

Jefferson Lab Weekly Briefs

October 3, 2007

12 GeV Upgrade

As part of the Base Switchyard Service Building Addition (conventional facilities) to support the 12 GeV CEBAF Upgrade, two new penetrations into the accelerator tunnel will be constructed for additional cable runs. On Sept. 27, JLab Facilities Management and Alpha Corporation (construction management firm) conducted a constructability review of the proposed design for these new penetrations. The accelerator tunnel is below the water table and the purpose of this review was to minimize the water infiltration risks during construction and future operations. The construction methods and materials including alternatives were discussed in detail. The proposed design was determined to be optimal with minor modifications. The specifications for the grout material will be investigated further to minimize permeability.

Physics

• Sabbatical Support and Research Leave

Jefferson Science Associates, LLC, will continue the Jefferson Lab Sabbatical and Research Leave Support program (supported by SURA in the past) in 2008. Application deadline is Jan. 25, 2008. The [official announcement](#) can be found on the SURA website.

• JLab 2008 Graduate Fellowship Program

Jefferson Science Associates, LLC, plans to award eight fellowships in March 2008 to doctoral program graduate students at SURA member universities for JLab-related research. Application deadline is Jan. 25, 2008. Seven awards are for research related to the theoretical and experimental programs of the Lab, including nuclear, particle and accelerator physics, and associated science and engineering. One fellowship is available for research related to the free-electron laser program. The [Official Fellowship Announcement](#) and application materials can be found on the SURA website.

Environment, Safety, Health & Quality

The National Highway Traffic Safety Administration's 2006 highway traffic accident figures noted a decrease in fatalities, 42,642 deaths in 2006 from 43,510 in 2005. The number of fatalities in 2006 is the lowest level recorded in five years, and the 2 percent decline is the largest decline since 1992. The data shows 2.58 million people were injured in 2006 – a “statistically significant decline” of 4.6 percent from 2005, according to the NHTSA report. Still, more than half of the fatalities in 2006 were due to not wearing seat belts.

These National Safety Council tips can help reduce the dangers of reduced visibility and glare with the days getting noticeably shorter as we move into fall:

- Drive cautiously and leave extra following distance between you and the vehicle in front of you;
- Keep the windshield clean and the windshield washer reservoir full;
- Turn on headlights to counteract the possible poor vision of oncoming drivers;
- Lower visors to help block some of the reflected light;
- Consider wearing sunglasses; polarized lenses greatly reduce glare.

• CATS and Maximo Link

The link between CATS (the JLab Corrective Action Tracking System) and Maximo has been completed. The “Submit Work Request” button remains and still opens a path into Maximo for entering work requests. Maximo now enters a status update in CATS containing the work order number. On completion of the work order, a new status update is entered and e-mails are sent to the interested parties notifying of completion. This now provides a closed loop system in CATS for entry and completion of associated work orders.

Accelerator

The cryocycling of cryomodules NL09 and NL10 is complete and NL04 was declared fully operational after commissioning checks. Acid flushing of the Halls A&C box power supplies was completed. The first two Linux-based operational consoles have been installed in the Machine Control Room. Sump pump testing of the newly installed sump drain piping was completed. Following work on the 40 MVA substation, a transformer at LN1 was found to have a damaged bayonet fuse holder. Parts were ordered but did not arrive on site until Tuesday. Repairs are underway. A temporary generator was obtained to power building 87 until the transformer is repaired.

Free-Electron Laser (FEL)

The gun finished vacuum bake ahead of schedule with excellent pressure readings. FEL staff can now move on to assembling the rest of the beamline in the Gun Test Stand. The optical table was hung behind the gun, and assembly will soon begin on the drive laser system. The GTS Personnel Safety System passed design review, so installation can also continue.

Theory Center

Twenty years of experimental investigation since the discovery of the proton spin crisis has clarified the situation enormously. The fraction of the spin of the proton carried by its quarks and anti-quarks is now somewhat larger than the original measurement suggested and experiments searching for evidence of large amounts of polarized glue in the proton have yielded negative results. In light of these developments, a recent Theory Center paper, [arXiv:0709.4067v1 \[hep-ph\]](https://arxiv.org/abs/0709.4067v1), shows how the current data on the spin structure function can be explained in terms of well-understood non-perturbative physics which should be included in all realistic models of hadron structure. The consequences for future experiments with the 12 GeV Upgrade, especially the study of GPDs with their sensitivity to quark orbital angular momentum, are also discussed.

Computing and Networking Infrastructure

As part of ongoing improvements to JLab's infrastructure, a new voicemail system will soon be installed. The change is currently scheduled to take place on or around Oct. 23. While the old system will remain online during a short transition period, messages stored there will be lost when the system is decommissioned. Please start now to retrieve any information from those messages that you wish to keep. Additional information about the new system will be available in the coming weeks. If you have any additional questions, contact Walt Akers, x7669, or Dawn McGinnis, x7206.

Announcements

• JSA Initiatives Fund Call for Proposals

Jefferson Science Associates, LLC, has issued a call for proposals for the JSA Initiatives Fund. The application deadline is Oct. 15. An [application and details](#) can be found on the SURA website.

• New Stockroom Open

The new JLab Technical Stockroom operated by JLWs opened for business Sept. 17. The new store is located where the old stockroom was – building 90, room 108. It is open Monday through Friday, from 7:30 a.m. to 4:30 p.m. Everyone at JLab is encouraged to stop by the new store to browse the shelves and bins.

• JLab's Safety Numbers (Oct. 3, 2007)

13 Days since Last Recordable Accident (JLab Record: 319)

333 Days since Last Lost Workday Accident (JLab record: 455)

JLab Calendar of Events

Oct. 10-13: [DNP 2007](#)

Oct. 8: Columbus Day

Oct. 24: JAG Fall Event: Oktoberfest

Oct. 30: Science Series Lecture: Forensic Dentistry