

Long Shutdown Integration Meeting

July 25, 2013

F224-225, 10 am

MINUTES

Presentations available at: https://www.jlab.org/div_dept/directorate/proj_mgmt/lsd/index.html

- **Introduction**

F. Pilat

- **Outcome of CAB Meeting**

- LSD has played a role in the shutdown effort and now this effort is being transferred to commissioning
- Started a discussion on lab-wide coordination and/or planning tools after the LSD
- At the CAB Meeting (7/24), we reviewed and endorsed the response of the Commissioning Team to the Commissioning Review recommendations. A few are still (mainly shielding), but there is a plan to close them.
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- **LSDD report**

K. Baggett

- See presentation for full details
- 103 days to Beam/56 days to HCO
- 4 magnets remaining
- New ARC 1 Power supply will be delivered next week, it has arrived in customs
- AHU duct work has been installed
- ARC 10 4 meter dipole cable installed
- ARC 10 LCW Manifold installed
- JF Dipole and YR magnet have been performing well, fewer corrections than expected
- 2S (W2) Heliax cable installation ongoing

- **June Scheduling Progress**

P. Collins

- See presentation for full details
- 8 weeks remaining until down is over
- Progress sheets are due COB August 2
 - If on vacation, please ensure they are turned in before departing or delegated to someone who will be here
- Overall, currently 1,384 labor hours behind schedule, mainly maintenance activities
- Cryogenics, RF, Cryo-modules and Beam Transport are critical
- Too early to call if we are holding the end date

- **Risk Assessment**

S. Smith

- See presentation for full details
- 2 risks out of 11 are graded as “high”, a few are retired, and 3 “low”
 - First “high” Budget issues
 - Plan for mitigation
 - Current shift of scope
 - No present alternatives, too early to call the end of the Down

- Second “high” is 2K Coldbox recommissionion
 - The round bullets on slide remain to be completed
 - Refurbish speed controller (SNS has been contacted for spare part)
 - Plan to swap out, but will remain “high” even after part is installed
 - Control cards are going well

- **Beam transport - update**

L. Harwood

- Beam transport running late, ETC cost/schedule – if complete access tunnel/resources, with present staffing tapering off in September; alignment work remains for October (scope that beam transport would be done), complete D&C lines, complete Hall D tagger, complete transport recombiner
 - If all remains “as is”, completed in August
- Fulvia comments that a few months ago, you stated you were on task and even before schedule.
 - Leigh responds that a meeting is to be held today (7/25) at 11 to discuss this reason and why it fell behind. Another beam transport meeting at 1:30

- **Cryomodules – update**

M. Drury/J. Preble

- See presentation for full details
- C100’s RT valve not functioning (stuck in middle of open/close, not fully opened)
 - 5% of travel through open/close on 2K line.
 - Dana A. comments that they suspect the stem seal did not fully seal by the manufacturer, add to that the humidity has turned the bellows into a block of ice
 - So heat from outside may/may not work to clear the jam
 - Cannot keep at 2K with current status.
 - 200 watts, gradient is okay
 - Unsure of Q’s, but not showing signs of boiling. Average value could be determined and use a lesson learned for algorithm
- Can currently work “as is”, but unsure what the valve will affect
- Testing to be done by September (not completely accurate)
 - Assumption of 2K everywhere
 - Cryomodule test schedule
 - Takes resources away from commissioning
 - install module into machine
 - Vacation plan effect – Preble will send follow up
 - Originally stated there would be “no impact” with vacations scheduled, however 2/3^{rds} of workforce is exempt (Preble/Drury reevaluating with more focus on the impact)
 - Drury states it’s a complex schedule with tasks assigned to specific employees, cannot switch people out.
 - Plan to have a evaluated copy of vacation plans by early next week
- One caveat to the summary, adding in CHL and high power RF

- **RF Power (circulators) - update**

B. Merz

- See presentation for full details
- 2 days ago there was a summary meeting

- 59 circulators at lab, 22 circulators at vendor
 - 3 remain unaccounted for (not sure if at the vendor or at lab, since there was been a lot of back and forth, tracking is fuzzy)
- Lab has returned at least 16 to Ferrite
- How long does the testing take?
 - Approximately, 3-4 working days for delivery, 1 hour to test, (1 week for everything)
- Alternative vendor was looked at, however twice as expensive
- Expect all circulators to return to JLab by 8/19, engineer will return to JLab to oversee the testing
 - Vendor has spoken with Mitch/Rick/Bill and plans have been arranged
 - SL installation more difficult, relies on delivery, test, acceptance, and installation of remaining units
 - Plans may extend to September

• **Cryogenics - update**

D. Arenius

3 major problems

- Major problem 1: CHL-2 pressure pulsation and vibrations
 - Vendor did not install thermo isolators
 - Corrected
 - Long horizontal line not secured
 - Corrected
- Major problem 2: CHL-2 High liquid nitrogen precooling amount equivalent to old machine, but did not plan on with the new machine
 - Running colder than anticipated
 - Put Borescope in and reversed purged
 - Found nothing, but did find corrosion on the inside
 - If run in Fall, impact to use more liquid nitrogen, two-fold
 - Expected a 40% savings, but not with the liquid nitrogen problem
 - Anticipate a solution with time, Dana expects it would take at least a year or two to fix current issue (6 month job to fix)
- Major problem 3: Hall D – charcoal plugging increasing
 - 50% cold box capability
 - Cold purging to get charcoal out
 - Usually 1 hour worth of time
 - Found pressure drop returned within 2 hours
 - Cold purging not viable option
 - Without warming cold box, helium Dewars create a balance between compressor and Dewar
 - No connections to take helium vaporizer to remove or counterflow with warm up
 - It cannot process gas – too cold
 - Last transfer – true leakage at supply valves
 - 139 valve
 - Plan for August 9 date, but not likely
- Linac
 - Problem with return valve
 - CHL1 not much 4K capability

- Heat-exchanges too small leads to cut back
- Cool down on hold until solution
 - Modules are currently full of liquid helium, no storage
- Few weeks ago, 50% of capability, currently using about \$60K of helium
 - If don't put \$60K in, lose 15 mil by Aug. 9
 - 12 GeV rebaseline depend of HD solenoid tests
 - Dumping Dewars – fill Dewars at CTF?
 - Each 1,000 gal Dewar, not as efficient
 - Not able to remove from table, but also not viable option for CTF
 - Keep Joe Preble in loop if CTF will be used, so planning can be arranged
- Other option, provided by Claus, is to pull an 11,000 gallon semi-truck directly into the Hall.
 - Could test with raw liquid
 - Believe that most would go up the stack
 - Per Claus, Funding this option would not be on Ops!

• **Commissioning: outlook on schedule**

A. Freyberger

- See presentation for full details
- Currently needed:
 - New cryo schedule from Dana
 - on vacation
 - Complete own schedule for Ops
- understand whether able to make it or not
 - What is the time of no return?
 - Once detailed scheduled, will be able to provide a date
- Question to Bob
 - ARR is about a month away, currently MCC occupancy is August 14, dangerously close o August 19 (start ARR)
 - Rework on HVAC piping for agent to recheck
 - Control room, hall, conference room must be ready for ARR
 - Hoping to have building ready one week prior to ARR
 - Once released, MCC readiness
 - 3 business days prior to review for AV
 - Need vacuum results to ensure where they are

• **Around the room**

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|---|----------------------------|
| • 12 GeV accelerator | L. Harwood |
| • 12 GeV physics | G. Young |
| • Physics | R. Ent, J. Gomez, W. Akers |
| • FEL | G. Neil, R. Walker |
| • Operability | S. Suhring, A. Freyberger |
| • Commissioning, CASA | M. Spata |
| • Engineering, Cryogenic | W. Oren |
| • Facilities | B. Sperlazza |
| ○ Counting house has been released, about 3-4 weeks of punch efforts, air handlers are still being worked, but are now open for use | |
| • ESH&Q | M. Logue, D. Owen |
| • PMI | P. Collins, K. Krug |