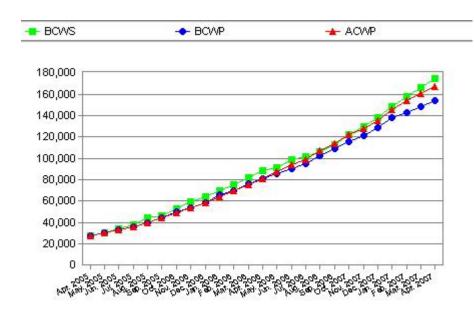
Linac Coherent Light Source, 03-SC-002, SC

MISSION. The purpose of the LCLS Project is to provide laser-like radiation in the xray region of the spectrum that is 10 billion times greater in peak brightness than any existing coherent x-ray light source. This advance in brightness is similar to that of a synchrotron over a 1960's laboratory x-ray tube. Synchrotrons revolutionized science across disciplines ranging from atomic physics to structural biology. Advances from the LCLS are expected to be equally dramatic. The characteristics of the light from the LCLS will open new realms of scientific applications in the chemical, material, and biological sciences including fundamental studies of the interaction of intense x-ray pulses with simple atomic systems, structural studies on single nanoscale particles and biomolecules, ultrafast dynamics in chemistry and solid-state physics, studies of nanoscale structure and dynamics in condensed matter, and use of the LCLS to create plasmas.

DESCRIPTION. The LCLS project leverages capital investments in the existing SLAC linear accelerator (linac) as well as technologies developed for linear colliders and for the production of intense electron beams with radio-frequency photocathode guns. The LCLS requires an injector to be built at Sector 20 of the 30-sector SLAC linac to create the electron beam required for the x-ray Free Electron Laser. The last one-third of the linac will be modified and most of the linac and its infrastructure will remain unchanged. The existing components in the Final Focus Test Beam tunnel will be removed and replaced by a new undulator and associated equipment. Two new experimental buildings, the Near Hall and the Far Hall, will be constructed and connected by the beam line tunnel. A Central Laboratory Office Building will be constructed to provide laboratory and office space for LCLS users and serve as a center of excellence for basic research in x-ray physics and ultrafast science.



Cum. Earned Value (thru Apr. FY07; \$K)

| BCWS | BCWP | ACWP | CV | sv |
|-----------|-----------|-----------|-----------|-----------|
| \$175,067 | \$154,552 | \$167,093 | -\$12,541 | -\$20,515 |

| Cu | ım. | Current Month | | Prior Month | |
|------|------|---------------|------|-------------|------|
| СРІ | SPI | СРІ | SPI | СРІ | SPI |
| 0.92 | 0.88 | 0.99 | 0.72 | 0.74 | 0.61 |

CRITICAL DECISION MILESTONES

| Project Start Date | Project Completion Date |
|--------------------|-------------------------|
| 06/13/2001 | 03/31/2009 |

| | Name | Planned Date | Actual Date | Approval |
|----|--------|-----------------|----------------|----------|
| 1. | CD - 0 | 06/30/2001 | 06/13/2001 | |
| 2. | CD - 1 | 10/30/2002 | 10/16/2002 | |
| 3. | CD - 2 | 05/31/2003 | 07/01/2003 | |
| 4. | CD - 2 | 10/31/2004 | 04/11/2005 | |
| 5. | CD - 3 | 12/31/2004 | 12/10/2004 | |
| 6. | CD - 3 | 02/28/2006 | 03/10/2006 | |
| 7. | CD - 4 | 03/31/2009 | | |

PROJECT CONTACTS

| Acquisition Executive | | |
|--------------------------|---------------|--------------------|
| Program Manager | Tom Brown | (301) 903- 6827 |
| DOE Project Manager | Hanley Lee | (650) 926- 3207 |

PROJECT ATTACHMENTS

FUNDING PROFILE

| Fiscal Year | TPC (\$K) | TEC (\$K) |
|-------------|-----------|-----------|
| 2005 | 379,000 | 315,000 |

| Year | Funding Plan (\$K) | Appropriations (\$K) |
|------|--------------------|----------------------|
| 2002 | 1,500 | 1,500 |
| 2003 | 5,925 | 5,925 |
| 2004 | 9,456 | 9,456 |
| 2005 | 53,674 | 53,674 |
| 2006 | 89,044 | |
| 2007 | 121,901 | |
| 2008 | 66,000 | |
| 2009 | 31,500 | |