



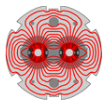
*brookhaven - fermilab - berkeley - stanford*

## LARP – technical planning

Steve Peggs

Now is the season for intensified communication between CERN and LARP:

- Oct 1           New LARP budget for FY07
- Oct 4           This meeting
- Oct 11          LHC Joint Oversight Group (DOE & NSF)
- Oct 16-20      CARE LUMI-06, Valencia
- Oct 25-27      LARP Collaboration Meeting
- Oct 31          LARP Executive Committee meeting
- Nov 13          CERN-US Committee mtg



# FY07 budget (Oct 06 – Sept 07)

LARP

LARP FY07 budget version v2a

Sept 27, 2006			Total	FY 2007			
WBS				BNL	FNAL	LBNL	SLAC
<b>US LHC Accelerator Research Program</b>			<b>11000</b>	<b>2664</b>	<b>2688</b>	<b>4182</b>	<b>878</b>
1	<b>Accelerator Systems</b>	<b>Shiltsev</b>	<b>3611</b>	<b>648</b>	<b>821</b>	<b>1314</b>	<b>828</b>
1.1	Instrumentation	Ratti	1506	315	222	969	0
1.2	Commissioning	Syphers	540	48	329	145	18
1.3	Collimation	Markiewicz	930	135	15	0	780
1.4	Accelerator Physics	Fischer	635	150	255	200	30
2	<b>Magnet R&amp;D</b>	<b>Kerby</b>	<b>5212</b>	<b>1243</b>	<b>1494</b>	<b>2475</b>	
2.1	Design Studies	Zlobin	526	150	254	122	
2.2	Model Magnet R&D	Sabbi	1975	61	896	1018	
2.3	Supporting R&D	Ambrosio	1377	773	113	491	
2.4	Materials	Ghosh	1334	259	231	844	
3	<b>Program Management</b>	<b>Peggs</b>	<b>2177</b>	<b>773</b>	<b>373</b>	<b>393</b>	<b>50</b>

**Program Management** (\$2.2M, 20%) includes

- **Toohig Fellows** Calaga (AS) 50% at CERN, Felice (MRD)
- **Programmatic Travel and Management** (Labor)
- **Contingency** (\$0.6M, 5.3%)



# Accelerator Systems (\$3.6M, 33%)

**Four Hard Deliverables** jointly identified by LARP and CERN:

1) Luminosity Monitors (\$1.0M)

A review held on April 24 noted good progress. FY07 is crucial.

2) Tune Feedback (\$0.31M)

Excellent progress. "Final Design Review" Oct 24. Winding down.

3) Beam and Instrumentation Commissioning.

**A vetting procedure needs to be established to ensure excellence.**

Part of "Long Term Visitor" planning/issue

4) Rotatable Collimators (\$0.8M)

This longer time scale task is ramping up



## AS – continuing tasks

Schottky Monitor (\$0.12M)

Successful, winding down.

Interaction Region and Hardware Commissioning (\$0.48M)

+ significant financial support for HC from FNAL & LBNL

HC Memorandum of Understanding is days away from done

In excellent shape & hands (Saban & Lamm)

Cleaning Efficiency Studies (\$0.05M)      Nearing completion

Tertiary Collimator Study (\$0.02M)

Irradiation Studies (\$0.08M)      Increasing interest

Electron Cloud (\$0.20M)

Code development

IR & Beam-Beam (\$0.27M)

Re-evaluate after Oct CARE/Valencia mtg

Beam-Beam Wires (\$0.15M)

RHIC is the only test-bed. Observables?

Last 3 items – Accelerator Physics under Fischer – need careful attention at the Collaboration Meeting, Oct 25.



# AS – NEW tasks

## AC Dipole (\$0.08M)

Needs integration with (and communication from) new LHC effort

Task leader Sacha Kopp is from University of Texas at Austin

- is also seeking (modest) NSF funding
- (How) does LARP incorporate new institutions & funding sources?

## New Initiative Feasibility Studies (\$0.02M)

Place holder (this year). LER? Longitudinal photon monitors? ....



## Magnet R&D (\$5.2M, 47%)

One Hard Deliverable:

“Demonstrate by 2009 that  $\text{Nb}_3\text{Sn}$  magnets are a viable choice for an LHC IR upgrade”

Lucio has already shown that:

FY07 is an exciting transition year

Initial TQC/S results are very promising

Length experiments are coming on-line

Studies and Designs for the next steps are ramping up

What are LARPs technical goals then (assuming success)?

Continued R&D collaboration with CERN/CARE

LARP is an R&D program

U.S. magnet construction (if any) would be separately funded



# Magnet R&D collaboration

LARPs mission statement:

- 1) Help LHC make more luminosity
- 2) Exploit/develop/maintain U.S. accelerator science and technology by performing cutting edge R&D

CERNs perspective on LARP may be different. For example,

- 1) Help LHC make more luminosity
- 2) Maximize the funding stream from the U.S.

Superficially, this makes CERN appear more interested than LARP in a short U.S. production run of IR upgrade magnets!

**In fact, it is in all our interests for CERN to write an institutional letter of support/collaboration for the LARP technical program.**

Our DOE allies crave such formal evidence, in their efforts to extrapolate LARP funding “guidance” beyond FY09



# Enhanced technical communication

## Use/modify 4 existing mechanisms

- 1) More CERN attendance at semi-annual collaboration meetings
- 2) Re-invent the CERN-U.S. Committee (“done” - management?)
- 3) Observe at (participate in) DOE reviews
- 4) Regular phone, video and webex-style conferences

## Liaisons

- 1) LARP “local leader” - currently Limon
- 2) CERN L2 linkmen work with LARP L2s
- 3) “Long Term Visitor” CERN linkmen