

## Jefferson Lab Weekly Briefs

September 26, 2007

### Limited Power Onsite Sept. 29-Oct. 1

JLab will experience a near-facility-wide power reduction/outage from 5 a.m. Saturday, Sept. 29 - 7 a.m. Monday, Oct. 1. All facilities except the VARC and the ARC will be impacted. Before leaving work on Friday, Sept. 28, please turn off and unplug electrical components (personal computers, UPS units, printers, copy machines, etc.). Leave refrigerators/freezers plugged in and make sure all refrigerator/freezer doors are tightly closed. For more information, see the [full notice](#).

### Physics

The Frozen Spin Target (FROST) is currently being installed in CLAS. The pumping units and the 5 Tesla polarizing magnet have already been mounted. The target cryostat is being prepared in the EEL for transport to the Hall. In previous tests, the target was polarized to about 60 percent. There is still one issue to be resolved; the superconducting holding coil appears to have some non-superconducting joint that causes the coil to quench below the design value. This problem will be addressed before the cooldown next week. The Upgrade of the large-angle time-of-flight system is in its final stages.

### Accelerator

Commissioning of the replaced cryomodules continued with particular attention to the arc detectors, as well as the stub tuners. Scheduled cryocycling of several cryomodules for the next two weeks began. The Capture section was investigated and several problems solved. Outlook for steady state operation looks good. The North and South linacs were swept and locked up for radiofrequency (RF) checks on a daily basis. Erratic operation of vacuum valve VBV0L06 was traced to faulty pins in a connector. The bunchlength script was fixed, and a bug in the BURT all-save program was identified and removed. The upcoming 40MVA substation maintenance and resultant power outage planning was reviewed with Virginia Dominion representatives.

### Environment, Safety, Health & Quality

JLab had its second FY2007 injury last week when a subcontract security guard lost his balance and fell on Sept. 20 at the accelerator site. The fall resulted in a hand injury that required medical treatment, but fortunately did not result in any restricted or lost workdays. Both FY2007 JLab DOE-reportable injuries and three out of the last four reportable injuries resulted while walking. The following basic walking safety tips are important for all of us to remember both at JLab and at home:

- Put your best foot forward, wear the right shoes with soles in good condition for the job;
- Always use handrails on stairs;
- Keep aisles and walkways free from clutter;
- Don't overload: take only what you can carry comfortably and make sure that you can see over it;
- Pay attention when you are walking both indoors and outdoors. In essence, this means to make a habit of visualizing your footpath at all times, a highly effective practice in preventing accidents.

### • Fermilab LHC Magnet Failure Report

Many JLab staff are aware of the March 2007 Large Hadron Collider (LHC) magnet system failure. The event occurred at CERN when structural supports internal to a Fermilab supplied magnet failed in a pressure test. The magnet failure root cause analysis (RCA) was recently completed. The RCA noted that Fermilab engineering management controls did not follow a comprehensive codified design process, which includes an integrated systems design, design review and documentation based on quality principles. The RCA Team's conclusions and recommendations cover five areas: project planning and execution; design and engineering processes; training; quality assurance and; need to establish inter-laboratory and international project collaboration processes. The [RCA report](#) can be accessed online.

## **Free-Electron Laser (FEL)**

The new high-charge gun is under bake in the gun test stand. As ramping up to 250° C, the level of water contamination so far is significantly lower than seen in the past. The control computer (IOC and VME crate) for the GTS is running, and both drive lasers were certified for running, as well.

## **Theory Center**

When extracting parton distribution functions from inclusive electron-nucleon scattering experiments at low energies, it is crucial to correct the data for effects associated with the non-zero mass of the target nucleon. A comprehensive review of these target mass corrections (TMC) was recently compiled by a collaboration of JLab and high-energy physicists, arXiv:0709.1775v1 [hep-ph], which summarized the relevant formulas for TMCs in electromagnetic and weak processes, as well as their numerical significance for various structure functions. The review should serve as a useful reference for the study of structure functions in the future, especially in the domains of intermediate  $Q^2$  and large Bjorken- $x$ .

## **Computing and Networking Infrastructure**

### **• Power Outage Preparations**

The scientific computing systems -- batch farm and clusters -- will be shutdown by 5 p.m. on Friday, Sept. 28, to prepare for sitewide power maintenance at JLab this weekend. The batch farm queues will be inactivated on Thursday at 8 a.m., and new submissions to the batch farm will be stopped at 8 a.m. on Friday. Systems will be returned to service Monday after power has been restored.

Also, on Saturday morning, from 8 a.m.-12 p.m., there may be some brief interruptions to network service for opportunistic maintenance.

### **• Password Change**

If your most recent password change occurred before 5 p.m. Friday, Sept. 14, you have received e-mail notification of your pending password expiration. All accounts whose

passwords that have not changed by 10:15 a.m. on Oct. 9 will be automatically suspended.

### **• WEP Key Change**

The WEP key for wireless network jlab\_guest will change Monday, Oct. 1 at 7 a.m. and will be in effect until Nov. 5. The WEP key can be obtained from the reception desk in CEBAF Center and ARC or from the IT Division Help Desk in CEBAF Center F200.

## **Announcements**

### **• Compact Fluorescent Light Disposal**

Compact fluorescent lights use 75 percent less energy than ordinary incandescent bulbs and last up to 10 times longer. However, CFLs contain mercury, so extra precautions need to be taken for broken bulbs and those ready for disposal. Follow [these guidelines](#) offered by the Energy Star program.

### **• Rad Worker Training Document**

Per last week's e-mails to all staff and all rad workers, badged radiation workers have until Friday, Sept. 28, to read and sign the [Radioactive Material Controls](#) at Jefferson Lab document. If you have questions, contact Bruce Ullman, x7170 or [ullman@jlab.org](mailto:ullman@jlab.org).

### **• JLab's Safety Numbers (Sept. 26, 2007)**

7 Days since Last Recordable Accident (JLab Record: 319)  
326 Days since Last Lost Workday Accident (JLab Record: 455)

## **JLab Calendar of Events**

Sept. 29-Oct. 1: Limited Power Onsite  
Oct. 10-13: [DNP 2007](#)  
Oct. 8: Columbus Day  
Oct. 24: JAG Fall Event: Oktoberfest