

LSD – Overall Cryogenic Work Plans

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General Scope & Logic

- 5 Cryogenic Plants to consider
 - CTF
 - CHL 1
 - CHL 2
 - Hall D
 - ESR
- Presently ALL are at 300K
- Each is needed for a specific purpose
- Each has unique steps to begin operations and there is coupling between the plants
- There are timelines associated with operations of each plant that are also unique and coupled.

CTF

– Needs

- C100 testing
- VTA operations
- Helium gas inventory management for CHL/Linac cooldown

– Steps to Operation

- Testlab COO signoff - **Complete**
- 1 week of cleanup – Starts today or Monday
- 1 week of cooldown – Drop dead start date of Dec 3

– On-going Operations

- Need to be “smooth” (low overhead) Jan -> May
- July preventative maintenance downtime of ~2wks should be considered
 - Preempt work during CEBAF startup Sept – Nov
 - Replace failing LN2 dewar – CATS item

CHL 1/Linacs

- **Needs**
 - C100 commissioning - must start by late Jan.
 - C20/50 recommissioning – should start late Jan.
- **Steps to Operation**
 - N. Linac cleanup – start by 11/20 (may slide)
 - S. Linac cleanup – start by 1st week of Dec. (ditto)
 - Complete CHL 1-2 cold x-connects 1st week Dec.
 - Cleanup complete by Jan 2.
 - Begin CHL 1 cooldown w/ both Linacs & FEL Jan 7, will use CTF inventory during this time – could slow VTA operations
 - 3rd wk Jan fill Linacs with trucked in LHe
 - 2K pumpdown 3rd wk Jan
- **On-going Operations**
 - Support C100, C20, C50 commissioning efforts until May
 - *Should* terminate operations before May meter read
 - *Should* restart operations after Sept meter read

CHL 2

– Needs

- Warm compressor acceptance tests
- 4K Coldbox acceptance tests
- C100,C20, C50 commissioning starting May

– Steps to Operation

- Warm compressor prep end of Jan
- Start warm comp. commissioning early Feb
- 4K coldbox commissioning – early March
- Complete transfer line construction before May 1
- Map operational envelop as time allows in April and during summer operations

– On-going Operations

- Support C100, C20, C50 commissioning efforts May 7 -> Sept 7
- Map operational envelop as time permits
- Once machine is cold in May it operates until further notice.

CHL 1/CHL 2 Tandem Operations

– Needs

- Prep for 12 GeV operations
- Should begin after Sept meter reading

– Steps to Tandem Operation

- Take CHL 2 (2K operational thru the summer) to 4K
- Cool CHL 1 to 4K
- Pull u-tubes to split N&S Linacs
- Begin 4K ops CHL 1 & 2 to N & S Linacs and FEL
- Cool CHL 2, ?? Linac and FEL to 2K (Elapsed time to this point ~ 2wks)
- Commission remaining 2K CB with CHL 1 (~3-4wks)
- Operate remaining Linac on CHL 1

– On-going Operations

- Support RF operations and machine “hot checkout”.

Hall D

– Needs

- Solenoid cooldown and “acceptance” testing

– Steps to Operation

- Complete warm piping to and from fridge
- Complete transfer line assembly
- System cleanup – begin gas flow first week of Dec
- Cooldown refrigerator early Jan – run on dewar heater.
- Cooldown magnet to 4K when Hall D is ready

– On-going Operations

- Support magnet tests.
- Warm magnet and fridge to 80K when testing is successful/complete.
- Heat exchanger maintenance (post 80K warmup)

ESR

– Needs

- Hall C power supply testing
- Hall C HMS recommissioning

– Steps to Operation

- Cooldown CHL 1 & Linacs
- When Hall C is ready - cooldown CHL-ESR transfer line and then begin HMS cooldown
- In this configuration ESR stays warm until Aug/Sept

– On-going Operations

- Hall C remains on CHL until sometime in August
- Restart ESR before removing CHL cooling “loop” and before Sept. CHL1/2 “dance”
- Cooldown End Stations
- Loads in addition to Hall C TBD