | 24 | | 1,880 | | 1,880 |
| 2 | 03 | 02 | 04 | 01 | | Integrate Pwr Supply, Transductor & Control | 21-Mar-07 | 29-Mar-07 | S | S | SL_PCEF | Hrs | 26 | | 1,915 | | 1,915 |
| 2 | 03 | 02 | 04 | 01 | | Integrate Cables | 30-Mar-07 | 2-Apr-07 | S | S | SL_TMUE | Hrs | 6 | | 690 | | 690 |
| 2 | 03 | 02 | 04 | 02 | | Spare Power Supply (Quad Type) | | | | | | | 82 | 21,480 | 6,901 | 24,888 | 31,789 |
| 2 | 03 | 02 | 04 | 02 | | Spare Pwr Supply (Quad Type) Procurement | 3-Oct-06 | 12-Mar-07 | | S | SL_MSEG | $$ | | 21,480 | | 24,888 | 24,888 |
| 2 | 03 | 02 | 04 | 02 | | Assemble Pwr Supply, Transductor & Control | 13-Mar-07 | 20-Mar-07 | S | S | SL_PCT | Hrs | 16 | | 1,179 | | 1,179 |
| 2 | 03 | 02 | 04 | 02 | | Assemble Pwr Supply, Transductor & Control | 13-Mar-07 | 20-Mar-07 | S | S | SL_PCE | Hrs | 8 | | 1,076 | | 1,076 |
| 2 | 03 | 02 | 04 | 02 | | Assemble Pwr Supply, Transductor & Control | 13-Mar-07 | 20-Mar-07 | S | S | SL_PCCA | Hrs | 24 | | 1,880 | | 1,880 |
| 2 | 03 | 02 | 04 | 02 | | Integrate Pwr Supply, Transductor & Control | 21-Mar-07 | 29-Mar-07 | S | S | SL_PCEF | Hrs | 26 | | 1,915 | | 1,915 |
| 2 | 03 | 02 | 04 | 02 | | Integrate Cables | 30-Mar-07 | 2-Apr-07 | S | S | SL_TMUE | Hrs | 6 | | 690 | | 690 |
| 2 | 03 | 02 | 04 | 02 | | Integrate Magnet Interlock | 3-Apr-07 | 3-Apr-07 | S | S | SL_TMUI | Hrs | 2 | | 161 | | 161 |
| 2 | 03 | 02 | 04 | 03 | | Spare Power Supply (Trim Type) | | | | | | | 12 | 30,150 | 1,382 | 34,935 | 36,316 |
| 2 | 03 | 02 | 04 | 03 | | Spare Power Supply Procurement | 3-Oct-06 | 12-Mar-07 | | S | SL_MSEG | $$ | | 30,150 | | 34,935 | 34,935 |
| 2 | 03 | 02 | 04 | 03 | | Integrate Cables | 13-Mar-07 | 14-Mar-07 | S | S | SL_TMUE | Hrs | 12 | | 1,382 | | 1,382 |
| 2 | 03 | 02 | 04 | 04 | | Controls & Power Supply - Spare Misc Hdwr | | | | | | | | | | | |
| 2 | 03 | 02 | 05 | | | Controls - LLRF | | | | | | | | | | | |
| 2 | 03 | 02 | 06 | | | Controls - E-Beam Diagnostic | | | | | | | | | | | |
| 2 | 03 | 02 | 07 | | | Controls - Laser | | | | | | | | | | | |
| 2 | 03 | 02 | 08 | | | Controls - Timing | | | | | | | | | | | |
| 2 | 03 | 02 | 09 | | | Controls - Vacuum | | | | | | | | | | | |
| 2 | 03 | 02 | 10 | | | Software & Controls Infrastructure | | | | | | | | | | | |
| 2 | 04 | 02 | | | | Controls | | | | | | | - | 22,000 | - | 23,020 | 23,020 |
| 2 | 04 | 02 | 01 | | | Controls Management and Integration | | | | | | | - | 16,000 | - | 16,480 | 16,480 |
| 2 | 04 | 02 | 01 | | | Procure cameras for imaging test stand | 1-Mar-05 | 29-Mar-05 | 2 | R | AN_MSEG | $$ | | 4,000 | | 4,120 | 4,120 |
| 2 | 04 | 02 | 01 | | | Procure image capture hdware-imaging test stand | 1-Mar-05 | 29-Mar-05 | 2 | R | AN_MSEG | $$ | | 4,000 | | 4,120 | 4,120 |
| 2 | 04 | 02 | 01 | | | Procure host for imaging test stand | 1-Mar-05 | 29-Mar-05 | 2 | R | AN_MSEG | $$ | | 8,000 | | 8,240 | 8,240 |
| 2 | 04 | 02 | 02 | | | Motion | | | | | | | | | | | |
| 2 | 04 | 02 | 03 | | | Signal Analysis | | | | | | | | | | | |
| 2 | 04 | 02 | 04 | | | Video | | | | | | | | | | | |
| 2 | 04 | 02 | 05 | | | Data Acquisition and Control | | | | | | | | | | | |
| 2 | 04 | 02 | 06 | | | Vacuum | | | | | | | | | | | |
| 2 | 04 | 02 | 07 | | | Machine Protection | | | | | | | - | 6,000 | - | 6,540 | 6,540 |
| 2 | 04 | 02 | 07 | | | Procure Spare MPS Hardware | 3-Oct-06 | 3-Oct-06 | A | S | AN_MSEG | $$ | | 2,000 | | 2,180 | 2,180 |
| 2 | 04 | 02 | 07 | | | REC: spare signal electronics | 5-Oct-06 | 5-Oct-06 | A | S | AA_MSEG | $$ | | 3,000 | | 3,270 | 3,270 |
| 2 | 04 | 02 | 07 | | | Procure spare signal electronics | 4-Oct-06 | 4-Oct-06 | A | S | AN_MSEG | $$ | | 1,000 | | 1,090 | 1,090 |
| 2 | 05 | 02 | | | | Controls | | | | | | | | | | | |
| 2 | 05 | 02 | 01 | | | Controls Engineering | | | | | | | | | | | |
| 2 | 05 | 02 | 02 | | | Slow Controls | | | | | | | | | | | |
| 2 | 05 | 02 | 03 | | | Fast Controls | | | | | | | | | | | |
| 2 | 05 | 02 | 04 | | | Femto Controls | | | | | | | | | | | |

| WBS Level | | | | | | LCLA DCE March-2005 | Early | Early | OBS | Fund | Res | Units | Budgeted Quantity | | Fully Burdened and Escalated Cost | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Run Time: 4/2205 8:43am | | | | | | Description | Start | Finish | | Type | Code | | Hours | $$ | Labor | M&S | Total (No Conting) |
| 1 | 2 | 3 | 4 | 5 | 6 | | | | | | | | | | | | |
| **2** | **06** | **02** | | | | **Controls Subsystem** | | | | | | | **2,480** | **-** | **269,715** | **-** | **269,715** |
| **2** | **06** | **02** | **01** | | | **Cabling** | | | | | | | **400** | **-** | **43,615** | **-** | **43,615** |
| 2 | 06 | 02 | 01 | | | Commission Far Hall - Cabling | 12-Aug-08 | 9-Sep-08 | | X | SL_TMUE | Hrs | 20 | | 2,362 | | 2,362 |
| 2 | 06 | 02 | 01 | | | Commission Far Hall - Cabling | 12-Aug-08 | 9-Sep-08 | | X | SL_CT | Hrs | 40 | | 3,023 | | 3,023 |
| 2 | 06 | 02 | 01 | | | Commission Far Hall - Cabling | 12-Aug-08 | 9-Sep-08 | | X | SL_CE | Hrs | 40 | | 5,519 | | 5,519 |
| 2 | 06 | 02 | 01 | | | Commission Tunnel - Cabling | 4-Jun-08 | 1-Jul-08 | | X | SL_TMUE | Hrs | 20 | | 2,362 | | 2,362 |
| 2 | 06 | 02 | 01 | | | Commission Tunnel - Cabling | 4-Jun-08 | 1-Jul-08 | | X | SL_CT | Hrs | 40 | | 3,023 | | 3,023 |
| 2 | 06 | 02 | 01 | | | Commission Tunnel - Cabling | 4-Jun-08 | 1-Jul-08 | | X | SL_CE | Hrs | 40 | | 5,519 | | 5,519 |
| 2 | 06 | 02 | 01 | | | Commission FEE - Cabling | 3-Mar-08 | 28-Mar-08 | | X | SL_TMUE | Hrs | 20 | | 2,362 | | 2,362 |
| 2 | 06 | 02 | 01 | | | Commission FEE - Cabling | 3-Mar-08 | 28-Mar-08 | | X | SL_CT | Hrs | 40 | | 3,023 | | 3,023 |
| 2 | 06 | 02 | 01 | | | Commission FEE - Cabling | 3-Mar-08 | 28-Mar-08 | | X | SL_CE | Hrs | 40 | | 5,519 | | 5,519 |
| 2 | 06 | 02 | 01 | | | Commission Near Hall - Cabling | 4-Mar-08 | 31-Mar-08 | | X | SL_TMUE | Hrs | 20 | | 2,362 | | 2,362 |
| 2 | 06 | 02 | 01 | | | Commission Near Hall - Cabling | 4-Mar-08 | 31-Mar-08 | | X | SL_CT | Hrs | 40 | | 3,023 | | 3,023 |
| 2 | 06 | 02 | 01 | | | Commission Near Hall - Cabling | 4-Mar-08 | 31-Mar-08 | | X | SL_CE | Hrs | 40 | | 5,519 | | 5,519 |
| **2** | **06** | **02** | **02** | | | **Network** | | | | | | | **160** | **-** | **17,749** | **-** | **17,749** |
| 2 | 06 | 02 | 02 | | | Commission - Network | 10-Sep-08 | 7-Oct-08 | | X | SL_PHS | Hrs | 40 | | 3,595 | | 3,595 |
| 2 | 06 | 02 | 02 | | | Commission - Network | 10-Sep-08 | 7-Oct-08 | | X | SL_EE | Hrs | 40 | | 5,556 | | 5,556 |
| 2 | 06 | 02 | 02 | | | Commission - Network | 10-Sep-08 | 7-Oct-08 | | X | SL_CT | Hrs | 40 | | 3,043 | | 3,043 |
| 2 | 06 | 02 | 02 | | | Commission - Network | 10-Sep-08 | 7-Oct-08 | | X | SL_CE | Hrs | 40 | | 5,556 | | 5,556 |
| **2** | **06** | **02** | **03** | | | **PC Support** | | | | | | | **160** | **-** | **19,074** | **-** | **19,074** |
| 2 | 06 | 02 | 03 | | | Commission - PC Support | 7-Aug-08 | 4-Sep-08 | | X | SL_PHS | Hrs | 40 | | 3,572 | | 3,572 |
| 2 | 06 | 02 | 03 | | | Commission - PC Support | 7-Aug-08 | 4-Sep-08 | | X | SL_EE | Hrs | 40 | | 5,519 | | 5,519 |
| 2 | 06 | 02 | 03 | | | Commission - PC Support | 7-Aug-08 | 4-Sep-08 | | X | SL_CP | Hrs | 40 | | 4,463 | | 4,463 |
| 2 | 06 | 02 | 03 | | | Commission - PC Support | 7-Aug-08 | 4-Sep-08 | | X | SL_CE | Hrs | 40 | | 5,519 | | 5,519 |
| **2** | **06** | **02** | **04** | | | **Beamline Controls** | | | | | | | **320** | **-** | **33,153** | **-** | **33,153** |
| 2 | 06 | 02 | 04 | | | Commission - Beamline Control | 9-May-08 | 6-Jun-08 | | X | SL_PHS | Hrs | 80 | | 7,143 | | 7,143 |
| 2 | 06 | 02 | 04 | | | Commission - Beamline Control | 9-May-08 | 6-Jun-08 | | X | SL_CT | Hrs | 80 | | 6,045 | | 6,045 |
| 2 | 06 | 02 | 04 | | | Commission - Beamline Control | 9-May-08 | 6-Jun-08 | | X | SL_CP | Hrs | 80 | | 8,926 | | 8,926 |
| 2 | 06 | 02 | 04 | | | Commission - Beamline Control | 9-May-08 | 6-Jun-08 | | X | SL_CE | Hrs | 80 | | 11,039 | | 11,039 |
| **2** | **06** | **02** | **05** | | | **X-Ray PPS** | | | | | | | **480** | **-** | **54,339** | **-** | **54,339** |
| 2 | 06 | 02 | 05 | | | Commission FEE - X-Ray PPS | 8-Feb-08 | 7-Mar-08 | | X | SL_ME | Hrs | 40 | | 5,186 | | 5,186 |
| 2 | 06 | 02 | 05 | | | Commission FEE - X-Ray PPS | 8-Feb-08 | 7-Mar-08 | | X | SL_CT | Hrs | 40 | | 3,023 | | 3,023 |
| 2 | 06 | 02 | 05 | | | Commission FEE - X-Ray PPS | 8-Feb-08 | 7-Mar-08 | | X | SL_CE | Hrs | 40 | | 5,519 | | 5,519 |
| 2 | 06 | 02 | 05 | | | Commission Near Hall - X-Ray PPS | 27-Jun-07 | 25-Jul-07 | | X | SL_ME | Hrs | 40 | | 5,055 | | 5,055 |
| 2 | 06 | 02 | 05 | | | Commission Near Hall - X-Ray PPS | 27-Jun-07 | 25-Jul-07 | | X | SL_CT | Hrs | 40 | | 2,947 | | 2,947 |
| 2 | 06 | 02 | 05 | | | Commission Near Hall - X-Ray PPS | 27-Jun-07 | 25-Jul-07 | | X | SL_CE | Hrs | 40 | | 5,380 | | 5,380 |
| 2 | 06 | 02 | 05 | | | Commission Far Hall X-Ray PPS | 12-Sep-07 | 9-Oct-07 | | X | SL_ME | Hrs | 40 | | 5,100 | | 5,100 |
| 2 | 06 | 02 | 05 | | | Commission Far Hall X-Ray PPS | 12-Sep-07 | 9-Oct-07 | | X | SL_CT | Hrs | 40 | | 2,973 | | 2,973 |
| 2 | 06 | 02 | 05 | | | Commission Far Hall X-Ray PPS | 12-Sep-07 | 9-Oct-07 | | X | SL_CE | Hrs | 40 | | 5,429 | | 5,429 |
| 2 | 06 | 02 | 05 | | | Commission Tunnel - X-Ray PPS | 19-Nov-07 | 3-Jan-08 | | X | SL_ME | Hrs | 40 | | 5,186 | | 5,186 |
| 2 | 06 | 02 | 05 | | | Commission Tunnel - X-Ray PPS | 19-Nov-07 | 3-Jan-08 | | X | SL_CT | Hrs | 40 | | 3,023 | | 3,023 |
| 2 | 06 | 02 | 05 | | | Commission Tunnel - X-Ray PPS | 19-Nov-07 | 3-Jan-08 | | X | SL_CE | Hrs | 40 | | 5,519 | | 5,519 |
| **2** | **06** | **02** | **06** | | | **X-Ray MPS** | | | | | | | **480** | **-** | **54,339** | **-** | **54,339** |
| 2 | 06 | 02 | 06 | | | Commission Near Hall - X-Ray MPS | 27-Jun-07 | 25-Jul-07 | | X | SL_ME | Hrs | 40 | | 5,055 | | 5,055 |
| 2 | 06 | 02 | 06 | | | Commission Near Hall - X-Ray MPS | 27-Jun-07 | 25-Jul-07 | | X | SL_CT | Hrs | 40 | | 2,947 | | 2,947 |
| 2 | 06 | 02 | 06 | | | Commission Near Hall - X-Ray MPS | 27-Jun-07 | 25-Jul-07 | | X | SL_CE | Hrs | 40 | | 5,380 | | 5,380 |
| 2 | 06 | 02 | 06 | | | Commission Tunnel - X-Ray MPS | 22-Oct-07 | 16-Nov-07 | | X | SL_ME | Hrs | 40 | | 5,186 | | 5,186 |
| 2 | 06 | 02 | 06 | | | Commission Tunnel - X-Ray MPS | 22-Oct-07 | 16-Nov-07 | | X | SL_CT | Hrs | 40 | | 3,023 | | 3,023 |
| 2 | 06 | 02 | 06 | | | Commission Tunnel - X-Ray MPS | 22-Oct-07 | 16-Nov-07 | | X | SL_CE | Hrs | 40 | | 5,519 | | 5,519 |
| 2 | 06 | 02 | 06 | | | Commission Far Hall - X-Ray MPS | 12-Sep-07 | 9-Oct-07 | | X | SL_ME | Hrs | 40 | | 5,100 | | 5,100 |
| 2 | 06 | 02 | 06 | | | Commission Far Hall - X-Ray MPS | 12-Sep-07 | 9-Oct-07 | | X | SL_CT | Hrs | 40 | | 2,973 | | 2,973 |
| 2 | 06 | 02 | 06 | | | Commission Far Hall - X-Ray MPS | 12-Sep-07 | 9-Oct-07 | | X | SL_CE | Hrs | 40 | | 5,429 | | 5,429 |
| 2 | 06 | 02 | 06 | | | Commission FEE - X-Ray MPS | 8-Feb-08 | 7-Mar-08 | | X | SL_ME | Hrs | 40 | | 5,186 | | 5,186 |
| 2 | 06 | 02 | 06 | | | Commission FEE - X-Ray MPS | 8-Feb-08 | 7-Mar-08 | | X | SL_CT | Hrs | 40 | | 3,023 | | 3,023 |
| 2 | 06 | 02 | 06 | | | Commission FEE - X-Ray MPS | 8-Feb-08 | 7-Mar-08 | | X | SL_CE | Hrs | 40 | | 5,519 | | 5,519 |
| **2** | **06** | **02** | **07** | | | **Laser PPS** | | | | | | | **240** | **-** | **23,723** | **-** | **23,723** |
| 2 | 06 | 02 | 07 | | | Commission Near Hall - Laser PPS | 27-Jun-07 | 25-Jul-07 | | X | SL_PHS | Hrs | 40 | | 3,482 | | 3,482 |
| 2 | 06 | 02 | 07 | | | Commission Near Hall - Laser PPS | 27-Jun-07 | 25-Jul-07 | | X | SL_CT | Hrs | 40 | | 2,947 | | 2,947 |
| 2 | 06 | 02 | 07 | | | Commission Near Hall - Laser PPS | 27-Jun-07 | 25-Jul-07 | | X | SL_CE | Hrs | 40 | | 5,380 | | 5,380 |
| 2 | 06 | 02 | 07 | | | Commission Far Hall - Laser PPS | 12-Sep-07 | 9-Oct-07 | | X | SL_PHS | Hrs | 40 | | 3,513 | | 3,513 |
| 2 | 06 | 02 | 07 | | | Commission Far Hall - Laser PPS | 12-Sep-07 | 9-Oct-07 | | X | SL_CT | Hrs | 40 | | 2,973 | | 2,973 |
| 2 | 06 | 02 | 07 | | | Commission Far Hall - Laser PPS | 12-Sep-07 | 9-Oct-07 | | X | SL_CE | Hrs | 40 | | 5,429 | | 5,429 |
| **2** | **06** | **02** | **08** | | | **User Safeguards** | | | | | | | **240** | **-** | **23,723** | **-** | **23,723** |
| 2 | 06 | 02 | 08 | | | Commission Far Hall - User Safeguards | 12-Sep-07 | 9-Oct-07 | | X | SL_PHS | Hrs | 40 | | 3,513 | | 3,513 |

| WBS Level | | | | | | LCLA DCE March-2005 | Early | Early | OBS | Fund | Res | Units | Budgeted Quantity | | Fully Burdened and Escalated Cost | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Run Time: 4/2205 8:43am | | | | | | Description | Start | Finish | | Type | Code | | Hours | $$ | Labor | M&S | Total (No Conting) |
| 1 | 2 | 3 | 4 | 5 | 6 | | | | | | | | | | | | |
| 2 | 06 | 02 | 08 | | | Commission Far Hall - User Safeguards | 12-Sep-07 | 9-Oct-07 | | X | SL_CT | Hrs | 40 | | 2,973 | | 2,973 |
| 2 | 06 | 02 | 08 | | | Commission Far Hall - User Safeguards | 12-Sep-07 | 9-Oct-07 | | X | SL_CE | Hrs | 40 | | 5,429 | | 5,429 |
| 2 | 06 | 02 | 08 | | | Commission Near Hall - User Safeguards | 27-Jun-07 | 25-Jul-07 | | X | SL_PHS | Hrs | 40 | | 3,482 | | 3,482 |
| 2 | 06 | 02 | 08 | | | Commission Near Hall - User Safeguards | 27-Jun-07 | 25-Jul-07 | | X | SL_CT | Hrs | 40 | | 2,947 | | 2,947 |
| 2 | 06 | 02 | 08 | | | Commission Near Hall - User Safeguards | 27-Jun-07 | 25-Jul-07 | | X | SL_CE | Hrs | 40 | | 5,380 | | 5,380 |