From: Marc C Ross
To: pmedr@fnal.gov;
cc: Atsushi Enomoto; Tsunehiko OMORI;
Subject: Accelerator Design and Integration WEBEX meeting Wednesday July 15, 2009 - "Low Power Issues"
Date: Thursday, July 09, 2009 2:59:53 PM

Dear SB2009 team,

From: Project Managers and Peter Garbincius

Topic: We will meet Wednesday, July 15, to talk about 'low power' SB2009 issues. The meeting will include a discussion of overall scope and a view to possible later upgrades. All are invited and urged to attend. Please find the agenda for the meeting (http://ilcagenda.linearcollider.org/conferenceDisplay.py?confId=3726) (also below).

Meeting time: Wednesday, July 15, 2009, 0600 SLAC, 0800 Fermilab, 1400 UK, 1500 EU, 2200 Japan. Webex connection information to follow.

Purpose: This meeting (and the two that are to follow) are primarily focused on consolidating the cost estimations associated with the elements of the straw-man baseline currently under study (for ALCPG09). Cost comparisons with respect to RDR will be developed following the format used in the August 2008 comparison of the RDR and Klystron Cluster HLRF scheme (http://ilcagenda.linearcollider.org/getFile.py/access?sessionId=11&resId=0&materialId=1&confId=3526).

Agenda:

Introduction: Peter Garbincius (10 min)

Low Power Linac operation and impact on Klystron Cluster HLRF Power Distribution System: Chris Adolphsen (10 min)

Low Power HLRF System and impact on Distributed RF System: Shigeki Fukuda (10 min)

Impact of SB2009 Low Power on CFS criteria – questions: Vic Kuchler (10 min)

Backup material:

> SB2009 Definition and Working Assumptions (http://ilcagenda.linearcollider.org/materialDisplay.py?materialId=0&confId=3526): 1) With respect to the Reference Design, a reduced parameter set is to be adopted - number of bunches = 1312 and a 2ms RF pulse, 2) a Single-tunnel solution for the Main Linacs and RTML is to be adopted, with two possible variants for the HLRF - Klystron cluster scheme and DRFS scheme and 3) the CFS team will develop design solutions for each HLRF variant at each of the (3) sample sites.

The DESY meeting report: http://ilc-edmsdirect.desy.de/ilc-edmsdirect/file.jsp?edmsid=*879845 – SEE TABLE PAGE 18.

August 2006 (Chris Adolphsen) presentation on low power operation: http://ilcagenda.linearcollider.org/getFile.py/access?sessionId=3&resId=0&materialId=5&confId=3526

Availability Task Force - July 2009 (Shigeki Fukuda) presentation on DRFS availability, including low power option: http://ilcagenda.linearcollider.org/getFile.py/access?contribId=1&resId=0&materialId=slides&confId=3719 (see slides 17 and 18).

What is to be included in the presentations – comments:

Primary point: make sure component counts and specifications are fixed to allow the cost estimation to proceed. (This must be done for each of the 3 sample sites). There are two extreme scenarios:

A. Push component counts, power, cooling and building space requirements to a bare minimum in support of the low-p 5MW average beam power. The cheapest, but more expensive and complicated to 'upgrade'
B. Make sure that all the support CF and required volume for FULL POWER (Reference Design) is installed up-front, but install only 1/2 the klystrons/modulators/PS. The most expensive up-front option, but does allow a straightforward upgrade path for the beam power.

There ought to be at least one scenario in between.

HLRF and the associated CFS are the main topics and will be the focus of the meeting. For this meeting, we will NOT include:

1. discussion of the DR, leaving that as a separate issue. We have a number of 'conceptual' upgrade paths to doubling (for example) the number of bunches. For this initial meeting we will assume that a DR solution can be found.

2. discussion of dumps, collimators etc. which will be left at their RDR specs. These are not cost drivers.

3. discussion of the lumi issue - primarily beam dynamics. As Andrei pointed out - the 'addition cost' of the travelling focus support is another crab system.

Also the risk factor. For example, in (A) the cost of installing power overhead (for example) for the HLRF PDS to accommodate the future upgraded power should be considered. This may not be cost factor, but could be a performance risk factor.

Outstanding QUESTIONS, especially from the CFS team. What information is needed (and by when)? Is each variant and each sample site properly included?