

# EGG Startup and Commissioning Tasks (CEBAF and Test Cave) (<https://wiki.jlab.org/ciswiki>)

August 15, 2013

- CEBAF Schedule
- EGG HCO
- TEDF/Beam Demo
- Training
  - ✓ MAC
  - ✓ HCO
- EGG R&D
- Test Cave Restoration

# CEBAF Schedule

- **Plan A – Anything I showed before, already scrapped**
  
- **Plan B – Presently accepted schedule, what we work to...**
  - Today            Tunnel cleanup and checkout permitting
  - Sept 28        HCO begins
  - Sept 28        EGG on-call begins
  - Oct 16         DOE “early beam” demo
  - Nov 4          2K recovery begins
  - Nov 9          HCO ends
  
  - Nov 9          Injector setup begins
  - Nov 11         2K recovery ends
  - Nov 11         Pulsed beam to FC1
  - Nov 16         Pulsed beam to FC2
  - Nov 21         Pulsed beam to INJ spectrometer
  - Nov 24         Pulsed beam to OR dump (end of injector)
  
  - Nov 28         Run through Thanksgiving
  - Dec 18         1-pass pulsed beam at 2.2 GeV
  - Dec 20         Winter shutdown
  
  - Feb 5          ACC-II begins
  - May 7          ACC-II ends
  
- **Plan C – Delay commissioning until Jan 2014 (TBD by mid-October)**

# EGG HCO

## ➤ HCO < chopper

- Gun to Chopper (other groups will be doing broad system checks)
- EPICS upgrade means all controls (EPICS + applications) should be thoroughly tested
- Pay particular attention to verifying and testing interlocks, configuration control

System	Expectation
Photocathodes	Activated SSL w/ viable spares
High Voltage	130kV w/o field emission
Laser	3 laser w/ pulsed modes
Vacuum	Good profile, no FE
Things that move (e.g. apertures, valves)	Limits/positions checked, gears lubricated
Valves	EGG/EES-IC
Viewers	EGG/EES-IC
BPM's	EGG/EES-IC
Harps	EGG/EES-IC
Magnets	EGG/EES-DC
Warm RF	EGG/EES-RF

## ➤ HCO > chopper

- Usual hands-on support to troubleshoot and help
- Mott system comes back together again 100% during HCO
- PEPPo 5D line decommissioned (unpowered, not removed)

## ➤ **Wednesday, October 16 – TEDF Dedication**

- Incumbent DOE secretary Ernest Moniz invited to start CEBAF 12 GeV operations
- Turn the beam on, whether he shows up or not
- Beam On Button
  - ✓ Plan A = EPICS screen w/ big button
  - ✓ Plan B = “customized button” TBD

## ➤ **Arne requested estimated of simplest beam demo from the gun: beam on 1<sup>st</sup> viewer**

- **Photocathode** – SSL, activated in advance, QE scan
- **Gun** – PSS to beam permit, HV process gun in advance, HV controls working
- **Laser** – 3-laser LLRF, tune-up to source, laser controls working
- **Beam Termination** – 1I02 Viewer
- **Controls** – viewer handful of magnets, viewer, video, diagnostic controls working
- **Timeline** – Start 10 days in advance, Monday October 7<sup>th</sup>?

# Training - MAC

## ➤ **IOC-based access replaced by User-based access**

- ACE account gives access to entire machine (no more “injector group”)
- Channel access security goes into effect late October
- Two factor authentication now required
  - ✓ On-site : MCC & Tunnel OK, ISB TBD
  - ✓ Off-site : crypto keys distributed (USB, Android & iPhone apps)

## ➤ **New method requires training**

- If you need to control something get training; minimum is EGG on-call
- Estimated 8-16 hours to complete

<a href="#">MCC101</a>	Introduction to MCC
<a href="#">MCC103</a>	MOM
<a href="#">MCC104</a>	Accelerator Operations Directives
<a href="#">MCC107</a>	Intro to the JLab Computer Network
<a href="#">MCC110</a>	Intro to JLab computer net
<a href="#">MCC111</a>	General Tools Screen
<a href="#">MCC112</a>	Log books and log book entries
<a href="#">MCC115</a>	Backup and Restore Tool (BURT) SAVER I
<a href="#">MCC131</a>	IOCs
<a href="#">MCC132</a>	Archiver
<a href="#">MCC139</a>	SRF Control Screens
<a href="#">MCC145</a>	Channel Access Control
<a href="#">MCC148</a>	Ops Work Station
<a href="#">ADM008</a>	Machine Access Control Briefing
<a href="#">MCC-702.19</a>	Operations Safety (taped or <b>live 8/15/13 at 2pm</b> )
<a href="#">MCC-702.08</a>	AOD Supplement (taped or <b>live 8/15/13 at 3pm</b> )

# Training - HCO

## ➤ **GEN 134**

- New HCO for 12 GeV accelerator
- Two-person sign-off process

## ➤ **Training**

- Status updates
- Sign-off criteria
- Instructions

The web-based version of this training (GEN134) will be available Aug. 16 online at:  
[http://www.jlab.org/div\\_dept/train/webbasedtraining.html](http://www.jlab.org/div_dept/train/webbasedtraining.html)

## ➤ **Pulse Picking**

- Status
- Parts and resources
- Beam test

## ➤ **Mott Upgrade**

- Done
  - ✓ Was vented for collimator survey, now under vacuum to stay clean
  - ✓ Chamber IP replaced
  - ✓ Signal cables re-routed (possibly solved noisy detector)
- To Do
  - ✓ New target ladder (Danny), Gearing (John), Controls (Wes), Viewers (Phil)
  - ✓ Beam line FE'er, probably off years, to be replaced (Jim)
  - ✓ New dump plate constructed from Be/Cu being designed (Joe/Charlie)
  - ✓ DAQ block readout (Riad/DAQ Group)
  - ✓ User controls (Riad/Sue)

## ➤ **Bubble Chamber Update**

- Add a BPM in 2D line?

# Test Cave Restoration

## ➤ Walkthrough with Rusty et al

- Test Cave
  - ✓ Damaged roof => FM fixing now
  - ✓ Cave Power => FM end of week
  - ✓ Dirty stuff => Evelyn check if FM cleans too, Mike Llewelyn for floors
  - ✓ Temporary laydown area for cleaning => Evelyn
  - ✓ Air intake => Facilities next 1-2 weeks
  - ✓ Debris & cables between cave and rooms => Facilities next 1-2 weeks, then Jason Willoughby
  - ✓ Cage storage area => No fences or shelves. Cabinets OK or use shop area
  - ✓ Contractor materials => Move their stuff to Mortensson layout area
- EEL 117 Status

## ➤ Controls

- Computing
  - ✓ (Cuffe) \$3k for two workstations if willing to go single-head at EEL-117; or more \$\$\$
  - ✓ (Cumbia) \$8k for ioc and network switch
- Software (Pam)
  - ✓ Send hardware list to Pam (wants EPICS 3.14 upgrade)
  - ✓ Coordinate Theo Larrieu for JTABS environment
  - ✓ Brad/Anthony setup network/ioc first; ETA October-ish
- New Fire Protection System
  - ✓ Coordinate with Dave Kausch for laser interlock and first bakeouts
- DC Power
  - ✓ Coordinate w/ Simon to check/restore power
- PSS
  - ✓ Plan?
- RadCon
  - ✓ Agreed with Dave Hamlette for walkthrough prior to operations