

SLAC Visit

13 September, 2013

Agenda *Final Version*

Friday, 13 September 2013

0745 Continental Breakfast

Test Lab, 1227

0800 Welcome, Hugh Montgomery

Test Lab, 1227

0815 Introduction, Andrew Hutton

Test Lab, 1227

0830 SLAC Presentations

John Galayda

Chris Adolphsen

Marc Ross

Test Lab, 1227

1000 JLab Presentations

SRF – Ed Daly

Cryo – Dana Arenius

Operations – Andrew Hutton

Test Lab, 1227

1100 Tour

Test Lab, Tunnel, CHL, FEL

1230 Working Lunch and Group Discussions

Test Lab, 1227

1500 Closeout, Hugh Montgomery, Andrew Hutton, John Galayda, and Marc Ross

Cebaf Center, B201

Possible Sidebar discussions

Available rooms:

TED 2536, 2547

Test Lab 1201, 2221, 2236

***Cryoplant discussion** – Bob Law with Rao Ganni and Dana Arenius*

***Project layout** – Tor Raubenheimer with Geoff Krafft, George Neil, and Steve Benson*

***Engineering Discussion** – Jose Chan and Chris Adolphsen with Will Oren*

Participants:

From SLAC

John Galayda

(Project Director)

Dave Schultz

(Deputy Project Director)

Marc Ross

(Project SRF Linac point-of-contact)

Tor Raubenheimer

(Project lead Physicist)

Chris Adolphsen

(RF)

Jose Chan

(Electron systems - integration / engineering management)

Bob Law

(Civil/ Cryoplants)

From JLab

Hugh Montgomery, Andrew Hutton, Robert Rimmer, Charles Reece, Edward Daly, Anthony Reilly, Anne McEwen, Will Oren, Dana Arenius, Venkatarao Ganni, George Neil, Stephen Benson, Geoffrey Krafft, John Mammosser, Curt Hovater

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Information from SLAC:

- 1) Introduction to LCLS II: Project definition and parameters. Plans for project-related meetings.
- 2) Project timeline and R & D objectives including potential partnership activities
- 3) Summary of JLab SRF capabilities and objectives
- 4) Consider specific technical challenges and/or tasks and begin laying groundwork for potential inter-lab partnership activities. This should include naming points of contact between JLab and SLAC.

To help get started with specifics, item 4), above:

We are considering the use of many NGLS parameters and design choices as starting points (and there is a fair amount of SRF familiarity at SLAC) we would like to 'jump-start' the process as much as practical and begin discussions of more difficult topics involving development work. From the 'big-picture' perspective:

- 1) Prioritization of specific cryomodule design / test topics
- 2) Critical demonstrations and possible timeline
- 3) Jlab (and partner lab / industry) cryomodule production capabilities

A more detailed (but admittedly incomplete) list of ILC cryomodule - related topics:

- 1) Microphonics; and needed RF overhead to help compensate for microphonics
- 2) End-group cooling
- 3) Magnetic shielding
- 4) Compensation of pressure-fluctuation
- 5) Overcoupling (choice Q_{external})
- 6) Coupler average power
- 7) HOM

Although it seems like a lot, I would like to propose we try to touch upon the technical topics from the above lists we think are most important.

Here is a draft meeting charge:

Following the July 2013 BESAC report SLAC proposed to build a 4 GeV, 0.3 mA CW superconducting linac - based FEL. The BESAC report identified such a facility as a priority for US X-ray science and OSC-BES has responded by suggesting that it be constructed in 5 to 6 years using state of the art superconducting RF technology like that used for the recently completed JLab upgrade project or that under development for the International Linear Collider. At this meeting we would like to consider a collaborative design and development program consistent with the suggested schedule and the top-level parameters proposed by the SLAC team. The goal of the program is to make the most cost-effective use of the existing expertise and infrastructure in the production of the roughly 35 cryomodules in the proposed SLAC SRF linac. The meeting should identify the most important performance concerns in adapting the low duty cycle ILC SRF technology to a CW SRF linac and should list critical demonstrations needed to proceed with a construction project based on this technology.